

# The Effect of Disease Activity Index and Level of Pain on the Disease Coping Attitudes in Rheumatoid Arthritis Patients

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Date of submission  
30.03.2018

Date of acceptance  
08.10.2018

## ABSTRACT

**Aim:** The aim of this study was to search the effect of disease activity index and level of pain on the disease coping attitudes in rheumatoid arthritis patients.

**Methods:** This study has been carried out on 190 rheumatoid arthritis patients. A questionnaire including the demographic and socio-cultural properties of the patients and The COPE Inventory, Disease Activity Score and Visual Analogue Scale have been used as data collection tools. Student's t test, analysis of variance and calculation of Pearson correlation coefficient have been used in statistical analysis.

**Results:** It has been found that the patients used emotion oriented coping attitudes most frequently. Of the emotion oriented coping methods, the first was religious coping and the second was positive reinterpretation and growth method. The humor, restraint, use of emotional social support, substance use and acceptance mean points were statistically significantly high in patients using medicine. There was positive correlation between age and behaviorally disengagement and restraint, rheumatoid arthritis disease duration/years and use of emotional social support, Disease Activity Score points and religious coping COPE Inventory subscale points. A positive significant correlation was found between the number of tender joints and focus on and venting on emotions, using instrumental social support and use of emotional social support COPE Inventory subscale points.

**Conclusions:** Our study demonstrated that the most frequent coping method used by the patients was emotion oriented coping attitudes. There was positive correlation between the Disease Activity Score and religious coping and suppression of competing activities, Visual Analogue Scale and religious coping points.

**Keywords:** arthritis, rheumatoid, pain assessment, coping behavior

## Romatoid Artritli Hastalarda Hastalık Aktivite İndeksi ve Ağrı Düzeyinin Hastalıkla Başa Çıkma Tutumları Üzerine Etkisi

### ÖZ

**Amaç:** Bu çalışmada romatoid artritli hastalarda hastalık aktivite indeksi ve ağrı düzeyinin, hastalıkla başa çıkma tutumları üzerine etkisinin araştırılması amaçlanmıştır.

**Yöntem:** Bu çalışma 190 romatoid artrit hastası üzerinde yürütülmüştür. Veri toplama aracı olarak, hastaların demografik-sosyokültürel özelliklerini ve hastalığa ilişkin bilgileri içeren anket formu ile Başa Çıkma Tutumlarını Değerlendirme Ölçeği, Hastalık Aktivite Skoru, Görsel Analog Skala kullanılmıştır. İstatistiksel analizinde, Student t testi, varyans analizi kullanılmıştır. Pearson korelasyon katsayısı hesaplanmıştır.

**Bulgular:** Hastaların en sık duygusal odaklı başa çıkma tutumlarını kullandıkları tespit edilmiştir. Duygusal başa çıkma yöntemlerinden ilk sırada dini olarak başa çıkma, ikinci sırada pozitif yeniden yorumlama ve gelişme yöntemi yer almıştır. İlaç kullanan hastaların şakaya vurma, geri durma, duygusal sosyal destek kullanımı, madde kullanımı ve kabullenme puan ortalamaları anlamlı düzeyde yüksek bulunmuştur. Yaş ile davranışsal olarak baş verme ve geri durma, romatoid artrit hastalık süresi/yıl ile duygusal sosyal destek kullanımı, Hastalık Aktivite Skoru puanları ile dini olarak başa çıkma ve diğer meşguliyetleri bastırma, Görsel Analog Skala puanları ile dini olarak başa çıkma Başa Çıkma Tutumlarını Değerlendirme Ölçeği alt boyut puanları arasında pozitif yönde, hassas eklem sayısı ile soruna odaklanma ve duyguları açığa vurma, yararlı sosyal destek kullanımı ve duygusal sosyal destek kullanımı Başa Çıkma Tutumlarını Değerlendirme Ölçeği alt boyut puanları arasında negatif yönde anlamlı ilişki bulunmuştur.

**Sonuç:** Çalışmamızda, hastaların en sık duygusal odaklı başa çıkma tutumlarını kullandıkları, Hastalık Aktivite Skoru ile dini olarak başa çıkma ve diğer meşguliyetleri bastırma, Görsel Analog Skala ile dini olarak başa çıkma puanları arasında pozitif yönde anlamlı ilişki tespit edilmiştir.

