

## ORIGINAL ARTICLE

# Determination of Pain Severity and Affected Life Activities of Individuals with Chronic Pain during the COVID-19 Pandemic Period

## COVID-19 Pandemi Döneminde Kronik Ağrısı Olan Bireylerin Ağrı Şiddetinin ve Etkilenen Yaşam Aktivitelerinin Belirlenmesi

<sup>1</sup>Pınar Tunç Tuna , <sup>2</sup>İnci Kara , <sup>2</sup>Yasin Karabacak 

<sup>1</sup>Selçuk University, Akşehir Kadir Yallagöz Health School, Nursing Department, TÜRKİYE

<sup>2</sup>Selçuk University, Faculty of Medicine, Department of Anesthesiology, TÜRKİYE

### Correspondence

Pınar Tunç Tuna, Selçuk University - Akşehir Kadir Yallagöz Health School - Nursing Department - TÜRKİYE

E-Mail: [pinartunctuna@gmail.com](mailto:pinartunctuna@gmail.com)

### How to cite ?

Tunç Tuna P. , Kara İ. , Karabacak Y. Determination of Pain Severity and Affected Life Activities of Individuals with Chronic Pain during the COVID-19 Pandemic Period. Genel Tıp Dergisi. 2023; 33(5): 527-531.

### ABSTRACT

**Background/Aims:** The pandemic period can have negative effects on chronic pain. It is possible that these effects may affect life activities together with pain. The study was conducted to determine the change in pain intensity of individuals with chronic pain during the COVID-19 pandemic and the affected activities of daily living.

**Methods:** This descriptive study was conducted with 204 individuals with chronic pain. Data were collected with an Introductory Information Form, a questionnaire about life activities, and a Numerical Rating Scale. Data were analyzed with descriptive statistics, Pearson  $\chi^2$  and Mann-Whitney-U test.

**Results:** During the pandemic period, it was found that all patients with and without COVID-19 increased the severity of pain. Considering the change in life activities, patients who had COVID 19 during the pandemic period compared to those who did not; It was determined that they had problems in the parenting role, fulfilling their religious beliefs, gaining weight, hygiene activities, dressing-undressing, continuing to work and sexual desires/desires. It was determined that the pandemic period negatively affected the pain intensity of the patients. In addition, it was determined that having COVID 19 damaged many life activities of patients.

**Conclusions:** Considering that the duration of the pandemic is three years, it is thought that this process and being COVID 19 may have long-term effects on the pain levels and life activities of the patients.

**Keywords:** Chronic pain, COVID 19, life activities, pandemic

### Öz

**Amaç:** Pandemi döneminin kronik ağrılar üzerinde olumsuz etkileri olabiliyor. Bu etkilerin ağrı ile birlikte yaşam aktivitelerini etkilemesi olasıdır. Çalışma, kronik ağrısı olan bireylerin COVID-19 pandemisi sırasında ağrı şiddetindeki değişimi ve etkilenen günlük yaşam aktivitelerini belirlemek amacıyla yapılmıştır.

**Metot:** Tanımlayıcı tipte olan bu çalışma, kronik ağrısı olan 204 birey ile yapılmıştır. Veriler Tanıtıcı Bilgi Formu, yaşam aktiviteleri ile ilgili soru formu ve Sayısal Derecelendirme Ölçeği ile toplanmıştır. Veriler tanımlayıcı istatistikler, Pearson  $\chi^2$  ve Mann-Whitney-U testi ile analiz edildi.

**Bulgular:** Pandemi döneminde COVID-19 olan ve olmayan tüm hastalarda ağrı şiddetinin arttığı tespit edildi. Yaşam aktivitelerindeki değişime bakıldığında, pandemi döneminde COVID 19 geçiren hastaların olmayanlara göre; Ebeveynlik rolünde, dini inançlarını yerine getirmede, kilo almada, hijyen faaliyetlerinde, giyinme-soyunmada, işe devam etmede ve cinsel istek/isteklerde sorun yaşadıkları belirlendi. Pandemi döneminin hastaların ağrı şiddetini olumsuz etkilediği belirlendi. Ayrıca COVID 19' a sahip olanların hastaların birçok yaşam aktivitesine zarar verdiği belirlendi.

**Sonuç:** Pandemi süresinin üç yıl olduğu düşünüldüğünde bu sürecin ve COVID 19 olmanın hastaların ağrı düzeyleri ve yaşam aktiviteleri üzerinde uzun vadeli etkileri olabileceği düşünülmektedir.

