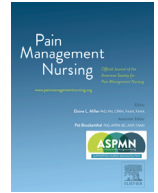




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Original Article

Pain and Affected Symptoms of Patients with Rheumatoid Arthritis During COVID-19 Period

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ABSTRACT

Background: Aim: The aim of this study is to determine the symptoms, pain, and function changes experienced by rheumatoid arthritis patients during the COVID-19 pandemic.

Method: This descriptive study was completed with a total of 119 patients from the rheumatology clinic of a university hospital who met the follow-up research criteria and agreed to participate in the study. Descriptive features question form, pandemic period disease characteristics form, and Visual Analogue Scale were used to collect data.

Results: The mean age of the patients was 48.53 ± 10.24 , the duration of the disease was 69.63 ± 37.02 months, the average visual analog scale values before the pandemic period were 3.77 ± 1.40 , while the average visual analog scale values during the pandemic period were 5.02 ± 1.57 . The most common patient complaints were hygiene problems ($p < .001$), dressing problems ($p < .001$), and nutritional problems ($p < .001$) due to increased pain during the pandemic period. It was determined that the patients needed a health care professional for self-care ($p < .001$), injections ($p < .001$), and pain management ($p < .001$) during the pandemic period.

Conclusions: During the pandemic period, patients with rheumatoid arthritis (RA) stated that they needed the support of a health care professional for self-care, injections, and pain management.

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Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, COVID-19) first appeared in China in December 2019 (Wu et al., 2020) and was later reported and described by WHO as a global pandemic on March 11, 2020. After the start of the COVID-19 outbreak, many countries made arrangements to avoid a health care lockdown and to cope with the increasing number of patients. In order to slow the spread of COVID-19 and not increase the burden on hospitals, the authorities initiated “stay at home, home safer” campaigns. In addition, individuals with chronic diseases were prohibited from leaving their homes due to the vulnerable population in Turkey. To focus on the care of COVID-19 patients and avoid unnecessary bed occupation, deferred routine medical activities, including planned hospitalizations and consultations, have been canceled. At the same time, patients with rheumatoid arthritis (RA)

were not given physical examination appointments due to restrictions during the pandemic period. During this period, patients continued to buy their prescription drugs from pharmacies without the need for a new doctor's prescription, as per the Ministry of Health directive for all patients with chronic diseases. Therefore, patients had access to their medication but not the assistance of a health care professional.

The transition to remote health care provision during the COVID-19 outbreak has become particularly important for individuals diagnosed with RA, due to the increased risk of comorbidity and susceptibility to infection (Howren et al., 2020). In terms of COVID-19, patients with rheumatic diseases may be at higher risk of infection (Sarzi-Puttini et al., 2020).

RA is a chronic inflammatory multisystem disease that causes joint pain, swelling (synovitis), stiffness, and muscle wasting around the affected joints. Pain, stiffness, swollen joints, fatigue, and joint deformities seen in the later stages of the disease are common symptoms of RA (Mohammed, 2020). These conditions affect patients physically, mentally, and socially from the early stages

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of the disease (Salaffi et al., 2009). Therefore, prevention of inflammation and pain relief in treatment are important for symptom control (Kwoh et al., 2002). Nonsteroidal anti-inflammatory drugs (NSAIDs) are used in the symptomatic treatment of rheumatoid arthritis. Corticosteroids are used as bridge therapy in the initiation of the effects of drugs in the treatment of disease-modifying antirheumatic drug (DMARD).

In addition to pharmacologic treatment, disease management also plays an important role in symptom control. With the emergence of new treatment strategies in rheumatology and the professionalization of services, there is a greater need for health care professionals in rheumatology to play a role in disease management. Nurses assuming advanced and expanded roles today achieve great success in the care of rheumatology patients (Kelly et al., 2015). Nurses' caring roles include patient self-management support, patient education and counseling, information about intra-articular injections, medication management, self-injections, coordination with other health care professionals, consulting on the phone, and training on biologic treatments (Garner et al., 2017; Schiff et al., 2017). During the COVID-19 pandemic, patients with RA could not go to the hospital and tried to stay at home as much as possible. For this reason, it is thought that the disease management of patients with RA may have been interrupted resulting in inadequate physician and nurse support, and increased pain and loss of function. However, no research has been found in the literature on the problems experienced by patients with RA during the COVID-19 pandemic period. This study was designed to determine the effect of the COVID-19 pandemic period on disease management, pain, and function changes in patients with RA.

Methods

Research Type and Purpose

A descriptive design was used to determine the symptom management, pain, and function changes experienced by patients with RA during the COVID-19 pandemic.

Place and Time of the Study

The study was conducted between October 15, 2020, and December 15, 2020, with patients with RA who were followed up from the rheumatology clinic of a university hospital.

