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 independent 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 χ²” 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 (±9.31) years and the mean duration of chronic pain was...
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

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

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>123</td>
<td>60.3</td>
</tr>
<tr>
<td>Male</td>
<td>81</td>
<td>39.7</td>
</tr>
<tr>
<td>Educational Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary education</td>
<td>54</td>
<td>26.5</td>
</tr>
<tr>
<td>Secondary education</td>
<td>56</td>
<td>27.5</td>
</tr>
<tr>
<td>University</td>
<td>94</td>
<td>46.0</td>
</tr>
<tr>
<td>Who Lives With</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lives alone</td>
<td>23</td>
<td>11.3</td>
</tr>
<tr>
<td>Nuclear family</td>
<td>167</td>
<td>81.8</td>
</tr>
<tr>
<td>Extended family</td>
<td>14</td>
<td>6.9</td>
</tr>
<tr>
<td>Living place</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Town center</td>
<td>146</td>
<td>71.6</td>
</tr>
<tr>
<td>Rural</td>
<td>11</td>
<td>5.4</td>
</tr>
<tr>
<td>District</td>
<td>47</td>
<td>23.0</td>
</tr>
<tr>
<td>Economical situation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income less than expenses</td>
<td>32</td>
<td>15.7</td>
</tr>
<tr>
<td>Income equal expense</td>
<td>137</td>
<td>67.2</td>
</tr>
<tr>
<td>Income more than expenses</td>
<td>35</td>
<td>17.1</td>
</tr>
<tr>
<td>Time to experience chronic pain (years)</td>
<td>9.83±6.05</td>
<td></td>
</tr>
<tr>
<td>Table 2. Distribution of patients’ information about chronic pain and covid-19 pandemic (n=204)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chronic pain</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backache</td>
<td>67</td>
<td>32.8</td>
</tr>
<tr>
<td>Headache</td>
<td>44</td>
<td>21.6</td>
</tr>
<tr>
<td>Joint pain</td>
<td>19</td>
<td>9.3</td>
</tr>
<tr>
<td>Hand pain</td>
<td>13</td>
<td>6.4</td>
</tr>
<tr>
<td>Knee pain</td>
<td>12</td>
<td>5.9</td>
</tr>
<tr>
<td>Hip pain</td>
<td>10</td>
<td>4.9</td>
</tr>
<tr>
<td>Unidentified pain</td>
<td>39</td>
<td>19.1</td>
</tr>
<tr>
<td>Pandemic makes it difficult to cope with pain</td>
<td>Yes</td>
<td>154</td>
</tr>
<tr>
<td>Pandemic affected pain management</td>
<td>Yes</td>
<td>134</td>
</tr>
<tr>
<td>Pandemic affected pain management</td>
<td>No</td>
<td>70</td>
</tr>
<tr>
<td>Parent role</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>67</td>
<td>34.3</td>
</tr>
<tr>
<td>Not affected</td>
<td>48</td>
<td>29.2</td>
</tr>
<tr>
<td>Religious beliefs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>61</td>
<td>45.5</td>
</tr>
<tr>
<td>Not affected</td>
<td>47</td>
<td>34.5</td>
</tr>
<tr>
<td>Respiratory pattern</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>25</td>
<td>29.2</td>
</tr>
<tr>
<td>Not affected</td>
<td>50</td>
<td>70.8</td>
</tr>
<tr>
<td>Getting fat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>63</td>
<td>43.3</td>
</tr>
<tr>
<td>Not affected</td>
<td>40</td>
<td>56.7</td>
</tr>
<tr>
<td>Hygiene (bathing - needing the toilet)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>63</td>
<td>43.3</td>
</tr>
<tr>
<td>Not affected</td>
<td>43</td>
<td>56.7</td>
</tr>
<tr>
<td>Dressing - undressing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>63</td>
<td>43.3</td>
</tr>
<tr>
<td>Not affected</td>
<td>44</td>
<td>56.7</td>
</tr>
<tr>
<td>Keep working</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>63</td>
<td>43.3</td>
</tr>
<tr>
<td>Not affected</td>
<td>43</td>
<td>56.7</td>
</tr>
<tr>
<td>Sexual activity (desire-desire)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>63</td>
<td>43.3</td>
</tr>
<tr>
<td>Not affected</td>
<td>44</td>
<td>56.7</td>
</tr>
<tr>
<td>x²:Pearson Ki Kare</td>
<td>18.284</td>
<td>0.000</td>
</tr>
</tbody>
</table>

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).

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

<table>
<thead>
<tr>
<th>Covid Pass Status</th>
<th>Previous pandemic NRS</th>
<th>Now NRS</th>
<th>Test statistic, p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>3.27±1.56</td>
<td>5.24±2.10</td>
<td>Z*= -8.255,p=0.000</td>
</tr>
<tr>
<td>No</td>
<td>4.56±2.14</td>
<td>5.77±2.20</td>
<td>Z*= -6.680,p=0.000</td>
</tr>
</tbody>
</table>

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

## Table 4. Comparison of patients’ cases of COVID 19 and affected life activities

<table>
<thead>
<tr>
<th>COVID-19 status</th>
<th>Yes</th>
<th>No</th>
<th>x²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent role</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>67</td>
<td>46</td>
<td>40.7</td>
<td>4.101</td>
</tr>
<tr>
<td>Not affected</td>
<td>45</td>
<td>33</td>
<td>50.4</td>
<td>9.996</td>
</tr>
<tr>
<td>Religious beliefs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>61</td>
<td>64</td>
<td>35.1</td>
<td>3.094</td>
</tr>
<tr>
<td>Not affected</td>
<td>47</td>
<td>43</td>
<td>57.3</td>
<td>24.628</td>
</tr>
<tr>
<td>Respiratory pattern</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>25</td>
<td>15</td>
<td>39.4</td>
<td>7.996</td>
</tr>
<tr>
<td>Not affected</td>
<td>83</td>
<td>83</td>
<td>50.0</td>
<td>6.375</td>
</tr>
<tr>
<td>Getting fat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>63</td>
<td>63</td>
<td>57.3</td>
<td>9.838</td>
</tr>
<tr>
<td>Not affected</td>
<td>40</td>
<td>52</td>
<td>40.7</td>
<td>18.284</td>
</tr>
<tr>
<td>Hygiene (bathing - needing the toilet)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>63</td>
<td>63</td>
<td>57.3</td>
<td>7.996</td>
</tr>
<tr>
<td>Not affected</td>
<td>43</td>
<td>50</td>
<td>56.7</td>
<td>6.375</td>
</tr>
<tr>
<td>Dressing - undressing</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>63</td>
<td>63</td>
<td>57.3</td>
<td>9.838</td>
</tr>
<tr>
<td>Not affected</td>
<td>44</td>
<td>44</td>
<td>50.0</td>
<td>18.284</td>
</tr>
<tr>
<td>Keep working</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>73</td>
<td>62</td>
<td>44</td>
<td>24.628</td>
</tr>
<tr>
<td>Not affected</td>
<td>35</td>
<td>35</td>
<td>55.4</td>
<td>18.284</td>
</tr>
<tr>
<td>Sexual activity (desire-desire)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affected</td>
<td>76</td>
<td>66</td>
<td>39</td>
<td>18.284</td>
</tr>
<tr>
<td>Not affected</td>
<td>32</td>
<td>32</td>
<td>64</td>
<td>18.284</td>
</tr>
</tbody>
</table>
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.

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References