

The Effect of Social Role Participation on Quality of Life in Rheumatoid Arthritis

Romatoid Artritli Hastalarda Sosyal Rol Katılımının Yaşam Kalitesine Etkisi

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ABSTRACT Objective: The aim of this study was to explore the impact of social role participation on quality of life in rheumatoid arthritis (RA) patients. **Material and Methods:** This study was conducted on 100 RA patients who applied to our outpatient clinic and 95 healthy controls. The outcome measures included Visual Analogue Scale (VAS) (rest and activity pain), Disease Activity Score (DAS-28) Scale, Rheumatoid Arthritis Quality of Life Questionnaire (RAQoL), and Social Role Participation Questionnaire (SRPQ) (role limitations, salience, satisfaction). **Results:** There were statistically significant differences in SRPQ role salience, SRPQ role limitation, and SRPQ role satisfaction scores between the RA patients and the healthy individuals ($p<0.001$). The RAQoL scores were positively correlated with SRPQ limitation scores and negatively correlated with SRPQ role satisfaction and SRPQ role salience scores (all, $p<0.001$). Negative correlations were found between SRPQ scores (salience, satisfaction) and DAS-28 and VAS (rest and activity pain) scores (all, $p<0.05$). Positive correlations were found between SRPQ role limitations scores and DAS-28 and VAS (rest and activity pain) scores (all, $p<0.05$). There was no correlation between SRPQ domains scores and age or disease duration in RA patients (all, $p>0.05$). RAQoL was positively correlated with VAS (rest and activity pain) and DAS-28 scores (all, $p<0.001$). **Conclusion:** This study showed that there is an association between social role participation and quality of life in RA patients. So, it may be useful to take into account the evaluation of social role participation in the management of RA patients.

Keywords: Social role participation; quality of life; rheumatoid arthritis; pain; disease activity

ÖZET Amaç: Çalışmamızda, romatoid artrit (RA) hastalarında sosyal rol katılımının yaşam kalitesi üzerindeki etkisini araştırmayı amaçladık. **Gereç ve Yöntemler:** Bu çalışma polikliniğimize başvuran 100 RA hastası ve 95 sağlıklı kontrol üzerinde gerçekleştirildi. Sonuç ölçütlerinde Vizüel Analog Skalası (VAS) (istirahat ve aktivite ağrısı), Hastalık Aktivite Skoru [Disease Activity Score-28 (DAS-28)] Ölçeği, Romatoid Artrit Yaşam Kalitesi Ölçeği [Rheumatoid Arthritis Quality of Life Questionnaire (RAQoL)] ve Sosyal Rol Katılım Anketi [Social Role Participation Questionnaire (SRPQ)] (rol sınırlamaları, belirginlik, memnuniyet) kullanıldı. **Bulgular:** RA hastaları ve sağlıklı bireyler arasında SRPQ rol belirginliği, SRPQ rol sınırlaması ve SRPQ rol memnuniyetinde istatistiksel olarak anlamlı farklılıklar vardı ($p<0,001$). RAQoL ile SRPQ rol sınırlama arasında pozitif korelasyon ve RAQoL ile SRPQ rol memnuniyeti ve SRPQ rol belirginliği arasında ise negatif korelasyon bulundu (hepsi, $p<0,001$). SRPQ (belirginlik, memnuniyet) ile DAS-28 ve VAS (istirahat ve aktivite ağrısı) arasında negatif korelasyon tespit edildi (hepsi, $p<0,05$). SRPQ rol sınırlılıkları ile DAS-28 ve VAS (istirahat ve aktivite ağrısı) arasında pozitif korelasyon tespit edildi (hepsi, $p<0,05$). RAQoL ile VAS (istirahat ve aktivite ağrısı) ve DAS-28 arasında pozitif korelasyon bulundu (hepsi, $p<0,001$). **Sonuç:** Bu çalışma, RA hastalarında sosyal rol katılımı ile yaşam kalitesi arasında bir ilişki olduğunu göstermiştir. Bu nedenle RA hastalarının tedavi yönetiminde, sosyal rol katılımının değerlendirilmesini dikkate almak faydalı olabilir.