**Anahtar kelimeler:** artrit, romatoid, ağrı değerlendirme, başa çıkma davranışı

**How to cite / Atf için:** Mıstık S, Ünalın D, Kayış Topaloğlu H, Erol K, Çalış M. The effect of disease activity index and level of pain on the disease coping attitudes in rheumatoid arthritis patients. *Euras J Fam Med* 2018;7(3):78-84.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** No financial disclosure was declared by the authors.

## Introduction

Rheumatoid Arthritis (RA) is a chronic disease causing many serious complications and the burden of disease is many physical and psychological problems which need efforts for treatment. Epidemiologic studies show us the prevalence of rheumatoid arthritis as 0.5 to 1% and the annual incidence has been reported as 12-1200 per 100,000 population. The RA patients are having increased risk of gastrointestinal, respiratory, cardiovascular, infectious and hematologic diseases (1).

RA patients having many physical problems are also experiencing psychological problems in the natural course of the disease. The diagnosis of psychiatric disorders may be missed without a detailed psychiatric history. The psychiatric disorders in RA patients were reported as depressive disorders (14.5%) and anxiety disorders (13.0%) where major depressive disorder and general anxiety disorders have been the commonest. Perceived poor social support has been associated with current anxiety disorder (2).

The RA patients need some coping methods to overcome the psychological problems of disease. The coping scale (COPE) is a scale where the use of problem oriented coping, emotion oriented coping and dysfunctional coping methods are defined (3,4). Disease Activity Score (DAS 28) is a disease activity index where the activity of RA is defined as remission and low, moderate and high. Visual Analogue Scale (VAS) is used to show the level of pain in RA patients.

The aim of this study was to search the effect of disease activity index and level of pain on the disease coping attitudes in RA patients by using COPE, DAS 28 and VAS.

## Methods

This cross sectional study has been carried out on 190 of the 269 RA patients (%70.6) who had admitted to the Erciyes University Health Application and Research Center Physical Medicine and Rehabilitation polyclinics between October 2016 and March 2017. A questionnaire including the demographic and socio-cultural properties of the patients and COPE, DAS 28 and VAS have been used as data collection tools.

The questionnaires have been done face to face by the researchers after the physical examination. This study was approved by the Ethics Committee of Erciyes University, Faculty of Medicine and informed consent was obtained from the participants.

### Data Collection Tools

#### 1. Patient Information Form

This form included socio-demographic properties such as the age, gender, marital status, education level, occupation, income, house type, smoking status, alcohol consumption. In addition to these, questions about the process of the disease like the presence of chronic disease other than RA, duration of disease, the medicine used for rheumatoid arthritis were asked.

#### 2. Coping Scale

This is a self-report scale which was developed to evaluate people's response to stress in different ways. Coping Scale's validity and reliability into Turkish was done by Agargun et al. in 1989 (4). The scale, which includes sixty questions, has fifteen subscales each having four items. The degrees were as; 1. Never do such a thing, 4. Mostly do like this. Four to sixteen points could be taken from each subscale. Higher points show that the coping attitude is used more frequently. The COPE Cronbach's Alpha ( $\alpha$ ) value was calculated as 0.942 in our study.

#### 3. DAS 28 (Disease Activity Score)

The RA patients' disease activity level was calculated by DAS 28 (3, 4). The DAS 28, which includes the number of tender (TJN) and swollen joints (SJN), erythrocyte sedimentation rate (ESR) (mm/hour), and visual analogue scale (VAS) was calculated by the following Formula;  $DAS\ 28 = (0.56 \times TJN\ 1/2) + (0.28 \times SJN\ 1/2) + (0.7 \times ESR) + (0.014 \times VAS)$ . The disease activity level according to this score is evaluated as; remission  $<2.6$ , low disease activity ( $<3.2$ ), moderate disease activity (3.2-5.1), high disease activity ( $>5.1$ ).

#### 4. VAS (Visual Analogue Scale)

The evaluation of the RA patients was done by Visual Analogue Scale (VAS). The start of the line (0 value) means the best and the end the worse pain (10 value). The ten centimeter line was asked to show the patients' pain level the last week. The length has been

measured in centimeters (0-10 cm) (5).

**Statistical analysis**

The analysis of the study data has been performed in R 3.2.0 software. Independent two sample t test and one-way analysis of variance has been used in the comparison of difference between the groups for quantitative variables. Tukey test (post hoc), one of the multiple comparison tests, has been used in finding the group causing the difference. Pearson correlation coefficient has been calculated to evaluate the relation between the variables. The value  $p < 0.05$  was accepted as statistically significant.

