Comparison functioning and quality of life of patients with osteoarthritis and rheumatoid arthritis

Bączyk G, Samborski P, Pieścikowska J, Kmieciak M, Walkowiak I*

Faculty of Health Sciences Department of Nursing, Karol Marcinkowski University of Medical Sciences in Poznań, Poland

Abstract

Purpose: The aim of this study was to assess the quality of life of the osteoarthritis (OA) and rheumatoid arthritis (RA) patients of Outpatient Clinic Rehabilitation in Poznań.

Material and methods: The study consisted of 97 OA patients, including 86 women and 11 men. Almost 123 patients with RA included of 102 women and 21 men. The mean age of the treated patients with OA was 11.50 and 11.10 years for RA patients. The Polish version of the Arthritis Impact Measurement Scales-2 (AIMS -2) was used to assess the quality of life. AIMS-2 scores range from 0-10, with 0 representing good quality of life, 10 representing poor quality of life.

Results: It was showed that the mean score on the AIMS-2 for OA patients was: physical – 3.53, affect – 4.42, symptom – 6.74, social interaction – 3.33, role – 4.20. Mean score on the AIMS-2 for RA patients was: physical – 3.73, affect – 4.48, symptom – 7.09, social interaction – 3.45, role – 3.63. The quality of life depended on the sex of these patients. Women of OA and RA patients scored significantly higher in the physical state and symptom then men. Younger patients and suffering shorter than 5 years demonstrated higher evaluation of quality of life in the physical state. The assessment in most of the subscales of the AIMS-2 correlated significantly with Pain, Morning Stiffness and Grip Strength for OA and RA patients.

Conclusion: This study showed that quality of life of OA and RA depends on gender, age and clinical variables.

Key words: functioning, quality of life, osteoarthritis, rheumatoid arthritis, Arthritis Impact Measurement Scales-2.

* CORRESPONDING AUTHOR:
Karol Marcinkowski University of Medical Sciences in Poznań
Faculty of Health Sciences, Department of Nursing
60-179 Poznań, ul. Smoluchowskiego 11, Poland
Tel: +48 61 6559261; Fax: +48 61 6559266
e-mail: gbaczyk@amp.edu.pl (Grażyna Bączyk)

Received 15.03.2007 Accepted 01.04.2007

Introduction

Joint disorders, particularly osteoarthritis (OA) and rheumatoid arthritis (RA) are a leading cause of disability. Research on osteoarthritis and rheumatoid arthritis has stressed the experience of loss of independence, being a burden on others, the difficulties involved in asking for help and consequently, the importance of being able to maintain independence and normal social roles [1,2]. Osteoarthritis is primarily a non-inflammatory disorder of movable joints characterized by an imbalance between the synthesis and degradation of the articular cartilage, leading to the classic pathologic changes of wearing away and destruction of cartilage. This destruction of joint cartilage often results in joint pain and loss of mobility, which may lead to long-term disability. This is of major concern because the prevalence of OA is expected to increase significantly due to the aging of the Poland population [1,2]. Rheumatoid arthritis is a chronic, developing process of inflammation of synovial membrane, leading to the destruction of the articular and periarticular tissues, which results in deformity and disability of the functioning of theses tissues, and, in consequence, leads to permanent lameness. Apart from the articular and periarticular symptoms there occur also changes within the internal organs: heart, lungs, liver, spleen, as well as skin and blood-vessels which occur with various frequency. Because of that placement of the disease process, RA has been classified as the systemic disease of the connective tissue [1,2].