Anahtar Kelimeler: Sosyal rol katılımı; yaşam kalitesi; romatoid artrit; ağrı; hastalık aktivitesi

Rheumatoid arthritis (RA) is a chronic disease that affects the joints, often leading to functional disability and decreased ability to perform regular daily activities.^{1,2} Many physical difficulties are experienced in the

performance of daily living activities associated with work and entertainment.^{3,4} Functional disability affects the performance of daily living activities and restricts the patient's ability to move.⁵ As a consequence of re-

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duced functional ability, the movement of the patient with RA is reduced, which often results in qualitative and quantitative changes in social relationships.^{5,6}

Roles involve patterns of expected, taught, and encouraged behavior in sociocultural contexts. Social role participation includes being involved in close relationships (e.g. parenting), social and community relations, being a student or employee, and participation in leisure pursuits.⁷ Social role participation is a very important factor to improve health and well-being of a person.⁸ Social role participation and employment may be affected by chronic diseases in a negative way.⁹ In chronic diseases, the social role participation of patients are affected by disease activity fluctuation and decreased ability to perform regular daily activities.^{10,11} Quality of life in RA patients is affected by the activity of the disease, diminished physical function and severity of pain.^{12,13} The quality of life of individuals with physical disablement has a connection with social role participation.^{13,14} Pain and disease activity have been indicated to contribute to physical impairments in RA.¹⁵ In addition, physical difficulties in RA have a negative effect on the continuation of hobby and important daily living activities. The patients encounter restrictions on participation in social activities due to physical difficulties associated with disease activity. Therefore, social activities may change according to the patient's present condition. Social exclusion may occur over time in patients and this social exclusion may vary depending on the tendency of the symptoms of the disease. RA patients may usually misidentified as lazy by people around them. In fact, this situation is due to the low social role participation in RA patients.¹⁶ In our study, we focused on the effect of social role participation on quality of life in RA. Social role participation is increasingly recognized by healthcare professionals. Lately, in clinical assessments and medical interventions, the inclusion of quality of life concept incorporation interest has increased. The aim of this study was to investigate the impact of social role participation on quality of life in RA patients.

MATERIAL AND METHODS

The study was carried out cross-sectional. Recep Tayyip Erdoğan University Ethics Committee approved the study and before participating the study,

the patients were informed about the study protocol and their consent was taken (16.12.2016, 2016/86). This study was conducted in accordance with the principles of the Declaration of Helsinki.

PARTICIPANTS

The study was carried out among 115 RA patients (age from 20 to 70 years), admitted to our outpatient clinic who fully met the American College of Rheumatology 1987 revised criteria.¹⁷ Ninety-five other patients' relatives without inflammatory musculoskeletal disease were recruited as controls. Patients and healthy volunteers with a history of comorbid disease (e.g., hypertension, diabetes, hyperlipidemia) that did not restrict or prevent daily living activities were included in the study. All participants who had a history of other musculoskeletal disease (including fibromyalgia, musculoskeletal injury in the six month, chronic low back pain, requirement of arthroplasty for knee or hip osteoarthritis), neurological diseases restricting daily living activities (e.g., multiple sclerosis, stroke, Parkinson's disease) were excluded from the study. Also, fifteen patients were excluded from the study because they did not meet the inclusion criteria. The physical examinations of all participants were performed by the same physician. The demographic (age, gender, marriage status, living alone, working status, and education) and clinical characteristics of participants were recorded. Participants were asked to complete interview based questionnaires regarding pain, quality of life, and social role participation.

MEASURES

Visual Analogue Scale

Visual Analogue Scale (VAS) was used to assess the level of pain during rest and movement. Pain was assessed using a 0 to 10 visual analogue pain scale, with 0 meaning "no pain" and 10 meaning "excruciating pain."¹⁸

Social Role Participation

Social Role Participation Questionnaire (SRPQ) consists of 3 social role domains (role salience, role satisfaction, role limitations). Information was collected through a self-administered questionnaire. Eleven

role domains and one global question were gauged: 1) work; 2) education; 3) intimate relationships; 4) children/step-children/grandchildren; 5) other family; 6) community involvement; 7) socializing; 8) casual contact with others; 9) travel; 10) physical activity; and 11) hobbies. The participants rated role salience from 1 (not at all important) to 5 (extremely important). In role satisfaction, all participants were asked to evaluate to what rate they were satisfied with their talent to attend in each of the feasible roles. The responses of the participants were rated from 1 (not at all satisfied) to 5 (extremely satisfied). In role limitations, participants were questioned how difficult it was to attend each role domain, taking into account their current health status. The participants rated role limitation from 1 (no difficulty) to 4 (not able to do). When a respondent did not take part in a role, they were instructed to choose “not applicable” and did not provide an importance or satisfaction rating for that item. By supplying at least 9 of the 12 domains answered, the average score for each subscale was calculated.¹⁹

Disease Activity

The disease activity of RA patients was calculated by disease activity score (DAS-28) index (≤ 3.2 score; mild disease activity, 3.2-5.1 score; moderate disease activity, >5.1 score; high disease activity). It consists of four measures: Erythrocyte sedimentation rate (ESR), 28 tender (TJC28) and swollen joint (SJC28) counts, and patients' general health (GH) measured on a 100 mm VAS. It was calculated according to the following formula $DAS-28 = 0.56 \times \sqrt{(TJC28)} + 0.28 \times \sqrt{(SJC28)} + 0.70 \times \ln(ESR) + 0.014 \times GH$.²⁰