**Results**

Of the RA patients 86.6% were women, 64.2% were elementary school graduates, 87.9% were married, 74.7% were housewives, 50.0% had income at minimum wage level, 56.7% were living in detached houses, 12.6% were smoking, 3.2% were drinking. Of the patients 41.6% had a chronic disease other than RA and hypertension was the most common (49.4%). Medicine use was 94.2%; 50.0% were using Disease Modifying Anti Rheumatic Drugs (DMARDs) and 32.4% were using corticosteroids (Table 1).

**Table 1.** The research patient group’s properties related to disease (RA)

Properties	Number	%
<b>Presence of chronic disease other than RA</b>		
Yes	79	41.6
No	111	58.4
<b>Chronic diseases other than RA (n=79)</b>		
Hypertension	39	49.4
Diabetes mellitus and hypertension	14	17.7
Diabetes mellitus	10	12.7
Other*	16	20.3
<b>Use of medicine</b>		
Yes	179	94.2
No	11	5.8
<b>Medicine used for RA (n=290)**</b>		
DMARDs	145	50.0
Corticosteroids	94	32.4
Biological agent	51	17.6

\*Hyperthyroidism, hypothyroidism, Familial Mediterranean Fever, Chronic Obstructive Pulmonary Disease, Hepatitis B, Asthma, \*\* More than one choice is marked.

RA patients’ VAS, DAS 28, and clinical data are given in Table 2.

**Table 2.** The patients’ duration of RA, distribution of VAS and DAS 28

Properties	X±SD	Median (min-max)
RA disease duration	11.2±8.4	10 (1 month-42 years)
Number of tender joints	4.5±5.0	3 (0-24)
Number of swollen joints	0.9±1.7	0 (0-12)
VAS	41.3±22.8	40 (0-100)
DAS 28	3.4±1.2	3.4 (1.46-6.95)

The most frequently used coping method was emotion oriented coping attitudes. Of the emotion oriented coping methods, the first one was religious coping. The second was the positive reinterpretation and growth and the third one was acceptance coping method (Table 3).

**Table 3.** The distribution of mean points of COPE subscales in RA patients

COPE subscales	X±SD
<b>Problem-oriented coping</b>	
Using instrumental social support	11.5±3.1
Active coping	12.4±2.3
Restraint	11.2±2.4
Suppression of competing activities	10.6±2.2
Planning	12.8±2.3
<b>Emotion-oriented coping</b>	
Positive reinterpretation and growth	13.3±2.1
Religious coping	15.2±1.4
Humor	8.2±3.5
Use of emotional social support	11.7±2.6
Acceptance	13.1±2.3
<b>Dysfunctional coping</b>	
Mental disengagement	11.1±2.5
Focus on and venting of emotions	11.2±3.0
Denial	8.1±3.8
Substance use	11.7±2.6
Behavioral disengagement	8.2±3.5

Women patients had statistically significantly low ‘using instrumental social support’ COPE subscale mean points when compared to men ( $p < 0.05$ ) (Table 4).

