ORIGINAL ARTICLE

Prevalence of pain in adult population in Türkiye

Türkiye'de erişkin bireylerde ağrı prevalansı

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Summary

Objectives: The aim of this study is to determine the incidence and characteristics of pain in adults in Türkiye.

Methods: This cross-sectional study was carried out with 1391 participants in 28 provinces spread across seven demographic regions of Türkiye, between February 1 and March 31, 2021. The data were collected through the introductory and pain assessment information form prepared by the researchers and the online Google forms. SPSS 25.0 statistical program was used for data analysis.

Results: As a result of the analysis of the data obtained, it was found that the average age of the participants included in the study was 40.83±7.78 years, education level was 70.4% at most, and 80.9% was female at most. It was determined that 58.1% lived in the Marmara region and 41.8% lived in Istanbul, and 41.2% were private sector employees. It was determined that the pain prevalence of adults in Türkiye was 80.84% and 79.07% of them had pain in the last year. It was determined that the region with the most pain was the head and neck region with 37.88%.

Conclusion: According to the results of the research, the prevalence of adult pain is quite high in Türkiye. Despite the high prevalence of pain, the rate of preference for drug therapy to relieve pain is low and the preference for non-drug treatment methods is high.

Keywords: Adult; pain; prevalence; Türkiye.

Özet

Amaç: Ağrı, hem dünyada hem de ülkemizde oldukça yaygın ve giderek artan bir sağlık problemidir. Bu çalışmanın amacı, Türkiye'deki erişkinlerde ağrı görülme sıklığı ve özelliklerini belirlemektir.

Gereç ve Yöntem: Kesitsel tipteki bu araştırma, Türkiye'nin yedi demografik bölgesine dağılan 28 ilde 1.391 katılımcıyla 1 Şubat 2021–31 Mart 2021 tarihleri arasında yapıldı. Veriler araştırmacılar tarafından hazırlanan tanıtıcı ve ağrı değerlendirme bilgi formu ile çevrim içi Google formlar üzerinden toplandı. Veri analizi için SPSS 25,0 (Statistical Package for Social Sciences [Chicago, Illinois, USA]) istatistik programı kullanıldı. İstatistiksel testlerin anlamlılık düzeyi için p<0,05 değeri kabul edildi.

Bulgular: Elde edilen verilerin analizi sonucunda araştırmaya dahil edilen katılımcıların yaş ortalaması 40,83±7,78 yıl, eğitim durumunun en fazla %70,4 (n=979) ile lisans, cinsiyetin en fazla %80,9 (n=1.125) ile kadın olduğu bulundu. Katılımcıların %58,1'nin Marmara Bölgesi'nde ve %41,8'inin İstanbul ilinde yaşadığı, %41,2'sinin özel sektör çalışanı olduğu belirlendi. Türkiye'deki erişkinlerin ağrı prevalansının %80,84 olduğu ve %79,07'sinin son bir yıldır ağrı yaşadığı saptandı. Yaşanılan ağrı nedeniyle %10,28'inin işe gidemediği, en çok ağrı hissedilen bölgenin %37,88 ile baş ve boyun bölgesi olduğu belirlendi. Ağrının giderilmesi için %32,92'sinin ilaç tedavisi aldığı ve %44,32'sinin nonsteroid antienflamatuvar ilaç kullandığı, %33,97'sinin ilaç tedavisi dışında ağrının hafifletilmesi için masaj yöntemini kullandığı belirlendi.

Sonuç: Araştırmanın sonuçlarına göre, Türkiye'de erişkin ağrı prevalansı oldukça yüksektir. Yüksek ağrı prevalansına rağmen ağrıyı gidermek için ilaç tedavisini tercih etme oranı düşük, ilaç dışı tedavi yöntemlerinin tercih oranı yüksektir.

Anahtar sözcükler: Erişkin; ağrı; prevalans; Türkiye.