**Anahtar Kelimeler:** Kronik ağrı, COVID 19, yaşam aktiviteleri, pandemi

### Introduction

Chronic pain (CP) is an important medical and socioeconomic problem affecting 13.5-47% of the general population (1). From a societal perspective, CP not only increases suffering but also affects daily activities (2). CP can be triggered by psychosocial stressors or organ-specific biological factors (3). It is thought that the persistence of stressors for months in the COVID-19 pandemic, which is a stressor, may increase the prevalence of CP (4). In addition, the COVID-19 pandemic has brought with it many new problems affecting CP (5). For example, patients may have problems receiving regular medical care during quarantine and in the following months (6, 7). Routine

clinics may be less accessible or closed. In addition, healthcare professionals may be directed to COVID-19-related activities, and waiting times may be extended, especially for medical illnesses that many consider not urgent, such as chronic pain. Patients may not want to go to the hospital with the thought of getting an infection and maybe late in taking their medications (4, 8). These stressors can exacerbate pain even in the absence of viral disease. The COVID-19 pandemic is thought to affect the lives and health of people worldwide with further impact in the future (4). The experience of living in this pandemic is disrupting daily life in all sectors, including those living with CP, those infected

with COVID-19, healthcare providers, and essential workers. The cost of this pandemic extends beyond physical illness with prolonged limited interpersonal contact, isolation, fear of illness, the uncertainty of the future, and significant psychosocial stressors. It is predicted that the pain levels of individuals who experience chronic pain during the COVID 19 period may change and this may negatively affect the daily life activities of the patients. Moreover, it is thought that the effects caused by COVID-19 may affect patients in the future. In this context, the research was conducted to determine the change in pain intensity of individuals with CP during the COVID-19 pandemic period and the affected activities of daily living.

### Research questions;

1. Is there a difference between the severity of pain experienced by individuals with chronic pain before and during the pandemic?
2. Is there a difference between the pain intensity of individuals with chronic pain who have and have not had COVID-19 during the pandemic period?
3. Is there a difference in the changes in daily living activities of individuals with chronic pain who have and do not have COVID-19 during the pandemic period?

### Material and Methods

#### Design

This research was conducted as a descriptive study to determine the severity of pain and affected life activities of individuals with chronic pain during the COVID-19 pandemic. The study was conducted according to Strengthening the Reporting of Observational studies in Epidemiology (STROBE) Guidelines. The study was conducted with patients who have been followed up with a diagnosis of chronic pain since 2010 in the Pain Polyclinic of a university hospital. To research; patients with chronic pain and the age range of 18-65 were included.

#### Data collection

A Numerical Rating Scale was used to determine the pain levels with a questionnaire prepared by the researchers, which included the descriptive characteristics and daily living activities of the patients.

Introductory information form and questions about life activities: The introductory information form was prepared by the researchers in line with the relevant literature. In the form, questions such as the sociodemographic characteristics of the patients, the status of having COVID 19, the duration of chronic pain, and the effect of the pandemic period on chronic pain were asked.

Questions about life activities were formed as open-ended in line with the relevant literature. The form was filled out according to patient statements. The questions in this form are derived from published research on the activities of living patients with CP during the pandemic. Questions about the problems

in studies similar to our study were prepared (4, 7, 9, 10). The answers given by the patients to the questions were categorized as follows.

The answers are given by the patients to the difficulties they experience in their life activities: neglecting to take care of children, not being able to cook, delaying cleaning the house "(parent role)", not wearing a headscarf, not paying attention to dressing "(dressing category)", reluctance to take a bath, delaying the need for a toilet, not wearing make-up, not having a beard shaved "(hygiene category)", not being able to go to the mosque due to staying at home, postponing religious practices at home "religious category".

Numerical Rating Scale; It is widely used to measure pain (11). On the scale, the absence of pain was determined as 0 points and the worst pain was determined as 10 points (12). In the study, the scale will be explained to the patients and they were asked to rate their pain level before the pandemic period and their current pain level.

#### Patient or Public Contribution

The research was carried out between January and April 2022. The numbers and contact information of the patients who applied to the pain outpatient clinic were obtained by the researchers. Consent for the study was obtained by calling the patients by phone. Data were collected from the consenting patients by telephone. A total of 1052 patient files were scanned. Data could not be collected because 14 patients died, 130 patients refused to participate in the study, 107 patients did not experience chronic pain, 189 patients could not be reached, 3 patients had a speech impediment, and 405 patients could not be reached from the registered number. As a result, the study was completed with 204 patients.