**Table 4.** The distributions of COPE subscale mean points according to different variables

Variables	n (%)	COPE subscales														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>Sex</b>																
Female	165(86.8)	12.3±2.1	11.1±2.5	11.1±3.0	11.3±3.2	12.3±2.3	8.0±3.7	15.3±1.3	8.2±3.5	8.4±3.4	11.3±2.5	11.6±2.6	4.5±1.8	13.1±2.2	10.6±2.2	12.8±2.4
Male	25 (13.2)	13.2±2.0	10.0±2.4	11.9±2.9	12.8±2.2	12.6±2.4	8.4±4.1	14.8±1.7	8.4±3.9	7.6±3.6	11.2±2.3	12.3±2.2	4.9±2.4	12.9±2.8	10.8±2.2	12.9±2.3
<i>p</i>		0.941	0.842	0.219	<b>0.004</b>	0.628	0.581	0.195	0.750	0.285	0.840	0.200	0.298	0.674	0.560	0.794
<b>Educational level</b>																
Illiterate or literate	35 (18.4)	13.8±1.9	11.2±2.0	10.6±3.0	11.0±3.5	12.5±2.6	9.5±3.8 <sup>a</sup>	15.2±1.4	9.1±3.8	10.5±3.2 <sup>a</sup>	12.2±2.6 <sup>a</sup>	11.7±2.9	5.2±2.8	13.3±1.9 <sup>a</sup>	11.2±2.6	13.2±2.3
Primary school	122(64.2)	13.2±2.1	11.0±2.6	11.3±3.0	11.5±3.1	12.2±2.1	8.0±3.6 <sup>ab</sup>	15.3±1.2	7.9±3.4	8.1±3.4 <sup>b</sup>	11.2±2.4 <sup>ab</sup>	11.6±2.5	4.4±1.7	13.3±2.1 <sup>ab</sup>	10.5±2.1	12.7±2.3
High school, University and over	17 (8.9)	12.8±1.6	11.1±2.5	11.5±3.4	12.2±2.6	12.5±2.3	8.1±4.5 <sup>ab</sup>	14.8±1.7	8.6±4.4	7.4±3.1 <sup>b</sup>	11.1±2.0 <sup>ab</sup>	12.1±2.2	4.9±2.1	12.4±3.1 <sup>b</sup>	10.9±2.2	12.1±2.7
<i>p</i>	16 (8.4)	13.1±2.3	10.6±2.3	12.2±1.6	11.9±3.0	12.5±2.8	5.5±2.7 <sup>b</sup>	14.6±1.8	7.9±3.2	5.6±2.7 <sup>bc</sup>	9.8±1.8 <sup>b</sup>	11.2±2.6	4.1±0.2	11.2±2.4 <sup>b</sup>	9.7±1.7	13.0±2.4
<i>p</i>		0.340	0.868	0.307	0.584	0.890	<b>0.005</b>	0.159	0.282	<b>&lt;0.01</b>	<b>0.009</b>	0.810	0.104	<b>0.002</b>	0.111	0.352
<b>Marital status</b>																
Married	167 (87.9)	13.3±2.0	11.1±2.4	11.3±3.0	11.5±3.2	12.5±2.2 <sup>a</sup>	8.2±3.8	15.3±2.3 <sup>a</sup>	8.3±3.6	8.4±3.5	11.3±2.5	11.7±2.6	4.6±2.0	13.1±2.2	10.7±2.2	12.9±2.4
Single	18 (9.5)	12.9±2.2	10.8±2.5	11.3±2.7	12.0±2.1	11.6±2.3 <sup>ab</sup>	6.8±3.1	14.6±1.7 <sup>b</sup>	7.6±2.9	7.3±3.4	10.7±2.1	11.7±2.0	4.1±0.3	12.4±2.6	9.9±2.0	12.5±1.7
Living separately	5 (2.6)	12.0±3.1	9.6±3.6	9.4±2.6	9.6±3.3	9.4±3.2 <sup>b</sup>	6.4±3.4	14.4±2.2 <sup>ab</sup>	6.2±3.0	6.8±3.5	10.2±2.6	10.4±1.9	4.0±0.0	12.2±2.3	9.4±1.3	10.6±3.0
<i>p</i>		0.252	0.373	0.370	0.320	<b>0.003</b>	0.178	<b>0.036</b>	0.304	0.273	0.333	0.534	0.469	0.315	0.177	0.081
<b>Profession</b>																
Housewife	142 (74.7)	13.3±2.1	11.1±2.5	11.1±2.9	11.1±3.3	12.2±2.3	8.2±3.7	15.2±1.3	8.0±3.5 <sup>a</sup>	8.7±3.4 <sup>a</sup>	11.5±2.5	11.6±2.5	4.5±2.0	13.3±2.1 <sup>a</sup>	10.7±2.2	12.8±2.2
Retired	21 (11.1)	13.6±2.1	11.2±2.2	11.8±2.7	12.6±2.4	13.2±2.1	8.0±4.2	14.8±1.6	7.8±3.3 <sup>a</sup>	6.5±3.3 <sup>b</sup>	11.0±2.1	12.0±2.7	4.5±2.0	12.7±2.1 <sup>ab</sup>	10.5±2.0	13.3±2.3
Employee	9 (4.7)	12.6±1.5	9.4±2.0	9.8±3.2	11.7±1.6	11.2±1.5	5.9±1.5	15.8±0.4	7.1±1.7 <sup>a</sup>	6.7±2.4 <sup>ab</sup>	10.6±1.0	10.9±2.4	4.1±0.3	11.1±2.8 <sup>b</sup>	9.4±1.7	12.0±1.9
Other*	18 (9.5)	13.3±2.2	11.3±2.6	12.6±3.1	12.8±2.9	12.8±2.7	8.2±4.3	15.0±1.6	10.4±4.0 <sup>ab</sup>	7.5±4.0 <sup>ab</sup>	10.2±2.7	12.1±3.2	4.8±2.0	12.6±2.8 <sup>ab</sup>	10.7±2.5	12.6±3.4
<i>p</i>		0.641	0.248	0.057	0.056	0.104	0.363	0.326	<b>0.038</b>	<b>0.012</b>	0.156	0.643	0.834	<b>0.024</b>	0.445	0.511
<b>Income</b>																