Introduction

Pain is a health problem, leading people to seek help from health-care professionals.[1] Pain is also one of the leading causes of hospitalization or admission to the emergency service for seeking medical help.[2] Epidemiological studies on pain investigate the extent of pain complaints according to age, gender, race, and social differences in the population. On the other hand, the prevalence explains its frequency in a specific time period. Hence, the results of prevalence studies vary to a great extent.[3] This difference may be attributed to the lack of an objective definition of pain, which

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is intrinsically subjective, and the different meanings and interpretations attributed to pain by researchers and evaluators who measure pain. The pain persists, regardless of the case and despite the increase in the knowledge of health-care professionals about pain in parallel with the advances in technology.[2]

Although pain is formed in a physiopathologically similar manner, the expression of pain is affected by the culture, gender, cause of pain, and the meaning and importance given to the pain by patients.[4] In this context, according to the literature, 64–90% of cancer patients suffer from moderate pain.[5] Chronic pain is a significant problem worldwide.[6,7] Post-operative pain, which is one of the most important causes of acute pain, is experienced by all patients who have undergone surgery, although with varying degrees of severity.[8–10] Although the reality of pain is a known fact, culture is influential in reporting pain.[4] Based on this fact, the present research seeks answers to the following research questions: What is the adult pain prevalence in Türkiye? What are the sociodemographic characteristics of people suffering from pain? Is the preferred method of treatment effective in relieving pain?

Material and Methods

This analytical and cross-sectional research was conducted to determine the incidence of pain and its characteristics in adults in Türkiye.

Research Population and Sample

The study population consists of one of the private schools providing education all over Türkiye. The research materials were submitted to the parents through the general directorate of the private school, and the study was completed with the parents who agreed to participate and signed the consent form. There were 31.564 parents registered in the private school. No sample selection method was performed in the study, and all parents who agreed to participate were included in the research. The study was conducted with 1391 participants in 28 provinces spread across seven demographic regions of Türkiye between February 1, and March 31, 2021.

Inclusion Criteria

Individuals in the 18–65 age group who signed the informed consent form and volunteered to participate in the study. Individuals with intellectual disabilities and individuals who did not give their consent were excluded from the research.

Data Collection Tools

In this study, the Introductory Information and Pain Assessment Form was used for data collection. Developed by the researchers, the Introductory Information and Pain Assessment Form collects information about the age, gender, occupation, education level, region and city of residence, presence of chronic disease, current health status, and treatment method, if any, history of surgery, analgesic use status, and history of medical diagnosis and treatment. The form consists of a total of 36 items, including multiple-choice and open-ended questions on analgesic use, conditions that increase or reduce pain, and non-pharmaceutical treatment methods.

Data Collection Method

Due to the quarantine and lock-down orders during the COVID-19 pandemic, and to reduce the random error of the population/sample size, the consent form and the data collection forms were submitted to the parents registered in a chain mail system of a private school, either through e-mail or through their children, and the forms filled out with the help of Google forms were collected in the same way for evaluation. Information on how to fill the data collection forms was given in the first part of the forms. In the study, the average response time to the items was found to be 5–7 min, approximately.

Ethical Aspect of the Research

During the planning phase of the research, approval for the research was obtained from the Scientific Research and Publication Ethics Committee of a foundation university (ethical approval no: January 11, E-20292139-050.01.04-424), and institutional permission was obtained from the school administration. Universal ethical principles, as well as scientific principles, were adhered to when conducting the study.

Limitations of the Research

The sample, which includes parents registered in the private school chain mail system, and the cross-sectional research design are the main limitations of the study.

Table 1. Descriptive characteristics of the participants (n=1391)

Descriptive characteristics	Number	%
Education		
Primary education	185	13.3
License	979	70.4
Graduate	227	16.3
Age group		
19–29	69	5.0
30–40	569	40.9
41–51	634	45.6
52–62	89	6.4
63 and above	28	2.1
Gender		
Female	1125	80.9
Male	266	19.1
Profession		
Public employee	372	26.7
Private sector	573	41.2
Home lady	273	19.6
Student	45	3.2
Not working	128	9.2
Living region		
Marmara	808	58.1
Aegean	169	12.1
Mediterranean	166	11.9
Black Sea	51	3.7
Eastern Anatolia	12	0.9
Southeast Anatolia	74	5.3
Central Anatolia	111	8.0
Living city		
İstanbul	581	41.8
İzmir	147	10.6
Antalya	109	7.8
Ankara	77	5.5
Kocaeli	74	5.3
Bursa	51	3.7
Gaziantep	41	2.9
Other (all other cities in Türkiye)	311	22.5