A faster development of the disease and a more rapid loss of physical ability has been observed among the patients over 60. More than a half of RA patients suffer from at least one more chronic condition such as conditions of respiratory system, alimentary system, circulatory system, urinary system and a diabetes. The most common are the complications caused by the medication, especially length use of non-steroid antiphlogistic medication [1,2]. The impact of OA and RA have been studied mainly focusing on their consequences on health status. Similarly, treatment efficacy is assessed within the context of

health status and symptomatology in many clinicl trials [3,4]. In rheumatology, Health Related Quality of Life (HRQoL) refers to patients' evaluates of their current levels of functioning and satisfaction, and assessment allows a subject to express ability to perform daily activities across many domains which include physical, social and cognitive functioning, role activities and emotional well-being. Recently in rheumatology are research (qualitative study) at subject perceptions patients of treatment with new drug therapy (anti-TNF therapy) [5]. Important goals of health care for patients with joint disorders are to minimize functional loss, maintain independence and preserve quality of life [6].

Aim

The aim of this study was to assess the functioning and quality of life of patients with Osteoarthritis and Rheumatoid Arthritis treated in Outpatient Clinic Rehabilitation in Poznan, Poland. All were attendees to a regular outpatient clinic.

The specific question was: does the functioning and the quality of life of OA and RA patients depend on demographic variables (gender and age) and duration of the disease?

Does the quality of life of OA and RA patients depend on clinical symptoms and pain?

Material and methods

The study sample consisted of 97 patients with symptomatic OA of the knee and hand, including 88.66% women and 11.34% men. According to American College of Rheumatology (ACR) [1,2,7] classification criteria OA was diagnosed if pain and radiological OA were present, with morning stiffness lasting less than 30 min. The sample 123 patients with RA included of 83% women and 17% men. Patients with RA were recruited according to American College of Rheumatology (ACR) [1,2,7] classification criteria RA. Exclusion criteria included severe neurological for both groups. The mean age of treated patients with OA was 56.8 (±13.54) years and 53.4 (±12.93) years for RA patients.

The mean duration of the OA was 11.5 (±8.91) and duration of the disease for patients with RA 11.1 (±8.30). There were no notable differences between the groups on demographic variables (gender and age) and duration of the disease. To assess the functioning and the quality of life the Polish version of the Arthritis Impact Measurement Scales-2 (AIMS-2) [8,9] was applied. AIMS-2 scores range from 0-10, with 0 representing high quality of life, 10 representing poor quality of life. The questions included refer to the quality of life in 12 subscales. These are mobility level, walking and bending, hand and finger function, arm function, self care tasks, household tasks, social activity, social support pain from arthritis, work, level of tension and mood.

Clinical tests

Grip Strength Measurement (measured by vigor meter); Morning Stiffness (duration of morning stiffness in minutes from arising until maximal improvement with a maximum of 300 minutes); Visual Analogue Scale (10 cm Pain VAS).

Results

The results showed that the mean score on the clinical tests for OA patients was: Pain – 6.58 (±1.66), Stiffness – 0.28 (±0.12), Grip Strength right hand 70.71 (±16.28), Grip Strength left hand – 63.81 (±14.81). The mean score on the clinical tests for RA patients was: Pain – 6.11 (±1.57), Morning Stiffness – 1.63 (±0.69), Grip Strength right hand 67.92 (±16.31), Grip Strength left hand – 53.34 (±17.23). The results showed that the mean score on the AIMS-2 for OA patients was: physical – 3.53, affect – 4.42, symptom – 6.74, social interaction – 3.33, role – 4.20. Mean score on the AIMS-2 for RA patients was: physical – 3.73, affect – 4.48, symptom – 7.09, social interaction – 3.45, role – 3.63 (*Fig. 1* and *Tab. 1*). The quality of life depended on the sex of these patients (*Fig. 2*). Women of OA and RA patients scored significantly higher in the physical state and symptom then men ($p<0.05$). Also, younger patients and suffering shorter than 10 years demonstrated higher evaluation of quality of life in the physical state ($p<0.05$) and ($p<0.001$) (*Tab. 2*), (*Tab. 3*).