Minimum wage	95 (50.0)	13.2±2.1	11.0±2.4	10.8±3.0	11.4±3.3	12.2±2.4	8.5±3.6 <sup>a</sup>	15.3±1.3	8.0±3.5	8.7±3.3	11.4±2.6	11.6±2.4	4.6±2.0	13.2±2.2 <sup>a</sup>	10.7±2.3	13.0±2.4
1000-2000 TL	53 (27.9)	13.2±1.9	10.9±2.5	11.4±3.0	11.2±3.1	12.2±2.0	7.5±3.8 <sup>ab</sup>	15.2±1.4	8.3±3.6	7.5±3.3	11.2±2.1	11.5±2.8	4.2±0.8	12.8±2.2 <sup>ab</sup>	10.3±1.9	12.2±2.2
2001-3000 TL	31 (16.3)	13.6±2.2	11.9±2.5	12.0±2.7	12.1±2.9	13.2±2.0	8.5±4.1 <sup>a</sup>	15.2±1.3	8.9±3.6	8.7±4.1	11.5±2.6	12.1±2.7	5.0±2.7	13.4±2.2 <sup>a</sup>	11.1±2.3	13.5±2.0
3001 and over	11 (5.8)	13.1±1.8	10.0±2.7	11.7±2.6	12.0±2.3	12.3±2.8	5.5±2.0 <sup>b</sup>	14.5±2.0	7.3±3.3	6.7±2.7	9.5±1.6	11.6±2.2	4.4±0.9	11.4±2.8 <sup>b</sup>	10.2±2.0	12.2±2.6
<i>p</i>		0.769	0.100	0.262	0.610	0.197	<b>0.049</b>	0.383	0.544	0.069	0.107	0.819	0.378	<b>0.042</b>	0.348	0.070
<b>Smoking</b>																
Yes	24 (12.6)	13.4±1.9	10.3±2.3	10.2±2.6	11.0±3.4	12.4±2.2	6.7±3.6	15.2±1.4	8.1±3.8	6.5±3.5	9.9±2.3	10.4±2.6	4.7±1.8	13.1±1.8	10.0±2.0	12.5±3.0
No	166 (87.4)	13.2±2.1	11.2±2.5	11.4±3.0	11.6±3.1	12.3±2.3	8.2±3.8	15.2±1.4	8.2±3.5	8.5±3.4	11.4±2.4	11.8±2.5	4.5±1.9	13.0±2.3	10.7±2.2	12.8±2.2
<i>p</i>		0.706	0.108	0.066	0.415	0.959	0.053	0.993	0.875	<b>0.009</b>	<b>0.004</b>	<b>0.013</b>	0.661	0.877	0.154	0.558
<b>Alcohol</b>																
Yes	6 (3.2)	13.8±1.5	11.3±3.1	14.8±1.9	14.3±2.0	13.5±2.6	9.8±4.1	15.5±0.8	10.3±3.9	8.0±2.5	11.3±2.1	13.7±2.1	6.0±3.1	13.2±4.2	12.5±2.1	13.5±4.0
No	184 (96.8)	13.2±2.1	11.0±2.5	11.1±2.9	11.4±3.1	12.3±2.3	8.0±3.7	15.2±1.4	8.1±3.5	8.3±3.5	11.2±2.5	11.6±2.6	4.5±1.8	13.1±2.2	10.5±2.2	12.8±2.3
<i>p</i>		0.495	0.779	<b>0.002</b>	<b>0.024</b>	0.213	0.239	0.602	0.131	0.857	0.935	0.052	0.059	0.905	<b>0.031</b>	0.463
<b>Disease other than RA</b>																
Var	77 (40.5)	13.2±2.0	11.0±2.4	11.2±2.9	11.8±3.0	12.5±2.5	8.1±3.8	15.0±1.5	8.1±3.6	8.4±3.5	11.1±2.2	11.7±2.8	4.7±2.3	13.1±2.1	10.4±2.2	12.7±2.3
Yok	113 (59.5)	13.3±2.1	11.1±2.5	11.3±3.0	11.3±3.2	12.3±2.2	8.0±3.7	15.4±1.3	8.2±3.4	8.1±3.4	11.4±2.6	11.6±2.4	4.4±1.6	13.0±2.4	10.7±2.2	12.9±2.4
<i>p</i>		0.764	0.672	0.799	0.275	0.558	0.943	0.084	0.836	0.524	0.511	0.810	0.367	0.677	0.372	0.634
<b>Medicine use</b>																
Yes	179 (94.2)	13.3±2.1	11.1±2.4	11.3±3.0	11.5±3.1	12.4±2.2	8.2±3.8	15.2±3.4	8.3±3.6	8.4±3.5	11.4±2.4	11.8±2.5	4.5±2.0	13.2±2.2	10.6±2.2	12.8±2.3
No	11 (5.8)	12.1±1.7	10.0±2.7	10.6±2.7	10.7±3.3	11.7±3.2	6.4±3.0	15.4±1.2	6.4±2.4	6.3±2.4	9.4±1.9	9.8±2.3	4.0±0.0	11.3±2.5	9.9±1.8	12.4±2.5
<i>p</i>		0.050	0.147	0.485	0.408	0.352	0.147	0.546	<b>0.025</b>	0.051	<b>0.012</b>	<b>0.013</b>	<b>&lt;0.01</b>	<b>0.007</b>	0.285	0.611
<b>Disease activity level</b>																
Remission	57 (30.0)	12.9±2.1	10.7±2.6	11.7±3.0	11.9±2.8	12.3±2.4	7.4±3.7	14.9±1.6	7.8±3.6	8.0±3.7	11.0±2.3	11.0±2.5	4.5±1.8	13.0±2.1	10.2±2.4	12.5±2.4
Low	32 (16.8)	13.3±2.0	10.8±2.2	11.4±2.6	11.6±3.2	12.2±2.4	8.2±3.0	15.1±1.6	7.3±3.0	8.2±2.9	11.4±2.4	12.0±2.2	4.1±0.3	12.8±2.8	10.5±1.9	13.0±2.3
Moderate	78 (41.1)	13.4±2.0	11.4±2.4	11.0±3.0	11.6±3.2	12.5±2.1	8.4±4.1	15.4±1.2	8.8±3.6	8.2±3.6	11.1±2.5	11.4±2.7	4.7±2.4	13.0±2.1	10.7±2.2	12.9±2.3
High	23 (12.1)	13.6±2.0	11.1±2.8	10.8±2.9	10.2±3.5	12.2±2.5	8.4±3.5	15.6±0.9	8.3±3.5	9.2±3.1	12.2±2.4	11.4±2.4	4.7±1.9	13.7±2.3	11.3±2.1	13.1±2.4
<i>p</i>		0.459	0.455	0.513	0.713	0.886	0.425	0.088	0.162	0.524	0.218	0.487	0.497	0.518	0.220	0.655