Analysis of the Data

SPSS 25.0 [the Statistical Package for the Social Sciences, (Chicago, Illinois, United States)] statistical program was used for data analysis. Mean, percentile distribution, and standard deviation values were calculated by descriptive statistical methods. First, the Kolmogorov–Smirnov test was used to determine whether the data have a normal distribution. Shapiro–Wilk test was also performed, and normally distributed data were analyzed by Pearson Chi-Square test for categorical variables, but Kolmogorov–Smirnov test was used for variables with expected frequencies <5.

Results

The mean age of the individuals participating in the study was 40.83±7.78 years, the level of higher education was 70.4% (n=979), and 80.9% (n=1125) of them was female. Of the participants, 58.1% was living in the Marmara region, of which 41.8% was living in Istanbul, and 41.2% of them were private-sector employees (Table 1).

Looking at the general health status of the individuals participating in the study, 67.57% had a good health status (n=940), 28.68% had a chronic disease, and 22.30% had a neurological disease, as a chronic disease. Of the participants, 50.75% had not received treatment yet, and 25.35% was found to admit health-care providers for migraine. It was found that 47.37% of them received painkillers in line with this treatment, and 45.97% received paracetamol. Of the participants, 63.91% had undergone surgical intervention, and 43.86% had neurosurgery (Table 2).

It was determined that 89.71% of the individuals participating in the study experienced pain throughout their lives, 80.84% had pain frequently, 52.98% had pain in last year, and 41.19% was experiencing pain for 1–5 years. Of those who experienced pain, 63.63% could not go to work for 1–3 days in a month, 37.88% had pain in the head-neck region mostly, a standing position was found to increase pain in 38.31% of the participants, and 41.40% was taking painkillers to relieve pain. It was found that 32.92% received drug therapy for pain relief, 44.32% received non-steroidal anti-inflammatory drugs, and 37.77% was taking a pain reliever once a month. Of the participants, 67.07% was resorting to non-pharmaceutical methods for pain relief, and 33.97% preferred massage, which was the most common practice (Table 3).

Following the descriptive statistics above, striking correlations were found together with the findings on the prevalence based on the variables. First, the relationship between the types of surgical intervention and the pain experienced by the participants was analyzed. The results are presented in Table 4.

Table 2. General health history of the participants (n=1391)

General health history	Number	%
What is your health status according to you?		
Good	940	67.57
Middle	439	31.56
Bad	12	0.86
Do you have any chronic diseases?		
Yes	399	28.68
No	992	71.31
Chronic diseases		
Neurological diseases	89	22.30
Circulatory system diseases	68	17.04
Internal diseases	78	19.54
Metabolic diseases	26	6.51
Musculoskeletal diseases	44	11.02
Skin diseases	57	14.28
Diseases of the reproductive system	7	1.75
Respiratory system diseases	30	7.51
What is your health status according to you?		
Good	940	67.57
Middle	439	31.56
Bad	12	0.86
Have you ever had any medical treatment?		
Yes	706	50.75
No	685	49.24
If yes, specify		
Migraine treatment	179	25.35
Cancer treatment	17	2.40
Surgical treatment	132	18.69
Treatment of muscle-joint-bone diseases	74	10.48
Infectious diseases	70	9.91
Hormone therapy	94	13.31
Psychiatric treatment	15	2.12
Other	125	17.70
Did you use painkillers in this treatment		
Yes	659	47.37
No	732	52.62
If yes, which drug(s) did you use/are you using?		
Anti-migraine drugs	154	23.36
Paracetamol	303	45.97
Non-steroid, anti-inflammatory	184	27.92
Anti-thyroid drugs	18	2.73
Do you have a previous surgical intervention?		
No	502	36,08
Yes	889	63,91
If yes, please describe your previous surgical intervention		
Cardiovascular surgery	42	4.72
Neurosurgery	390	43.86
Digestive system and general surgery	280	31.49
Lower upper extremity surgery	64	7.16
Urinary system surgery	74	8.32
Head and neck surgery	29	3.26
Chest surgery	10	1.12