#### Ethical considerations

Permissions were obtained from the institution where the research was conducted (E-30292447-600-187284), the Non-Interventional Ethics Committee (2021/502), and the patients who agreed to participate in the study to conduct the study and collect data. All the principles of the Declaration of Helsinki were followed throughout the study.

#### Analysis

Data analysis was done with SPSS 23.0. Number (n), mean and percentage (%) were used in descriptive statistics in the research. Wilcoxon Signed Ranks Test was used in the dependent groups that did not fit the normal distribution, the Mann-Whitney test was used in the independent groups that did not fit the normal distribution, and "FisherExact" or "Pearson  $\chi^2$ " crosstabs were used to examine the relations between the two qualitative variables, according to the expected value levels.

#### Results

The mean age of the participants was 44.26 ( $\pm 9.31$ ) years and the mean duration of chronic pain was

**Table 1.** Some introductory characteristics of the patients and their Covid 19 status (n=204)

		n	%
Gender	Female	123	60.3
	Male	81	39.7
Educational Status	Primary education	54	26.5
	Secondary education	56	27.5
	University	94	46.0
Who Lives With	Lives alone	23	11.3
	Nuclear family	167	81.8
	Extended family	14	6.9
Living place	Town center	146	71.6
	Rural	11	5.4
Economical situation	District	47	23.0
	Income less than expenses	32	15.7
COVID-19 status	Income equals expense	137	67.2
	Income more than expenses	35	17.1
Age	Yes	108	52.9
	No	96	47.1
Time to experience chronic pain (years)	x $\bar{x}$ ±SD		
	44.26±9.31		

**Table 2.** Distribution of patients' information about chronic pain and covid-19 pandemic (n=204)

		n	%
Chronic pain	Backache	67	32.8
	Headache	44	21.6
	Joint pain	19	9.3
	Hand pain	13	6.4
	Knee pain	12	5.9
	Hip pain	10	4.9
	Unidentified pain	39	19.1
Pandemic makes it difficult to cope with pain	Yes	154	75.5
	No	50	24.5
Pandemic affected pain management?	Yes	134	65.7
	No	70	34.3
Patients have difficulty in doing with the pandemic period*	Parent role	113	55.4
	Religious beliefs	94	46.1
	Respiratory pattern	38	18.6
	Getting fat	86	42.2
	Hygiene (bathing - needing the toilet)	100	49.0
	Dressing - undressing	102	50.0
	Keep working	117	57.4
Sexual activity (desire-desire)	115	56.4	

\*Patients preferred more than one option.

**Table 3.** Comparison of patients' covid-19 transmission status and NDS scores before and during the pandemic

Covid Pass Status	Previous pandemic NRS	Now NRS	Test statistic, p
Yes	3.27±1.56	5.24±2.10	Z*=-8.255;p=0.000
No	4.50±2.14	5.77±2.20	Z*=-6.660;p=0.000
Test statistic, p	Z**=-4.055;p=0.000	Z**=-1.802;p=0.072	

\* Z: Wilcoxon Signed Ranks Test  
\*\*Z: Mann-Whitney Test

**Table 4.** Comparison of patients' cases of COVID 19 and affected life activities

		COVID -19 status				x <sup>2</sup>	p
		Yes		No			
Affected life activities during the pandemic period		n	%	n	%		
Parent role	Affected	67	59.3	46	40.7	4.101	0.043
	Not affected	41	45.1	50	54.9		
Religious beliefs	Affected	61	64.9	33	35.1	9.996	0.002
	Not affected	47	42.7	63	57.3		
Respiratory pattern	Affected	25	65.8	13	34.2	3.094	0.079
	Not affected	83	50.0	83	50.0		
Getting fat	Affected	63	73.3	23	26.7	24.628	0.000
	Not affected	45	38.1	73	61.9		
Hygiene (bathing - needing the toilet)	Affected	63	63	37	37	7.996	0.005
	Not affected	45	43.3	59	56.7		
Dressing - undressing	Affected	63	61.8	39	38.2	6.375	0.012
	Not affected	45	44.1	57	55.9		
Keep working	Affected	73	62.4	44	37.6	9.838	0.002
	Not affected	35	40.2	52	59.8		
Sexual activity (desire-desire)	Affected	76	66.1	39	33.9	18.284	0.000
	Not affected	32	36	57	64		

x<sup>2</sup>Pearson Ki Kare

9.83 (±6.05) years. It was determined that most of the participants were women (60.3%) and they were college graduates (46.0%). The majority of the participants are of nuclear family type (81.8%), live in the city center (71.6%) and their economic status is equal to income and expenditure (Table 1).