<sup>1</sup>Positive reinterpretation and growth, <sup>2</sup>Mental disengagement, <sup>3</sup>Focus on and venting of emotions, <sup>4</sup>Using instrumental social support, <sup>5</sup>Active coping, <sup>6</sup>Denial, <sup>7</sup>Religious coping, <sup>8</sup>Humor, <sup>9</sup>Behavioural disengagement, <sup>10</sup>Restraint, <sup>11</sup>Use of emotional social support, <sup>12</sup>Substance use, <sup>13</sup>Acceptance, <sup>14</sup>Suppression of competing activities, <sup>15</sup>Planning, \*officer, unemployed, student, self employed

There was statistically significant difference in the denial, behavioral disengagement; restraint and acceptance COPE subscale mean points of the patients according to education level. ( $p < 0.05$ ). The denial and restraint mean points of the university and over group were statistically significantly low when compared to the illiterate/literate group. The behavioral disengagement acceptance points of the illiterate/literate group were statistically significantly high when compared to the other groups ( $p < 0.05$ ) (Table 4).

The active coping COPE subscale mean points of the patients living separate from wives/husbands was statistically significantly low when compared to the patients living together. ( $p < 0.05$ ) (Table 4). The religious coping COPE subscale mean points of the single patients were statistically significantly low when compared to the married patients ( $p < 0.05$ ) (Table 4). The following were statistically significantly low; the humor COPE subscale mean points of the housewives, retired and employees when compared to other groups, behavioral disengagement

COPE subscale mean points of the retired when compared to housewives, acceptance COPE subscale mean points of the employees when compared to housewives ( $p<0.05$ ) (Table 4).