Table 3. Pain experience and characteristics (n=1391)

Pain experience and characteristics	Number	%
Have you ever experienced pain in your life?		
Yes	1248	89.71
No	143	10.28
If yes, please specify the frequency.		
Rarely	114	9.13
Often	1009	80.84
Anytime	125	10.01
What is your pain experience in the past year?		
Yes	1100	79.07
No	291	20.92
Have you experienced constant pain in the past 6 months?		
Yes	737	52.98
No	654	47.01
Thinking about the past month, how often have you experienced pain?		
Once in a month	627	45.07
Every 15 Days	248	17.82
Once a week	223	16.03
Three to four days a week	179	12.86
Almost every day	114	8.19
How much has the pain bothered you in the past month?		
None	120	8.62
Some	372	26.74
Intermediate	576	41.40
Quite annoying	291	20.92
It was unbearable	32	2.30
Has your ability to go to work been affected by the pain you are experiencing?		
Yes	143	10.28
No	1248	89.71
If yes, please indicate the number of days you are absent from work in a month		
1–3 days	91	63.63
4–7 days	38	26.57
8–11 days	4	2.80
12 days and above	10	6.99
The area of the body with the most pain		
Lower extremity	354	25.44
Head-neck	527	37.88
Chest region	38	2.73
Abdomen and pelvic region	359	25.80
Upper extremity	113	8.12
How long have you been experiencing pain?		
0–1 years	291	20.92
1–5 years	573	41.19
5 years and above	527	37.88
In your opinion, what are the situations that increase your pain?		
Cold weather	42	3.01
Tiredness	123	8.84
Stress	292	20.99
Standing	533	38.31
Heavy workload	126	9.05
Tension	70	5.03
Exercising	205	14.73

Table 3 (cont). Pain experience and characteristics (n=1391)

Pain experience and characteristics	Number	%
In your opinion, what are the conditions that reduce your pain?		
Taking painkillers	576	41.40
Lying on hard floor	27	1.94
Massage	253	18.18
Sleep	263	18.90
Hot weather	14	1.0
Rest	258	18.54
Do you have any medication you use for your pain?		
Yes	458	32.92
No	933	67.07
If yes, what drug(s) have you used/are you using?		
Paracetamol	142	31
Non-steroidal anti-enflamatuar	203	14.59
Antimigren	113	8.12
If so, how often do you take pain relievers?		
Once in a month	173	37.77
Every 15 days	92	20.08
Once a week	116	23.32
Three to 4 days a week	48	10.48
Almost every day	29	6.33
How did the painkiller you use affect your pain?		
Increased my existing pain	4	0.87
Reduced my existing pain	392	85.58
Did not affect	62	13.53
Do you experience side effects from the painkillers you use?		
Yes	91	19.86
No	367	88.13
If yes (write what happened)		
Nausea	10	10.99
Drowsiness and sleepiness	19	20.87
Stomach ache	35	38.46
Indigestion and bloating	27	29.67
Does your pain decrease with pain relievers?		
Yes	407	88.86
No	51	11.13
Do you have any application to reduce your pain other than medication?		
Yes	933	67.07
No	458	32.93
If yes, specify		
Cold bag	217	23.25
Meditation	92	9.86
Deep breath	57	6.10
Listen to music	63	6.75
To linger (TV, radio, listening, reading)	42	4.50
To pray	40	4.28
Warm up	78	8.36
Relax	107	1.82
To walk	10	1.07
Massage	317	33.97

Table 4. The relationship between the type of surgical intervention and pain experience in the past year

| | Pain experience in the past year | | | | Total | |
| | Yes | | No | | | |
Type of surgical intervention	n	%	n	%	n	%
Cardiovascular surgery	23	76.7	7	23.3	30	100
Neurosurgery	304	77.9	86	22.1	390	100
Digestive system and general surgery	215	76.8	65	23.2	280	100
Lower upper extremity surgery	54	84.4	10	15.6	64	100
Urinary system surgery	64	86.5	10	13.5	74	100
Head and neck surgery	24	82.8	5	17.2	29	100
Chest surgery	9	90	1	10	10	100
Total	693	79	184	21	877	
Chi-square (χ2)	5.780					
Df	6					
p	0.448					
N	877					