Quality of Life

Rheumatoid Arthritis Quality of Life Questionnaire (RAQoL) is a disease-specific scale developed for patients with RA and evaluates the quality of life multidimensionally. It consists of 30 questions prepared to answer yes/no. Scores range from 0 to 30, with high scores indicating low life quality. In this study, the Turkish version of RAQoL was used.²¹

STATISTICAL ANALYSIS

All statistical analyses were performed by the SPSS version 21.0 (SPSS, Inc., Chicago, IL, USA) program. The continuous variables were represented as

standard deviations \pm means. The normality of the distribution for all data was determined by the Kolmogorov-Smirnov test. Independent Student's t-test or Mann-Whitney test were used to compare the variables between the patients and controls. In order to evaluate the relationship between the outcome measures in patients with RA, Spearman or Pearson correlation analyses were used. P values less than 0.05 were assumed as statistically significant level.

RESULTS

In Table 1, the clinical manifestations and characteristics of the study population are shown. The mean age was 53.67 ± 8.19 years in RA patients and 52.52 ± 8.47 years in healthy individuals. The mean disease duration was 10.08 ± 4.85 years in RA patients. There were 13 patients with mild disease activity, 61 patients with moderate disease activity, and 26 patients with high disease activity in this study. There were no statistically significant differences in demographic features between the groups (all, $p > 0.05$). SRPQ role salience and SRPQ role satisfaction scores were lower in RA patients than in healthy individuals and SRPQ role limitation scores were higher in RA patients than in healthy individuals (all, $p < 0.001$). There was no difference in SRPQ (role salience, role satisfaction, role limitations) scores between male and female patients ($p = 0.35$, $p = 0.39$, $p = 0.24$, respectively). There was no correlation between SRPQ domains scores and age or disease duration in RA patients (all, $p > 0.05$). VAS rest and activity scores were positively correlated with SRPQ role limitations scores and negatively correlated with SRPQ role satisfaction and SRPQ salience scores (all, $p < 0.05$). RAQoL scores were positively correlated with SRPQ role limitation scores and negatively correlated with SRPQ role satisfaction and SRPQ role salience scores (all, $p < 0.001$). RAQoL scores were positively correlated with VAS (rest and activity) and DAS-28 scores ($r = 0.75$, $p = 0.000$; $r = 0.80$, $p = 0.000$, respectively). Significant correlations were determined between DAS-28 scores and RAQoL and SRPQ scores (role limitations, salience, satisfaction) (all, $p < 0.05$). While the disease activity increased, RAQoL and SRPQ role limitation scores increased, but SRPQ role satisfaction and SRPQ role salience scores decreased. Corre-

TABLE 1: Demographic and clinical characteristics of study groups.

Variables	Patients (n=100)	Control (n=95)	p value
	Mean±SD	Mean±SD	
Age (years)	56.79±0.22	52.52±8.47	0.33
Gender			
Female	83 (83%)	79 (83.15%)	0.97
Male	17 (17%)	16 (16.84%)	
BMI, kg/m ²	27.81±2.57	26.83±1.85	0.09
Marriage status	89 (89%)	82 (86.31%)	0.54
Living alone	11 (11%)	12 (12.63%)	0.82
Working	41 (41%)	40 (42.10%)	0.83
University education	12 (12%)	13 (13.68%)	0.35
Disease duration (years)	10.08±4.85	-	
VAS rest pain, cm (1-10)	2.44±1.27	-	
VAS activity pain, cm (1-10)	4.75±1.85	-	
DAS-28	4.49±1.07	-	
RAQoL	14.33±3.53	-	
Social role participation			
Role salience (1-5)	2.99±0.35	3.72±0.30	0.000
Role limitations (0-3)	2.34±0.69	1.74±0.26	0.000
Role satisfaction (1-5)	2.80±0.34	3.38±0.37	0.000

SD: Standard deviation; BMI: Body mass index; VAS: Visual Analog Scale; DAS-28: Disease Activity Score; RAQoL: Rheumatoid Arthritis Quality of Life Questionnaire.

lations between SRPQ domains and disease related parameters in RA patients are shown in [Table 2](#).

DISCUSSION

The main aim of this study was to show the impact of social role participation on RA patients' life quality. RA patients' health outcomes may be affected by social factors.¹¹ Previous studies reported that psychological factors which are independent of pain and disease activity play a role in disease burden in RA patients.^{22,23} However, Ormseth et al. suggested that emotional disturbance and disability together are effective on burden of disease by affecting the role function.²⁴ Also, Gignac et al. demonstrated that while the pain increases, satisfaction level decreases in roles which required performance and time. There was no relationship between activity limitation and role satisfaction. They stated that this may be due to the fact that encompass tasks and activities may have socio-cultural characteristics different from existing measures of activity limitations.^{19,25} Perception of social role participation may positively affect treatment of psychological and physical disorders

in RA patients. It may be useful to take into consideration of the social role participation in the management of the RA patients to achieve the good treatment target.