It was determined that the patients participating in the study experienced the most (32.8%) low back pain, and the majority of them could not cope with the pain during the pandemic (75.5%). During the pandemic, it was determined that the patients had problems, especially in continuing to work (57.4%), reluctance to sexual activity (56.4%), fulfilling the role of parents (55.4%), dressing - undressing (50.0%). In addition, it was determined that nearly half of the patients (49.0%) had problems maintaining their daily hygiene activities (Table 2).

The pain intensity of all patients with and without Covid-19 increased during the pandemic compared to the pre-pandemic periods. When the pain scores of the patients were examined according to the pre-pandemic period; It was determined that the pain scores of patients who had Covid-19 were lower than

those who did not have the disease. It was determined that there was no difference between the Covid 19 status of the patients and their pain scores during the pandemic period (Table 3).

The covid 19 status of the patients and the effects of their living activities were examined. Accordingly, patients who had COVID 19 during the pandemic period compared to those who did not; It has been determined that they have problems in the role of parent, fulfilling their religious beliefs, gaining weight, hygiene activities, dressing-undressing, being able to continue working, and sexual desires/desires. It was determined that the respiratory activity of the patients was not affected in this process (Table 4).

### Discussion

In this study, we set out to understand how the COVID-19 pandemic and the associated difficulties affect patients with CP in terms of their experiences of pain and living activities. According to our findings, patients with CP reported that the pandemic period made it difficult to cope with pain and that they could not manage their pain during this period. In addition, pre-pandemic pain levels of patients with COVID were lower than those without COVID. During the pandemic period, there was no difference between the two groups in terms of pain levels. Similarly, it is seen that pain levels in patients with and without COVID are higher than in the pre-pandemic period. These results show that COVID and the pandemic period increase pain in patients with CP. In addition, it was concluded that COVID has more negative effects on pain compared to the pandemic period. In a published review, it was predicted that the pandemic period may cause an increase in pain in patients with CP (4). In a different study, it was concluded that the COVID pandemic may cause an increase in orofacial pain (13). Our findings justify the predictions in this sense and contribute to the literature.

In our study, more than half of the patients reported that they had problems such as staying at work, sexual desire, and parental role. Similar to our findings, research evidence obtained from CP patients reflects that inability to manage pain leads to avoidance of activities of daily living and the impaired role-performance relationship (9). Similarly, some studies in the literature refer to the deteriorated parental relationships, sexual life, and continuation of work-life in individuals during the pandemic period (14, 15). Based on our data, we think that life activities problems in CP patients may persist during the long-term effects of the pandemic. For this reason, we think that these patients should be evaluated comprehensively in terms of pain management and improvement of life activities.

Surprisingly, in our study, it was determined that the affected life activities of patients with COVID, unlike those mentioned above, were especially for movement activity and religious life. KA patients with COVID have especially complained of not being able to fulfill their religious duties, gaining weight, changing their hygiene habits, and changing their clothes.

During the risky periods of the pandemic, a curfew was imposed especially on individuals with chronic diseases. For this reason, these patients stayed at home (16). Patients staying at home are expected to more easily perform both their religious practices and other movement activities, including hygiene. In this sense, our results are interesting in terms of literature. It is well known that adverse effects of activities of daily living are a common outcome following crises such as the COVID-19 pandemic (17). We attribute the difficulty in living activities in patients to the increase in the severity of chronic pain. Additionally, we associate these problems with psychological distress among participants, difficulties with obtaining medical care, maintaining daily routines (eg, wake-up time, mealtimes), and loss of social support (eg, particularly younger participants).

### Limitations

The limitations of this study are the inability of patients to remember exactly when they had COVID-19, the collection of data during the COVID-19 pandemic, the inability to use a specific scale for life activities, and the inability to measure the psychological problems of patients.

### Conclusion

First of all, the important contribution of our research; is the increased severity of pain in all patients with CP, whether they have COVID or not, during the pandemic period. In this case, it can be said that the pandemic period has increased the pain intensity of CP patients. The reason we made this comment is that the time of collection of research data (January-April 2022) is now the date when normal life starts exactly. Our secondary outcome is directed towards the affected life activities of CP patients. Accordingly, according to the patients who had COVID during the pandemic period, compared to those who did not; parental role, fulfilling their religious practices, loss of weight control, not being able to perform hygiene activities, being able to continue to work and having problems with sexual activity/desires/desires. As can be seen, the life activities of CP patients have been adversely affected during the pandemic period, which has been completed three years.

