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Coping strategies, anxiety, depression, and quality of life in rheumatoid arthritis patients

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Abstract

The purpose of this study was to evaluate the effect of Rheumatoid Arthritis (RA) disease, which is known to have adverse psychological effects on depression, anxiety, coping, and quality of life. The study included 59 RA patients and 56 healthy individuals (control group). Sociodemographic data form, Beck Anxiety Scale, Beck Depression Scale, COPE (coping) scale, and RA Quality-of-Life Questionnaire were used to collect data. The groups were compared according to the results. The RA patients were observed to have higher levels of depression and anxiety compared to the control group ($p<0.001$, all). The RA patients were found to have moderate depression and mild anxiety. The RA group had significantly lower problem-focused coping scores ($p=0.002$) than the control group. It was found that as the RA patients' anxiety and pain levels increased, so did their level of depression. Moreover, as their depression, anxiety, and pain levels increased, their quality of life decreased. It was found that RA patients had higher depression and anxiety levels compared to the control group. It was observed that the RA patients' level of depression increased with increasing anxiety and pain, while their quality of life decreased with increasing levels of depression, anxiety, and pain. We consider that psychiatric approaches can contribute to quality-of-life in patients with RA.

Keywords: rheumatoid arthritis, anxiety, depression, quality of life.

1. Introduction

Rheumatoid arthritis (RA) is a chronic connective tissue disease with stiffness, pain, and deformities in joints, which can affect other body systems, and includes periods of exacerbation and recovery (1). The incidence of RA is about 0.5-1% (2). Its etiology is unknown; in addition to hereditary factors, it is suggested that mental and social factors also play a role in the emergence and course of the disease (3). RA is a health problem affecting the quality of life (4). RA causes impairment in both the physical and psychosocial lives of individuals (1). Symptoms may result in restriction of daily activities, decreased work efficiency, social isolation, and dependence on others (3).

Coping attitudes include specific psychological and behavioral efforts used to struggle with the adverse effects of stressors (5). Psychiatric disorders such as depression and anxiety can occur in patients with RA. Pain, physical disability, and loss of social activities can play a role individually or together, leading to mood disorders (6, 7). It has been reported that 14.5-42.0% of RA patients have depression; in those with depression, the disease has more severe symptoms and functional impairments, and anxiety is as common as depression (1, 2, 6). The uncertainty of the course of the disease, the functional disorders it causes, and the pain and social isolation that develops due to the infection may predispose to the development of both anxiety and depression in RA (6-8).

In this study, we aimed to compare the RA patients with a healthy control group in terms of coping, depression, and anxiety.

2. Materials and Methods

This cross-sectional case-control study conducted between August and October 2020 included 59 RA patients and 56 healthy individuals. Sociodemographic data form, Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), Coping with Stress Attitudes scale (COPE) scale, and Rheumatoid Arthritis Quality of Life Questionnaire (RAQoL) were used to collect data, and the groups were compared according to the results.

The socio-demographic data form includes the following information: age, gender, educational status, marital status, occupation, family history of RA, psychiatric history, and

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duration of RA. BDI is used to assess depression levels. The higher the total score, the more severe the depression (9, 10). BAI is a self-assessment scale developed to determine the frequency of anxiety symptoms experienced by individuals (11, 12). The COPE scale was designed to determine the coping strategies used in stressful situations. It consists of 60 items in 15 subscales answered (13, 14). The RAQoL form is a quality-of-life questionnaire explicitly developed for RA. The patients answer the questionnaire with 30 questions on their own in the form of yes/no. The higher the score, the lower the quality of life (15, 16). Visual Analogue Scale (VAS), pain severity is scored between 0 (no pain) and 10 points (worst pain imaginable) (17).

Inclusion criteria: RA patients over the age of 18, with cognitive functions sufficient to answer the questions, and the control group were included in the study. Exclusion criteria: Individuals with cognitive impairment preventing them from answering the questions, those who did not answer the questionnaire completely, and those with missing sociodemographic data were excluded from the study (Fig. 1).