Design and Sample

The study sample consisted of patients who were followed up from a university hospital's rheumatology clinic, met the research criteria and agreed to participate in the study.

Inclusion Criteria

Diagnosed with RA before March 2020, aged >18 years, no hospital visit for RA follow-up for 6 months from the onset of the pandemic, non-smoker, non-alcoholic, not taking biologic DMARDs, and disease in remission.

Exclusion Criteria

Having a chronic disease other than RA, having a different rheumatologic disease other than RA, have had a COVID-19 infection, having COVID-19 infection during data collection.

Data Collection Tools

In collecting the data, a questionnaire prepared by the researchers containing the descriptive characteristics of the patients, a form consisting of open-ended questions prepared by the researchers by scanning the literature, and a visual analog scale (VAS) were used.

Descriptive characteristics form

A form of 7 questions was created for sociodemographic and RA disease effects such as gender, age, educational status, economic status, family structure, where they live.

The pandemic period disease characteristics form composed of open-ended questions

This form consists of 2 parts and includes 5 open-ended questions. The forms were filled on the basis of patient statements. The questions in this form are derived from published research on the disease and symptom management of patients with rheumatoid arthritis during the pandemic. Questions related to problems in studies similar to our study were prepared (Howren et al., 2020; Michaud et al., 2020; Sarzi-Puttini et al., 2020). This form was prepared to collect data on the changes in RA symptoms caused by the inability of patients to go to the hospital during the pandemic period. The form included questions about the problems that patients may have experienced due to the inability to access health care services and the questions are:

1. How did you cope with your illness during the pandemic period?
2. How did you cope with your pain during the pandemic period?
3. How did the pandemic period affect your treatment?
4. On what issues did you need health care professional help during the pandemic period?
5. In which life activities did you have difficulties during the pandemic period compared to the previous times?

The answers given by the patients were categorized by the researchers, and then statistical analyzes were made.

The categorization of the responses given by the patients was as follows:

- The answers given by patients to the question of their ability to manage their illness during the pandemic period: "I could not cope at all (unable to manage category)", "my pain got worse (not able to manage)", "I continued to use my medications (drug management category)".
- Answers given by the patients to the question of how you coped with your pain during the pandemic period: "I used my drugs (drug category only)", "I took medication as well as using complementary alternative drugs (drug + complementary alternative medicine category)", "I could not cope with my illness (not coping category)".
- The answers given by the patients to the question of how the pandemic period affected your treatment: "I think my treatment is badly affected (yes category)", "I think my treatment can continue (no category)".
- The answers given by the patients to the question of which subjects did you need health care professional help during the pandemic period: "I do not know how to do my personal hygiene (self-care category)", "I cannot administer my medications in injection form (injection category)", "I have doubts about how often I can take my pain medication (pain management category)".
- The answers given by the patients to the difficulties in life activities: "Difficulty in peeling fruit and chopping vegetables

with a knife (nutrition category)", "inability to cook (nutrition category)", "inability to tie a scarf (dressing category)", "difficulty in bathing (hygiene category)", "difficulty in making up (hygiene category)", "Difficulty shaving a beard (hygiene category)", "Difficulty cleaning the house (hygiene category) "and" Difficulty dusting at home (hygiene category) ".

Visual Analog Scale (VAS)

It is a form that includes numbers and is used for grading pain. The patient's pain is marked on a 10-cm ruler, with painlessness on one end and the most severe pain on the other. The score is a scale "0" showing that there is no pain and "10" points is the most severe pain possible. It is stated that VAS is more sensitive and reliable in measuring pain severity than other one-dimensional scales (Cline et al., 1992; Collins et al., 1997). With this scale, the pain intensity of the patients before the pandemic and the pain intensity during the pandemic period were measured. Patients were asked: "What was the severity of your pain before the pandemic? And what is the severity of your pain these days? Please mark your answers on the VAS.

Research Implementation

Patients who met the inclusion criteria and agreed to participate in the study were asked to fill in the data collection tools given to them. The forms were collected in the hospital environment by meeting face-to-face. The purpose of face-to-face data collection is to ensure that the data requested is filled in completely. All data collection forms were completed by same researcher. Data collection was carried out after the patient was examined by the physician. During the data collection process, COVID-19 precautions (wearing a mask, social distancing, hand sanitizer) were adhered to. Data collection was planned in such a way that it would not take a long time for patients to complete. While filling out of the data collection forms, patients were asked to remember problems they experienced with the strict restrictions within the scope of the COVID-19 measures. The patients remember their symptom status before the pandemic period and the changes in pain and life activity during the period of staying at home during the pandemic period.