The acceptance and denial COPE subscale mean points of the patients with monthly income of 3001 TL and over was statistically significantly low when compared to other income levels ( $p<0.05$ ) (Table 4). The behavioral disengagement, restraint and use of emotional social support COPE subscale mean points of the smoking patients were statistically significantly low when compared to non-smoking patients ( $p<0.05$ ) (Table 4). The focus on and venting of emotions, using instrumental social support, suppression of competing activities COPE subscale mean points of the patients taking alcohol was statistically significantly high when

compared to patients not taking alcohol ( $p<0.05$ ) (Table 4). The humor, restraint, use of emotional social support, substance use and acceptance COPE subscale mean points were statistically significantly high in patients using medicine when compared to patients not using medicine ( $p<0.05$ ) (Table 4).

There was positive correlation between; age and behavioral disengagement and restraint, RA duration (years) and use of emotional social support, DAS 28 and religious coping and suppression of competing activities, VAS and religious coping COPE subscale mean points. There was negative correlation between the number of tender joints and focus on and venting on emotions, using instrumental social support and use of emotional social support COPE subscale mean points ( $p<0.05$ ) (Table 5).

**Table 5.** The correlation between COPE subscale points and different variables in RA patients

Variables	COPE subscales														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Age	r=0.129 p=0.077	r=0.046 p=0.527	r=-0.129 p=0.076	r=0.028 p=0.212	r=0.084 p=0.249	r=0.107 p=0.141	r=-0.068 p=0.351	r=-0.053 p=0.471	<b>r=0.241</b> <b>p=0.001</b>	<b>r=0.192</b> <b>p=0.008</b>	r=0.054 p=0.463	r=0.038 p=0.602	r=-0.001 p=0.986	r=-0.036 p=0.619	r=0.110 p=0.130
RA duration	r=0.119 p=0.103	r=0.116 p=0.112	r=0.071 p=0.331	r=0.122 p=0.095	r=0.080 p=0.272	r=0.105 p=0.149	r=0.060 p=0.412	r=0.120 p=0.100	r=0.077 p=0.292	r=0.099 p=0.176	<b>r=0.151</b> <b>p=0.037</b>	r=0.050 p=0.495	r=0.055 p=0.449	r=0.017 p=0.814	r=0.057 p=0.435
Disease Activity Score (DAS 28)	r=0.140 p=0.054	r=0.105 p=0.148	r=-0.113 p=0.121	r=-0.140 p=0.053	r=0.019 p=0.794	r=0.084 p=0.249	<b>r=0.190</b> <b>p=0.009</b>	r=0.087 p=0.233	r=0.063 p=0.385	r=0.104 p=0.153	r=-0.117 p=0.108	r=0.083 p=0.254	r=0.078 p=0.286	<b>r=0.146</b> <b>p=0.045</b>	r=0.066 p=0.364
Number of tender joints	r=0.096 p=0.189	r=0.054 p=0.460	<b>r=-0.151</b> <b>p=0.037</b>	<b>r=-0.186</b> <b>p=0.010</b>	r=0.017 p=0.818	r=0.094 p=0.197	r=0.141 p=0.052	r=0.117 p=0.109	r=0.059 p=0.421	r=0.098 p=0.179	<b>r=-0.154</b> <b>p=0.034</b>	r=0.098 p=0.178	r=0.075 p=0.306	r=0.130 p=0.075	r=0.025 p=0.735
Number of swollen joints	r=-0.013 p=0.860	r=0.039 p=0.591	r=-0.069 p=0.342	r=-0.103 p=0.159	r=-0.069 p=0.347	r=-0.064 p=0.381	r=0.076 p=0.298	r=0.066 p=0.366	r=-0.082 p=0.258	r=-0.042 p=0.569	r=-0.088 p=0.230	r=-0.023 p=0.756	r=-0.021 p=0.778	r=0.022 p=0.768	r=-0.019 p=0.793
VAS	r=0.118 p=0.106	r=0.087 p=0.235	r=-0.137 p=0.059	r=-0.107 p=0.142	r=-0.009 p=0.898	r=0.054 p=0.459	<b>r=0.198</b> <b>p=0.006</b>	r=0.050 p=0.491	r=0.073 p=0.319	r=0.061 p=0.400	r=-0.102 p=0.161	r=0.098 p=0.181	r=0.066 p=0.363	r=0.125 p=0.085	r=0.060 p=0.408