In the statistical data analysis, International Business Machines (IBM) Statistical Package for the Social Sciences (SPSS) software package (v.22.0; SPSS Inc., Armonk, NY, USA) was used. Based on the data distribution in the comparison between groups, the One-way ANOVA test was used for normally distributed values in non-categorical data and the Mann-Whitney U test for non-parametric data. Categorical data were compared using the Chi-square test. Pearson Correlation analysis was used to analyze the relationship between scale scores. The statistical significance was set at $p < 0.05$.

This study was conducted by Helsinki Principles, and ethical approval was taken from the local ethics committee (Decision Number: 2020/328, 27.08.2020).

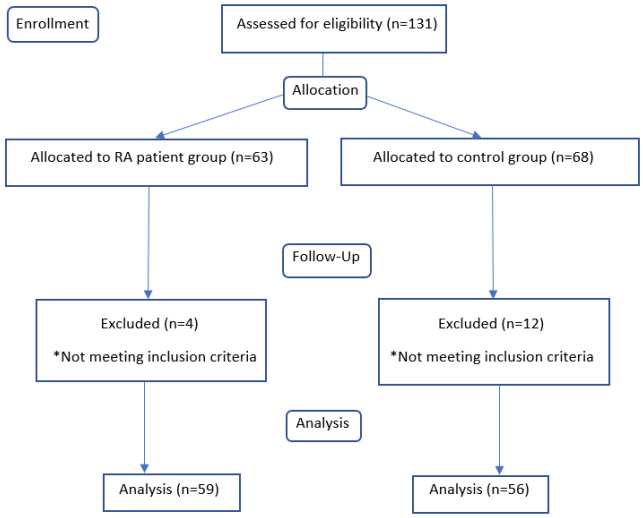

Fig. 1. Flow diagram of the study

3. Results

Our study included 59 RA patients and 56 healthy controls. The mean age of the RA patients was 57.7±12.4 years, and 38 (%64.4) of them were women. The mean age of the control group was 59.5±12.3 years, and 29 (%51.8) of them were women. In the RA patients, the rates of being a primary school graduate ($p<0.001$), being a housewife ($p=0.006$), having a psychiatric illness ($p=0.010$), and having a family history of RA ($p<0.001$) were statistically significantly higher compared to the control group (Table 1).

There was a statistically significant difference between the RA patients and the control group in terms of BDI ($p<0.001$) and BAI scores ($p<0.001$). It was observed that the RA patients had moderate depression and mild anxiety. The mean RAQoL score was 15.0±4.8, and the mean VAS score was 7.4±2.1 in the patients with RA (Table 2).

Table 1. Sociodemographic and clinical characteristics of RA patients and control groups

Variables		All participants (*n*=115)	RA patients (*n*=59)	Control groups (*n*=56)	*p*
Age (year), (mean±sd)		58.5±12.3	57.7±12.4	59.5±12.2	0.441
Gender, *n* (%)	Female	67 (58.3)	38 (64.4)	29 (51.8)	0.118
	Male	48 (41.7)	21 (35.6)	27 (48.2)	
Marriage status, *n* (%)	Single	7 (6.1)	4 (5.4)	3 (6.8)	0.864
	Married	108 (93.9)	55 (94.6)	56 (93.2)	
Education Status, *n* (%)	Literate	16 (13.9)	10 (16.9)	6 (10.7)	<0.001
	Primary school	46 (40.0)	38 (64.4)	8 (14.3)	
	Middle school	16 (13.9)	9 (15.3)	7 (12.5)	
	High school	16 (13.9)	2 (3.4)	14 (25.0)	
	University	21 (18.3)	0 (0)	21 (37.5)	
Occupation, *n* (%)	Housewife	44 (38.3)	25 (42.4)	19 (33.9)	0.006
	Officer	16 (13.9)	2 (3.4)	14 (25.0)	
	Worker	7 (7.1)	5 (8.5)	2 (3.6)	
	Self-employment	10 (8.7)	4 (6.8)	6 (10.7)	
	Retired	38 (33.0)	23 (39.0)	15 (26.8)	
Psychiatric history, *n* (%)	Yes	10 (8.7)	9 (15.3)	1 (1.8)	0.010
	No	105 (91.3)	50 (84.7)	55 (98.2)	
RA history of the family, *n* (%)	Yes	17 (14.7)	14 (23.7)	3 (5.3)	<0.001
	No	98 (85.3)	45 (76.3)	53 (94.7)	
Duration of RA (year), (mean ± sd)		-	11.5 ± 5.6	-	-