In the literature, different hypotheses related to social role participation and role playing variables are expressed. Mikula et al. stated that the decrease in social activity can adversely affect the quality of life in people with multiple sclerosis.²⁶ It has been found that patients with osteoarthritis, a chronic disease, are less satisfied with social activities because they spend more time and performance with their joint problems. Furthermore, it is also stated that different factors related to the role salience and role satisfaction may also be effective. Pain, disease activity, fatigue and psychological problems may also play a role in such activities. However, role theory suggests that the disease variables are less related than the life-stage, education and income level of the individual in role salience.²⁷⁻³⁰ It has been shown that there is no differences in role satisfaction at different age. Although there may be changes in role salience in life-course, role satisfaction remains relatively stable.³⁰ Our study showed significant dif-

TABLE 2: Correlations between the the disease related variables and SRPQ domains in rheumatoid arthritis patients.

	SRPQ Role satisfaction	SRPQ Role salience	SRPQ Role limitations
Age (years)			
r value	-0.01	-0.08	0.13
p value	0.91	0.41	0.18
Disease duration (years)			
r value	-0.06	-0.18	-0.00
p value	0.50	0.06	0.95
VAS rest pain, cm (1-10)			
r value	-0.36	-0.32	0.65
p value	0.000	0.001	0.000
VAS activity pain, cm (1-10)			
r value	-0.37	-0.27	0.64
p value	0.000	0.006	0.000
DAS-28			
r value	-0.44	-0.34	0.74
p value	0.000	0.000	0.000
RAQoL			
r value	-0.51	-0.44	0.59
p value	0.000	0.000	0.000

SRPQ: Social Role Participation; VAS: Visual Analog Scale; DAS-28: Disease Activity Score; RAQoL: Rheumatoid Arthritis Quality of Life Questionnaire.

ferences in SRPQ (role salience, role limitation, role satisfaction) scores between RA patients and healthy controls. We found that pain and disease activity have a relation with social role participation. In RA patients with increased disease activity and pain, there was a decrease in social role participation satisfaction and role salience and an increase in role limitations. These results showed the impact of disease activity on the perceived importance of social role participation. It may be important to reduce pain and disease activity to improve social role participation. Benka et al. reported that role limitations increased due to increased pain and functional disability in patients with early and established RA.¹² Similar results were obtained in other studies in which social role participation was assessed by using different assessment methods.³¹ Pain and disease activity can contribute to physical impairments in RA patients.³² Restriction of physical activity has significant effect on social role participation. Social role participation was negatively affected as physical activity decreased. Avoidance of movement due to pain increases physical obstacles because of the decrease of muscle endurance and power. If patients are prevented from avoiding physical activity and are supported by so-

cial activities, this will have a positive effect on functional disability and pain.³²⁻³⁵ Cruz-Castillo et al. found that pain affects social life negatively in RA patients, and there is a significant relationship between disease activity and life quality.³⁶ We have also similarly reported that quality of life was adversely affected by disease in RA patients. If salience and satisfaction domains of the social role participation are decreased and the limitation domain is increased, the quality of RA patients is disrupted. The healthy volunteers were also included in the present study as control group. There was no healthy control group in the above studies.^{12,13,27} This study points to social role participation as a potential factor that contribute to quality of life. Quality of life is closely in relation with social role participation. The significant association between the social role participation and the disease related variables revealed out the impact and importance of social participation in RA patients. Therefore, it may be beneficial to consider the perception of participation in social roles in interventions for patients with RA. We think that social role participation programs that provide interaction with the social environment may be useful to encourage social role participation activities in RA

patients. This social activities may provide an important source of social role support that can improve the overall quality of life of RA patients. Additional researches may indicate social role participation as an important factor in quality of life.

Our study has some limitations. We did not use the health assessment questionnaire, which seems to be one of the most important outcome in RA. Also, we did not evaluate the emotional status of RA patients. Even though the ratio of women-to-men in RA is usually 2,5:1, in our sample this ratio was 4.88:1. This result may compose particular restrictions for the generalization of the findings. In this study, the high age average of RA patients is a negative factor in activities (time spent in roles and performing roles) of social role participation.

CONCLUSION

The results of the present study demonstrated that participation in social roles decreased in RA patients and there was a strong correlation between the social

role participation and life quality. Isolation and avoiding social roles are related to lower quality of life in RA patients. So it may be useful to take into account the evaluation of social role participation in the management of RA patients.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Gül Devrimsel; **Design:** Gül Devrimsel; **Data Collection and/or Processing:** Gül Devrimsel; **Analysis and/or Interpretation:** Gül Devrimsel, Münevver Serdaroğlu Beyazal.

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