<sup>1</sup>Positive reinterpretation and growth, <sup>2</sup>Mental disengagement, <sup>3</sup>Focus on and venting of emotions, <sup>4</sup>Using instrumental social support, <sup>5</sup>Active coping, <sup>6</sup>Denial, <sup>7</sup>Religious coping, <sup>8</sup>Humor, <sup>9</sup>Behavioural disengagement, <sup>10</sup>Restraint, <sup>11</sup>Use of emotional social support, <sup>12</sup>Substance use, <sup>13</sup>Acceptance, <sup>14</sup>Suppression of competing activities, <sup>15</sup>Planning

## Discussion

The most frequently used coping method was emotion oriented coping attitudes; where the religious coping was the first one, the positive reinterpretation and growth the second and the third one was acceptance coping method. Gender, education level, marital status, occupation, income level, smoking, alcohol consumption and using medicine made differences in the methods used for coping. In addition, there was positive correlation between DAS 28 and VAS and some coping methods, and negative

correlation was found between number of tender joints and coping methods. Our study demonstrated the factors defining the use of certain coping methods.

The strength of this study is that the coping methods used by the RA patients are shown by using disease activity index and the visual analogue scale which gives the level of the perceived pain. There are few studies on the coping attitudes of RA patients.

Bendtsen and Hörnquist (6) have performed a study on coping and well-being in rheumatoid arthritis in 1994. They included 222 RA patients in their study.

They studied the relationship between clinical manifestations, self-assessed functional disability and coping, on one hand, and well-being, on the other. The severity of RA disease was hypothesized to be negatively related while utilization of various coping strategies. In their study group, the most mentioned coping strategies were problem oriented. In their study, acceptance and control was observed less with increasing severity of RA. In addition, bivariate analysis between coping strategies and well-being revealed generally low correlations. In conclusion, it was stated that the study outcome underscored the significance of well-being and coping (psychosocial factors) in RA, which should be considered and not neglected in clinical practice. Acceptance was the third most frequently used coping method and there was positive correlation between the severity of pain (VAS) and religious coping.

In 1999, Murphy H et al. aimed to establish the relationship between depression, illness perception, coping strategies, and adverse childhood events in rheumatoid arthritis patients (7). They included sixty-two out-patients with RA. The patients completed the Hospital Anxiety and Depression Scale, Illness Perception Questionnaire, London Coping with Rheumatoid Arthritis Questionnaire, and Childhood Development Questionnaire, and underwent a clinical assessment of their physical state. They stated that depressed patients had a more negative view of their illness, and used more negative coping strategies. The items of COPE used in our study were different when compared to London Coping with Rheumatoid Arthritis Questionnaire. Coping was compared with disease activity level and level of pain in our study.

In another study, it was aimed to identify typologies of experiences and coping strategies of men with RA (8). Thirty of sixty-five invited men with RA had participated in the study (46%). In their study, two factors describing the experiences and coping strategies of male patients living with RA were identified: factor A: 'acknowledge, accept and adapt' (n=14) take a proactive approach to managing the

impact of RA and find different ways of doing things; while factor B: 'trying to match up to a macho ideal' (n=8) are determined to continue with their pre-RA lives, and therefore push themselves to carry on even if this causes them pain. It was stated that they were frustrated and angry due to the impact of RA but they internalize this rather than directing it at others. In conclusion, while some men adapt to their RA by renegotiating their masculine identity, others struggle to relinquish their traditional masculine roles. The need for further research was told to identify whether the finding that there are two distinct groups of men with RA could be generalized, and if so whether the differences could be explained by clinical, social or psychological factors, which may inform different therapeutic approaches. The finding related to gender in our study showed that women had statistically significantly low 'using instrumental social support' COPE subscale mean points when compared to men.

In a study performed on 101 patients, coping strategies in rheumatoid arthritis were reported as active problem solving, distancing, concealment, cognitive refraining and emotional expression (9). The coping methods used in our study also show the necessity of appropriate approach to the patients for coping with the disease.

The results of our study show us that there is still necessity for further psychological supporting the RA patients. This support should be given by the medical team dealing with the patient to prevent the patient from anxiety disorders and depression.

## Conclusion

Our study demonstrated that the most frequent coping method used by the patients was emotion oriented coping attitudes. There was positive correlation between the DAS 28 and religious coping and suppression of competing activities, VAS and religious coping points. It is necessary to define the coping methods which could help define the necessity of psychological support.

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