p, chi square test; *n*, number; sd, standard deviation; RA, Rheumatoid Arthritis

Table 2. Comparison of BDI, BAI, COPE, VAS, and RAQoL scores of RA patients and control group

Scales	RA Patients (mean±sd)	Control Groups (mean±sd)	*p*
BDI	17.4±9.7	7.0±5.5	<0.001
BAI	14.9±9.1	6.8±6.9	<0.001
COPE	154.4±27.3	154.9±14.4	0.895
RAQoL	15.0±4.8	-	-
VAS	7.4±2.1	-	-

p, independent samples test; sd, standard deviation; RA, Rheumatoid Arthritis; BDI, Beck Depression Inventory; BAI, Beck Anxiety Inventory; COPE, Coping with Stress Attitudes scale; RAQoL, Rheumatoid Arthritis Quality of Life questionnaire; VAS, Visual Analogue Scale

The problem-focused coping scores (p=0.002) were significantly lower, and the non-functional coping scores (p=0.007) were significantly higher in the RA group than in the control group. When the COPE subscales of the groups were compared, active coping (p<0.001), planning (p<0.001), positive reinterpretation and development (p=0.014), acceptance (p=0.032), focusing on the problem and revealing emotions (p=0.028), problem-focused coping (p=0.002) scores were found to be statistically significantly lower while joking (p=0.002), behavioral disengagement (p=0.004), substance abuse (p=0.006), denial (p=0.001), mental ignoring (p<0.001), and functionally focused coping (p=0.007) scores were found to be statistically significantly higher in the RA group compared to the control group (Table 3).

According to the results of the correlation analysis between COPE, BDI, BAI, RAQoL, VAS, and disease duration in RA patients, there was a positive correlation between BDI and BAI (p<0.001) and VAS (p=0.046), and between RAQoL and BDI (p=0.040), BAI (p=0.039), and VAS (p<0.001) (Table 4)

Table 3. Comparison of Groups According to COPE Coping Sub-Scale Scores

COPE points	RA Patients (mean±sd)	Control Groups (mean±sd)	*p*
COPE-1 (active coping)	11.8±2.4	13.6±1.5	<0.001
COPE-2 (stalling)	10.0±2.4	10.2±1.5	0.600
COPE-3 (planning)	11.2±2.7	13.1±2.2	<0.001
COPE-4 (using beneficial social support)	11.8±2.8	12.3±1.7	0.292
COPE-5 (suppressing other activities)	10.6±2.4	11.3±2.3	0.198
COPE-6 (positive re-interpretation and development)	12.8±2.2	13.7±1.7	0.014
COPE-7 (religious coping)	14.1±2.7	13.4±3.5	0.266
COPE-8 (joking)	8.0±3.7	6.3±1.7	0.002
COPE-9 (using emotional, and social support)	12.1±2.5	11.5±2.8	0.321
COPE-10 (acceptance)	10.1±3.0	11.2±2.5	0.032
COPE-11 (cognitive disengagement)	7.4±3.0	6.0±2.0	0.004
COPE-12 (substance use)	5.7±3.5	4.3±0.8	0.006
COPE-13 (denial)	8.4±3.4	6.6±2.6	0.001
COPE-14 (mental disengagement)	10.2±2.8	8.2±2.2	<0.001
COPE-15 (focusing on the problem and showing emotion)	10.6±2.5	11.7±2.5	0.028
COPE-P (Problem-focused coping)	55.4±10.4	60.8±6.9	0.002
COPE-E (Emotion-focused coping)	57.2±11.0	56.3±7.5	0.614
COPE-F (Function-focused coping)	42.4±11.0	37.9±5.2	0.007
COPE-T (Total coping points)	154.4±27.3	154.9±14.4	0.895