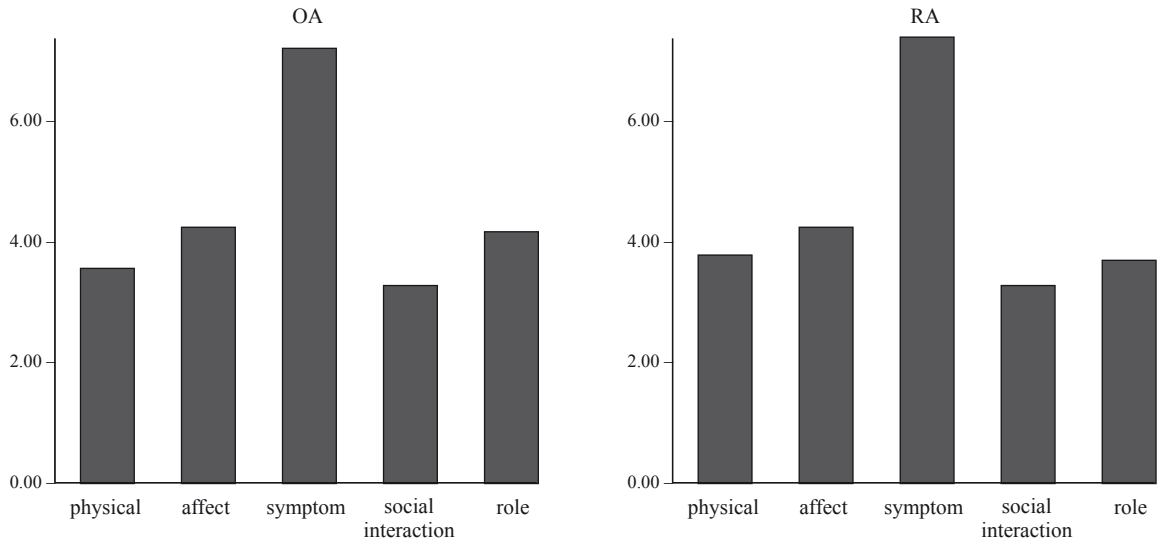
The next step in the research consisted in the evaluation of the influence of the duration of the disease (*Tab. 4*). The applied indicator of correlation of Pearson's to analyze the relation between duration of the diseases and AIMS-2 (mobility level, walking and bending, hand and finger function, arm function, social activity, support of family and friends), health perception showed correlation (0.195-0.323). The assessment in most of the subscales of the AIMS-2 correlated significantly with Pain, Morning Stiffness and Grip Strength for OA and RA patients (*Tab. 5*).

Discussion

In this study we have examined the impact of OA and RA in the functioning and the quality of life, as assessed by the AIMS-2 instruments in a sample of patients treated in Outpatient Clinic Rehabilitation in Poznań, Poland. Our results suggest the good assessment of the functioning and quality of life among OA and RA patients is influenced by the support of family and friends. Negative assessment of the quality of life among OA and RA patients results from the limitations in carrying out activities of daily living. It is related to joints pain and morning stiffness (the average value for OA patients – 5.17, for RA patients – 6.47).

The age of patients and duration OA and RA influences the quality of life of people. Younger patients suffering shorter than 10 years with OA showed higher evaluation of quality of life in the area of walking and bending and mobility. Younger patients and suffering shorter than 10 years with RA demonstrated higher evaluation of quality of life in the area of walking and bending, mobility, household task and social activity. The conclusion supports the results of our earlier research among patients of RA [10]. The research by Sherrer and co-authors [11] on demographic variables (gender and age) and duration of the disease describe the influence of the older age of patients with RA on physical limitations and lower efficiency in dealing with household tasks, or carrying out tasks related to self-care.