The university hospital where the research was conducted is a hospital with clean-COVID areas. Clean-COVID areas are areas where patients with COVID contact or COVID-positive can never enter. When patients with RA come to the hospital, they can switch to clean clinics depending on whether they are at risk of COVID infection. Clinics such as the rheumatology clinic, orthopedic clinic, gynecology clinic, and pediatric clinic are defined as units where the entry and exit of patients and their relatives is restricted. Individuals coming to the hospital must have an application called "life fits into the house" on their mobile phones. When the person comes to the hospital, he/she has to show the application code to the attendant at the door. The attendant at the door scans this code with his smart device and can see whether the person is positive for COVID or whether they are in contact with a COVID-positive person. If there is a suspicious situation, the person is not admitted to clinics with clean-covid areas. This criterion is applied by the ministry of health in hospitals all over the country.

Ethical Aspect of the Research

For the research, permission was obtained from the non-clinical research ethics committee of a university with the number 2020/485. In addition, all the principles of the Helsinki Declaration were followed throughout the research. They also agree to participate in research that has written consent from all patients. It has

Table 1
Distribution of Some Demographic Characteristics of Patients (N = 119)

		n	%
Sex	Female	89	74.8
	Male	30	25.2
Education Status	Primary Education	59	49.6
	Secondary education	46	38.7
	High education	14	11.8
People with whom they live	Lives alone	25	21.0
	Lives with his family	94	79.0
Living place	City center	79	66.4
	Other	40	33.6
	Economic status	Income less than expenses	75
	Income is equal to expenses	27	22.7
	More than income	17	14.3
Age	$\bar{x} \pm SD$		
	48.53 ± 10.24		
Duration of illness (months)	$\bar{x} \pm SD$		
	69.63 ± 37.02		

SD = standard deviation

been reported that data will be collected face-to-face during the ethical permit application process.

Data Analysis

Data analysis was done with SPSS 23.0. Descriptive data are presented by number (n), mean, and percentage (%). For the comparison of the means, Wilcoxon Signed Ranks Test, Mann Whitney U test, Pearson χ^2 , Fisher's Exact Test table value was used.

Results

It was determined (Table 1) that the average age of the patients were 48.53 ± 10.24 and the average disease duration of the patients was 69.63 ± 37.02 months, 74.8% were female and 20.1% were male. It was also determined that the patients were mostly (38.7%) high school graduates, 72.3% lived with their family, 66.4% lived in the city center, and 63.0% had a bad economic situation.

In addition, Table 2 shows that 66.4% of patients had difficulty coping with their disease during the pandemic period, 10.9% could not manage their disease during the pandemic period, and 36.1% could not cope with their pain. It was determined that 53% of patients used only medication to cope with the pain and 10.1% used medication + complementary alternative medicine. Overall, 78.2% of patients stated that the pandemic period affected their disease negatively and 52.9% of them needed the support of a health care professional during the pandemic period; in specific, they needed support most (38.7%) for the administration of injectable drugs. While the average VAS value of patients before the pandemic period was 3.77 ± 1.40, the VAS value during the pandemic period was found to be 5.02 ± 1.57. It was determined that patients mainly experienced daily hygiene problems (46.2%), difficulty in wearing clothes (37.8%), and nutritional problems (24.4%) during the pandemic period compared with the period before the pandemic period.

VAS score, detailed in Table 3, shows that the average VAS score of patients during the pandemic period was higher than the average VAS score before the pandemic period, and there was a statistically significant difference between the VAS score averages between the 2 periods ($p = .000$). In addition, it was determined that the patients had pain-related hygiene problems ($p = .000$), dressing problems ($p = .000$), and nutritional problems ($p = .000$) during the pandemic period. Patients needed a health care professional for self-care ($p = .000$), administration of their own injection medication ($p = .000$), and pain management ($p = .000$) during the pandemic period.

Table 2
Distribution of the Conditions Experienced by Patients Related to Their Disease During the Pandemic Duration

		n	%
Difficulty in coping with the disease	Yes	79	66.4
	No	40	33.6
The ability to manage the disease	Unable to manage	13	10.9
	Manage with medication	106	89.1
Coping with pain	Medication + complementary alternative medicine	12	10.1
	Inability to cope	43	36.1
	Only medication	64	53.8
Poor treatment	Yes	93	78.2
	No	26	21.8
Needing health care professional support	Yes	63	52.9
	No	56	47.1
Issues requiring health care professional support	Self-care	21	17.6
	Injection administration	46	38.7
	Pain management	40	33.6
VAS before the pandemic	$\bar{x} \pm SD$		
	3.77 ± 1.40		
VAS during the pandemic	5.02 ± 1.57		
Having daily hygiene problems	55	46.2	
Having daily dressing problems	45	37.8	
Having daily nutritional problems	29	24.4	

SD = standard deviation.