p, independent samples test; sd, standard deviation; RA, Rheumatoid Arthritis; COPE, Coping with Stress Attitudes scale

Table 4. Correlation analysis between COPE, BDI, BAI, RAQoL, VAS, and duration of illness in RA patients

Variables		COPE	BDI	BAI	RAQoL
COPE	***r***	-	-0.018	-0.016	0.131
	95% CI	-	-0.289, 0.268	-0.286, 0.270	-0.128, 0.421
	p	-	0.893	0.940	0.321
BDI	***r***	-0.018	-	0.994	0.269
	95% CI	-0.289, 0.268	-	0.990, 0.996	0.036, 0.504
	p	0.893	-	<0.001	0.040
BAI	***r***	-0.016	0.994	-	0.268
	95% CI	-0.286, 0.270	0.990, 0.996	-	0.025, 0.509
	p	0.940	<0.001	-	0.039
RAQoL	***r***	0.131	0.269	0.268	-
	95% CI	-0.128, 0.421	0.036, 0.504	0.025, 0.509	-
	p	0.321	0.040	0.039	-
VAS	***r***	0.078	0.261	0.251	0.799
	95% CI	-0.211, 0.390	0.064, 0.450	0.053, 0.436	0.709, 0.887
	p	0.557	0.046	0.055	<0.001
Duration of illness	***r***	-0.144	-0.126	-0.159	-0.067
	95% CI	-0.380, 0.055	-0.354, 0.117	-0.386, 0.078	-0.315, 0.182
	p	0.275	0.342	0.230	0.616

p-value, Pearson Partial Correlation Test; *r,* Correlation Coefficient; CI, Confidence Interval; BDI, Beck Depression Inventory; BAI, Beck Anxiety Inventory; COPE, Coping with Stress Attitudes scale; RAQoL, Rheumatoid Arthritis Quality of Life questionnaire; VAS, Visual Analogue Scale

4. Discussion

In our study, higher levels of anxiety and depression were observed in the RA patients compared to the control group, but no difference was observed in their total coping scores. The RA patients were found to have moderate depression and mild anxiety. RA can negatively affect patients in all areas, also leading to psychiatric disorders. In the study of Altan et al., it was revealed that the frequency of depression and anxiety in people with RA was higher than in the healthy control group (6). Frank et al. reported that 42.0% of the patients with RA had depression, and those with depression had more severe symptoms and functional disruptions (18). Zahura et al. found that depressive symptoms increase the perception of arthritis pain in RA. Therefore, it is possible to state that recognizing depression in RA patients may play an essential role in treating the disease (19). El-Miedany et al. reported that, in RA patients, anxiety was as frequent as depression. The researchers have suggested that anxiety may be a precursor of future depression and correlate with social stress (20).