Figure 1. **The functioning and the quality of life patients with OA and RA (AIMS-2)**



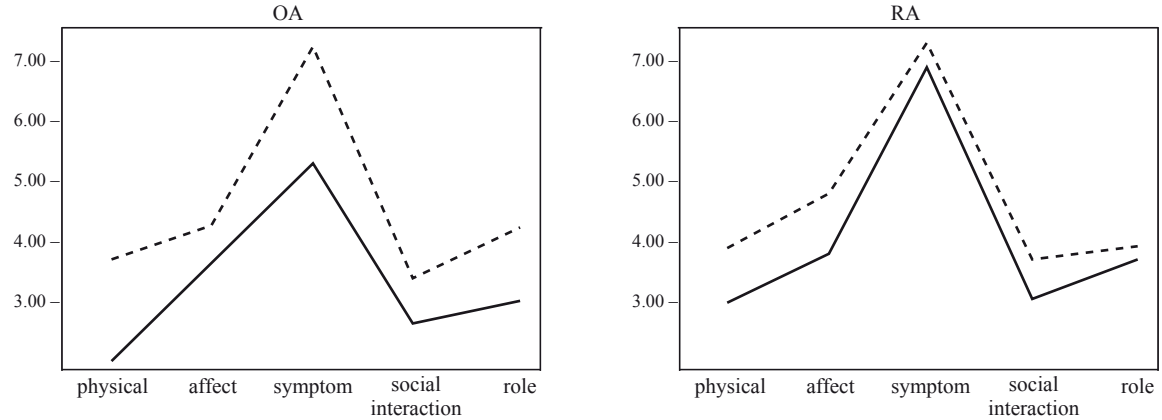
AIMS-2 scores range from 0-10, (higher scores – poorer quality of life)

Table 1. **AIMS-2 scale scores in osteoarthitis and rheumatoid arthritis subject groups**

	Osteoarthritis (n=98)		**Rheumatoid arthritis** (n=123)		
	Mean	SD	Mean	SD	p
Mobility	3.57	2.15	3.78	2.32	0.48
Walking and bending	5.23	2.41	5.35	2.45	0.72
Hand and finger function	3.88	2.52	4.27	2.36	0.23
Arm function	3.21	2.46	3.21	2.32	0.99
Self-care	2.73	2.40	2.85	2.50	0.72
Household task	2.60	2.48	2.90	2.55	0.38
Social activity	5.16	1.36	5.33	1.49	0.37
Support from family	1.96	2.08	1.90	2.33	0.83
Arthritis pain	6.74	2.07	7.09	2.07	0.21
Work	4.20	2.98	3.63	2.28	0.32
Level of tension	5.36	1.52	5.27	1.91	0.71
Mood	3.47	1.70	3.69	1.62	0.35
Satisfaction	4.71	1.84	5.01	1.79	0.23
Health perception	7.77	2.34	8.38	0.15	0.05*
Arthritis impact	6.48	2.21	6.54	2.23	0.83

AIMS-2 scores range from 0-10, (higher scores – poorer quality of life) $p \leq 0.05$

Figure 2. **The quality of life of patients with OA and RA for women and men (AIMS-2)**



AIMS-2 scores range from 0-10, (higher scores – poorer quality of life)

Table 2. **AIMS-2 scale scores in osteoarthitis and rheumatoid arthritis and age**

	Osteoarthitis (age ≤55; n=38) (age >56; n=60)			Rheumatoid arthritis (age ≤55; n=58) (age >56; n=66)		
AIMS-2	Mean	SD	p	Mean	SD	p
Physical	3.19	2.09	0.05*	2.99	2.07	0.00**
	3.62	2.43	3.81	2.38		
Affect	4.63	1.43	0.21	5.19	1.71	0.06
	4.44	1.53	5.36	1.61		
Symptom (Arthritis pain)	6.49	2.31	0.55	7.01	2.19	0.19
	6.35	2.35	6.94	1.88		
Role	4.08	2.39	0.48	3.73	1.76	0.43
	3.78	2.49	4.84	1.72		

p≤0.05; p≤0.001

Table 3. **AIMS 2 scale scores in osteoarthitis and rheumatoid arthritis and duration of the diseases**