The effects of the pandemic are likely to continue in the coming years. The most striking thing here is that while patients with CP are expected to be able to comfortably do all their life activities during their stay at home, the opposite situation occurs. Patients with CP need to manage their affected life activities along with pain management. Longitudinal studies are also needed to provide a more detailed understanding of the impact of the pandemic on both the short- and long-term effects of coping with pain and life activities in patients with CP.

### Acknowledgement

The authors would like to extend their sincere thanks to anyone who contributed to this study.

### Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

### Author Contributions

Plan, design: PTT; Material, methods and data collection: PTT, IK, YK; Data analysis and comments: HIT, PTT; Writing and corrections: IK, YK, PTT.

### Funding

No financial aid was received for this research. The research is the authors own work.

### References

- Gaskin DJ, Richard P. The economic costs of pain in the United States. *The Journal of Pain*. 2012;13(8):715-24.
- Cimmino MA, Ferrone C, Cutolo M. Epidemiology of chronic musculoskeletal pain. *Best practice & research Clinical rheumatology*. 2011;25(2):173-83.
- Crettaz B, Marziniak M, Willeke P, Young P, Hellhammer D, Stumpf A, et al. Stress-induced allodynia—evidence of increased pain sensitivity in healthy humans and patients with chronic pain after experimentally induced psychosocial stress. *PLoS one*. 2013;8(8):e69460.
- Clauw DJ, Häuser W, Cohen SP, Fitzcharles M-A. Considering the potential for an increase in chronic pain after the COVID-19 pandemic. *Pain*. 2020;161(8):1694.
- Silva MJ, Kelly Z. The escalation of the opioid epidemic due to COVID-19 and resulting lessons about treatment alternatives. *Am J Manag Care*. 2020;26(7):e202-e4.
- Eccleston C, Blyth FM, Dear BF, Fisher EA, Keefe FJ, Lynch ME, et al. Managing patients with chronic pain during the COVID-19 outbreak: considerations for the rapid introduction of remotely supported (eHealth) pain management services. *Pain*. 2020;161(5):889.
- Tuna HI, Alparslan GB, Yilmaz S. Pain and Affected Symptoms of Patients with Rheumatoid Arthritis During COVID-19 Period. *Pain Management Nursing*. 2022;23(1):43-7.
- Gündüz N, Ahmet Ü, Atar EA. The impact of perceived social support on anxiety, depression and severity of pain and burnout among Turkish females with fibromyalgia. *Archives of rheumatology*. 2019;34(2):186.
- Fallon N, Brown C, Twiddy H, Brian E, Frank B, Nurmikko T, et al. Adverse effects of COVID-19-related lockdown on pain, physical activity and psychological well-being in people with chronic pain. *British Journal of Pain*. 2021;15(3):357-68.
- Spinelli M, Lionetti F, Setti A, Fasolo M. Parenting stress during the COVID-19 outbreak: Socioeconomic and environmental risk factors and implications for children emotion regulation. *Family process*. 2021;60(2):639-53.
- Griffin RS, Antoniak M, Mac PD, Kramskiy V, Waldman S, Mimno D. Imagined examples of painful experiences provided by chronic low back pain patients and attributed a pain numerical rating score. *Frontiers in neuroscience*. 2020;13:1331.
- Naylor JC, Kilts JD, Shampine LJ, Parke GJ, Wagner HR, Szabo ST, et al. Effect of pregnenolone vs placebo on self-reported chronic low back pain among US military veterans: A randomized clinical trial. *JAMA network open*. 2020;3(3):e200287-e.
- Emodi-Perlman A, Eli I, Smardz J, Uziel N, Wieckiewicz G, Gilon E, et al. Temporomandibular disorders and bruxism outbreak as a possible factor of orofacial pain worsening during the COVID-19 pandemic—concomitant research in two countries. *Journal of Clinical Medicine*. 2020;9(10):3250.
- Ballester-Arnal R, Nebot-García JE, Ruiz-Palomino E, Giménez-García C, Gil-Llario MD. "INSIDE" project on sexual health in Spain: sexual life during the lockdown caused by COVID-19. *Sexuality Research and Social Policy*. 2021;18(4):1023-41.
- Boland B, De Smet A, Palter R, Sanghvi A. Reimagining the office and work life after COVID-19. 2020.
- Theodorou A, Panno A, Carrus G, Carbone GA, Massullo C, Imperatori C. Stay home, stay safe, stay green: The role of gardening activities on mental health during the Covid-19 home confinement. *Urban Forestry & Urban Greening*. 2021;61:127091.
- Horesh D, Brown AD. Traumatic stress in the age of COVID-19: A call to close critical gaps and adapt to new realities. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2020;12(4):331.