In our study, the problem-focused coping scores were lower, and the non-functional coping scores ($p=0.007$) were higher in the RA group than in the control group. It was found that the RA patients had poor problem-focused and active coping skills; in coping with stress, they could not plan and interpret positively and were unable to accept, focus on the problem, and reveal their emotions. In our study, the majority of the RA patients were middle-aged women. In RA patients, the rates of being a primary school graduate, being a housewife, having a psychiatric history, and having a family history of RA were higher compared to the control group. In previous studies, it has been reported that hereditary factors play a role in the occurrence and course of RA (3). The RA patients were found to cope with a functional focus, neglect behaviorally, joke, use substances, deny, and neglect mentally. Individuals exposed to chronic stress such as RA may be inadequate in some subgroups to cope with this condition, but they can start the whole adjustment process. In the study groups of Bendtsen et al., the most frequently mentioned coping strategies were found to be related to the problem (21). In the study of Mıstık et al., a positive relationship was found between the severity of pain (VAS) and religious coping scores, in which the RA patients most frequently used emotion-focused coping attitudes (2). Harmful defense mechanisms such as self-blame or denial have also been observed to accompany depression in patients with RA. In addition to these social factors, RA can lead to psychiatric disorders by affecting the immune system. It is known that acute or chronic stress can cause anxiety by disrupting the body's defense mechanisms (6).

Altınkesen reported that the severity of pain in the late period affects the quality of life related to physical health in patients with RA. There is a strong positive correlation between functional status and quality of life. He reported that the limitation of movement in the distal joints, especially in the hand and wrist joints, prevented their daily life activities related to the skill and performance in their professions (22). Despite the advanced treatment options required for chronic use and available in selected patients, RA may cause deformation and muscle atrophy in small, medium, and large joints (23). Our study found that the level of depression increased with increasing anxiety and pain levels. It was observed that the quality of life decreased with increasing levels of depression, anxiety, and pain.

In RA, stressors can initiate pathophysiological changes or accelerate the course of these changes (3). RA causes joint deformities, widespread pain, dependence on others, and limitations in daily functions. Even if physical limitations and addiction do not develop in RA patients, they live with these fears. These fears lead to a change in one's body perception and depression by finding oneself worthless and inadequate (24). Studies have found that pain, dependence, and limitation of movement are the most significant stressors in RA patients (25). In the study of Aslan et al., it was shown that there was a relationship between disease-related characteristics and depression and anxiety in women with RA (1). In the study of Altan et al., it was found that depression and anxiety were generally associated with the disease activation parameters such as pain and swollen and sensitive joints (6). Murphy et al. reported a significant relationship between depression and VAS pain scores (26). Although there is evidence that disability causes depression in RA (27), there is also evidence that depression may cause disability (28). It has been reported that psychiatric morbidity significantly affects the overall course of the disease, the perception of pain, and the quality of life in RA patients (6). It can be interpreted as an expected result that these patients who have more joint deformities and pain and can perform fewer daily activities find themselves less attractive are less satisfied with their bodies. This makes the person more prone to depression (29).

In our study, there was no correlation between the disease duration and scale scores. Sharpe et al. found that the patients' mean depression score gradually increased over two years in which they followed up on early RA cases. However, interestingly, they found that the score decreased in the final evaluation, and they explained this with the hypothesis that the patients might have adapted to their disease (30).

One of the limitations of our study is that it is single-centered. Future studies should be carried out in multiple centers with more participants. The strength of our research lies in that it is a prospective study that compares RA patients with normal individuals in terms of anxiety, depression, coping, and quality of life.

This study found that problem-focused coping skills were low, and the levels of depression and anxiety were high in patients with RA. It was found that the level of depression increased with increasing anxiety and pain intensity. It was observed that the quality of life decreased with increasing

depression, anxiety, and pain intensity. We consider that psychiatric approaches can contribute to the quality of life in patients with RA.

Ethical Statement

This study was conducted by Helsinki Principles, and ethical approval was taken from the local ethics committee (Decision Number: 2020/328, 27.08.2020).

Conflict of interest

None to declare.

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None to declare.

Authors' contributions

Concept: H.İ., F.İ., Design: H.İ., F.İ., Data Collection or Processing: H.İ., F.İ., Analysis or Interpretation: H.İ., F.İ., Literature Search: H.İ., F.İ., Writing: H.İ., F.İ.

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