	Osteoarthritis (≤10 years; n=40) (>10years; n=58)			Rheumatoid arthritis (≤10 years; n=72) (>10years; n=42)		
AIMS-2	Mean	SD	p	Mean	SD	p
Physical	3.37	1.72	0.02*	3.18	2.09	0.05*
	3.82	2.01		3.62	2.43	
Affect	4.61	1.45	0.34	4.81	1.74	0.14
	4.46	1.51		5.09	1.93	
Symptom (Arthritis pain)	6.40	2.34	0.87	7.03	2.09	0.34
	6.44	2.34		6.54	2.22	
Role	3.47	1.71	0.34	4.27	2.36	0.23
	3.68	1.62		3.87	2.51	

p≤ 0.05

Meenan and co-authors [12,13] did not show any influence of the sex on the assessment of functioning and quality of life within the particular domain in AIMS-2 scale. Chacon and co-authors [14] found correlation between total AIMS scores and age among patients of keen osteoarthritis. Their results do not support a role for depression as assessed by correlating age with the AIMS component that evaluates the affective status of patients. Their study indicated that the perception of quality of life of patients with keen OA is mainly affected by pain, suggesting the need for vigorous and early therapeutic strategies aimed at effectively treating this symptom. Research by Łaskowiecka co-authors [15] showed that OA patients had decreased work ability and decreased quality of life. A worse work ability and a worse quality of life were related with multijoint localization of OA and co-existence of other diseases. A negative correlation was found between general score of scale. Kawasaki co-authors [16] noted that quality of life after treatments for osteoarthritis of the hip changes depending on the treatment method and the number of years since treatment. They found that the quality of life of patients after a rotational acetabular osteotomy was significantly poorer than that of patients with primary total hip arthroplasty. This result may mean that the quality of life of the first group was significantly worse than that of second group.

Table 4. **The correlation of AIMS-2 and duration of the diseases (Pearson's)**

AIMS 2	OA	RA
mobility	0.169	0.195*
walking and bending	0.203*	0.059
hand and finger function	0.183	0.077
arm function	0.048	0.189*
self-care	0.158	0.117
household task	0.194	0.011
social activity	0.204*	0.169
support from family	-0.001	0.313**
arthritis pain	0.052	0.034
work	0.178	-0.198
level of tension	0.193	-0.021
mood	0.128	0.008
satisfaction	0.176	0.163
health perception	0.206*	0.232**
arthritis impact	0.168	0.050

* p≤ 0.05; ** p≤0.01

Table 5. **The correlation of AIMS-2 and clinical symptoms (Pearson's)**

	AIMS-2	Pain-VAS	Morning Stiffness	Grip Strength (right hand)	Grip Strength (left hand)
OA	mobility	-0.094	0.084	-0.005	0.001
	walking and bending	-0.121	0.089	0.151	0.141
	hand and finger function	0.021	0.096	-0.119	-0.167
	arm function	-0.045	-0.099	-0.081	-0.071
	self-care	-0.149	-0.055	0.025	0.072
	household task	-0.096	0.053	-0.147	-0.078
	social activity	-0.128	-0.056	-0.136	-0.120
	support from family	0.099	0.046	0.030	0.021
	arthritis pain	-0.116	-0.012	0.031	0.009
	work	-0.149	-0.404*	-0.033	-0.023
	level of tension	-0.089	-0.038	-0.027	-0.103
	mood	-0.149	-0.080	-0.019	-0.106
	satisfaction	-0.061	0.011	-0.137	-0.136
	health perception	0.003	0.081	0.052	0.038
	arthritis impact	-0.125	0.065	-0.062	-0.113
RA	mobility	0.070	-0.192*	-0.001	-0.022
	walking and bending	0.147	-0.063	-0.004	0.008
	hand and finger function	0.091	-0.138	-0.068	-0.026
	arm function	0.060	-0.149	-0.106	-0.061
	self-care	0.058	-0.065	0.077	0.031
	household task	0.080	-0.178*	0.022	0.115
	social activity	0.109	-0.051	0.063	0.065
	support from family	0.109	0.026	-0.126	-0.114
	arthritis pain	0.139	-0.051	0.101	0.080
	work	0.025	-0.200	0.144	0.103
	level of tension	0.070	-0.043	0.038	0.021
	mood	0.135	-0.025	0.120	0.068
	satisfaction	0.147	-0.061	-0.006	-0.027
	health perception	0.071	-0.020	-0.133	-0.142
	arthritis impact	0.051	-0.103	-0.007	0.007