Table 3
Distribution of VAS Values of Patients in Terms of Some Variables and Their Need for Nurse Support

	VAS during pandemic Mean ± SD	VAS before pandemic Mean ± SD	Test statistics		
VAS	5.02 ± 1.57	3.77 ± 1.40	Z ^a = -6.397 p = .000		
Having a hygiene problem	5.31 ± 1.46	3.96 ± 1.66	Z ^b = -4.373 p = .000		
Having a dressing problem	5.64 ± 1.51	3.69 ± 1.24	Z ^b = -5.511 p = .000		
Having nutritional problems	6.00 ± 1.81	3.93 ± 1.39	Z ^b = -4.426 p = .000		
Needing health care professional support during the pandemic period					
	Yes		X ²		
	No				
	n	%	p		
	n	%			
Self-care	Having problem	21	10.0	22.667 ^c	.000
	Has no problem	42	42.9		
	Total	63	52.9		
Self-injection	Having problem	46	73.0	66.654 ^c	.000
	Has no problem	17	27.0		
	Total	63	100		
Pain management	Having problem	40	63.5	53.558 ^d	.000
	Has no problem	23	36.5		
	Total	63	100		

^a Wilcoxon signed rank test.

^b Mann Whitney U test.

^c Pearson chi-square.

^d Fisher's exact test. VAS = visual analog scale.

Discussion

This study was conducted to determine the effects of the restrictions during the COVID-19 pandemic on disease management, pain, and function changes in patients with RA. The COVID-19 pandemic is severely impacting the management of a chronic disease such as RA (Favalli et al., 2020). Restrictive measures applied in most countries around the world have negative consequences on disease activity and quality of life, especially for patients with RA. Our research results add new information to the literature. This study showed that during the pandemic period, it was difficult for patients to cope with and manage their disease and its ensuing pain due to the inability to go to the hospital. In addition, we learned that patients (10.1%) made additional searches to cope with their pain. Costantino et al. (2021), in their study to determine risk factors and treatment compliance in French patients during the COVID-19 pandemic period, generally stated that

more than 30% of patients missed the dose of one of their drugs (Costantino et al., 2021). They stated that this change was mostly caused by the fear of contamination while buying drugs from the pharmacy. In addition, almost two-thirds of patients who disrupted their treatment reported an exacerbation of disease activity. Similarly, Michaud et al. (2020) stated that in the COVID-19 period patients are concerned about whether they will survive an infection, how their medication will affect their condition, and the impact of the pandemic on access to medicines and health care. A group of patients also reported that anxiety and stress worsen their arthritis symptoms (Michaud et al., 2020). Similarly, in our study, it was determined that patients who could not go to the hospital had increased pain and difficulty in coping with their illness; moreover, patients experienced difficulties in daily hygiene, and nutrition and clothing activities as a result of the increase in their pain. It was observed that disease symptoms worsened in patients with RA during the pandemic period.

It is established that chronic diseases require continuous health care professional support. Patients with RA should be encouraged to continue their treatment and care during the COVID-19 outbreak. Such an incentive can prevent disability, low quality of life, and patient burden that may occur due to disease exacerbation. In addition, discontinuation or disruption of ongoing treatments can adversely affect patients' quality of life (Mikuls et al., 2020). In the literature, chronic diseases affecting symptom management due to COVID-19 have been reported as diabetes, hypertension, and chronic obstructive pulmonary disease (Chudasama et al., 2020). No research has been found to determine the difficulties experienced by individuals with rheumatologic diseases owing to the inability to receive adequate care support during the pandemic process. In our study, it was determined that patients needed professional support in self-care, self-medication, and pain management during the pandemic period, contrary to previous periods. This need felt by patients proves how vital health care professionals are in the disease management of patients. Often as part of disease management, physicians and nurses provide patient education to support patient self-management which aims to increase the knowledge and skills of patients in managing their condition and improving or maintaining their own health and quality of life (Coster et al., 2018).

Limitations

The limitations of this study include conducting the study in a single hospital, collecting data during the COVID-19 pandemic period, and not using a self-care scale as a data collection form.

Conclusions

As a result of our research, we determined that patients with RA had increased pain during the pandemic period compared with before it and had difficulties in daily hygiene, and dressing and nutrition activities. During the pandemic period, it was found that some patients used alternative treatment options other than medication to cope with these difficulties. We think that experiencing nutritional, dressing, and hygiene problems during the pandemic period may have caused patients to need the support of a health care professional. It would be beneficial to carry out studies that include remote monitoring and attempts to increase movement activity at home to improve these results. In addition, we recommend planning studies to improve the symptoms of individuals with chronic diseases such as RA during the pandemic period. The care needs experienced by patients show how effective health care professionals are in disease management of patients. Often as part of disease management, physicians and nurses provide patient education to support patient self-management which aims to increase the knowledge and skills of patients in managing their condition and improving or maintaining their own health and quality of life.

Declaration of Competing Interest

None.

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