* $p \leq 0.05$

Further research into the quality of life of OA and RA patients can lead to improvement in the quality of care. Treatment of pain and other symptoms is a major for community rehabilitation.

References

1. Zimmermann-Górska I. Rheumatology. Warszawa: PZWL; 2004, p. 143-63, 229-43.
2. Mackiewicz S, Zimmermann-Górska I. Rheumatology. Warszawa: PZWL; 1995, p. 82-101, 215-24.
3. Spector TD. The epidemiology of rheumatic disease. Rheumatoid arthritis. Curr Opin Rheum, 1992; 266-71.
4. Mahon JL, Bourne RB, Rorabeck CH, Feeny DH, Stitt L, Webster-Bogaert S. Health-related quality of life and mobility of patients awaiting elective total hip arthroplasty: a prospective study. CMAJ, 2002; 167: 1115-21.
5. Marshall NJ, Wilson G, Lapworth K, Kay LJ. Patients' perception of treatment with anti-TNF therapy for rheumatoid arthritis: a qualitative study. Rheumatology, 2004; 43: 1034-8.
6. Browne JP, O'Boyle CA, McGee HM. Individual quality of life in the healthy elderly. Qual Life Res, 1994; 3: 235-44.
7. Bowling A. Measuring disease (review of disease – specific quality of life measurement scales). Philadelphia: Open University Press; 1995: p. 211-32.
8. Bączyk G. Evaluation quality of life patients with rheumatoid arthritis. Polish Nurs, 1999; 9-10: 7-22.
9. Meenan RF, Mason JH, Anderson JJ, Guccione AA, Kazis LE. AIMS 2. The content and properties of a revised and expanded Arthritis Impact Measurement Scales Health Status Questionnaire. Arthritis Rheum, 1992; 35: 1-10.
10. Bączyk G. The evaluation of the functioning and of the quality of life of patients with Rheumatoid Arthritis. Ann Acad Med Bialost, 2005; 50: 170-3.
11. Sherrer US, Block DA, Mitchell DM, Young DY, Fries JF. The development of disability in rheumatoid arthritis. Arthritis Rheum,1996; 29: 494-500.
12. Meenan RF, Kazis LE, Anderson J. The stability of health status in rheumatoid arthritis. A five-year study of patients with established disease. Am J Public Health, 1987; 78: 1484-7.
13. Meenan RF, Gertman P, Mason JH. The Arthritis Impact Measurement Scales. Further investigations of a health status measure. Arthritis Rheum, 1982; 25: 1048-53
14. Chacon JG, Gonzalez NE, Veliz A, et al. Effect of knee osteoarthritis on the perception of quality of life in Venezuelan patients. Arthritis Rheum, 2004; 51: 377-82.
15. Łastowiecka E, Bugajska J, Najmiec A, Rell-BakalarskaM, Bownik I, Jędrka-Góral A. Occupational work and quality of life in osteoarthitis patients. Rheumatol Int, 2006; 27: 131-9.
16. Kawasaki M, Hasegawa Y, Sakano S, Torii Y, Warashina H. Quality of life after several treatments for osteoarthritis of the hip. J Orthop Sci, 2003; 8: 32-5.