Table 4 shows the relationship between the surgical interventions of the participants and their pain experiences. According to the findings, more than 75% of the surgical intervention participants experienced pain in the past year, regardless of the type of surgical intervention. The surgical group that experienced the most pain was chest surgery (nChstS=9; 90%), while the group that experienced the least pain was cardiovascular surgery (nCrdvsclrS=23; 76.7%). An independent Chi-square test was used to determine differences among variables. The Chi-square value is 5.780; p>0.05 was found to be insignificant. Accordingly, there is no significant relationship between the type of surgical intervention experienced by the participants and the pain they have experienced in the past year. Table 5 examines the relationship between participants' chronic diseases and the frequency of experiencing pain.

Another significant outcome regarding the prevalence of pain is that it negatively affects the quality of life of individuals. Individuals experiencing pain are sometimes under such a negative influence that they cannot go to work. For this reason, the relationship between the discomfort caused by the pain experienced by the participants in the past month and the number of days absent from work was examined. The findings are shown in Table 6.

When the participants feel unbearable pain and low discomfort, they do not go to work on average about 5 days a month. When they sense an intermediate or quite annoying level of discomfort, they are absent from work for 4 days a month. The Kolmogorov–Smirnov (K-S) normality test was performed for the priority absenteeism variable to determine whether the difference among the variables was significant. Since p-value of K-S was <0.05, it was determined that the data were not normally distributed. Therefore, Kruskal–Wallis was studied as a non-parametric multiple difference test. The Kruskal–Wallis test result was statistically significant (KW-H=8.732; p<0.033). According to this result, there is a significant difference between the discomfort experienced by the participants in their pain experiences and the duration of absenteeism.

Another critical issue examined in the study is examining the relationship between gender and factors that increase pain. The findings obtained from the analysis carried out for this purpose are summarized in Table 7.

The most critical finding in Table 7 is that stress is the most important factor that increases pain for both female and male (Female: 39%; Male: 34.3%). In this respect, the stress factor must be taken into account to prevent pain. While the heavy workload

Table 5. The relationship between participants' chronic diseases and the frequency of experi-encing pain

| | Frequency of experiencing pain | | | | | | Total | |
| | Rarely | | Often | | Anytime | | | |
	n	%	n	%	n	%	n	%
Chronic diseases types								
Neurologic	16	24.6	41	63.1	8	12.3	65	100
Circulatory system	26	65.0	12	30.0	2	5.0	40	100
Internal medicine	35	44.9	33	42.3	10	12.8	78	100
Metabolic	13	59.1	5	22.7	4	18.2	22	100
Nutritional	3	75.0	0	0	1	25.0	4	100
Musculoskeletal	13	25.5	26	51.0	12	23.5	51	100
Skin	14	70.0	6	30.0	0	0	20	100
Urogenital system	1	33.3	0	0	2	66.7	3	100
Respiratory system	17	42.5	21	52.5	2	5.0	40	100
Digestive system	2	13.3	9	60.0	4	26.7	15	100
Urological	2	25.0	6	75.0	0	0	8	100
Orthopedic	5	35.7	9	64.3	0	0	14	100
Blood	2	22.2	7	77.8	0	0	9	100
Immune system	5	45.5	6	54.5	0	0	11	100
Oncological	4	80	1	20	0	0	5	100
Endocrine	32	58.2	22	40.0	1	1.8	55	100
Total	190	43.2	204	46.4	46	10.5	440	100
Chi-square (χ^2)	92.244							
Df	1							
p	0.000							
N	1.391							

is the lowest factor influencing pain in men (4.1%), exercising is the lowest factor in increasing pain in female (2.0%). The Chi-square test value is 45.624; $p<0.01$ is statistically significant. According to this result, there is a significant difference between the gender of the participants and the factors of increasing pain. Hence, the relationship between pain-reducing factors and gender should also be examined. The findings obtained in this framework are shown in Table 8.

Table 8 shows that rest is the most crucial factor in reducing pain. About 40.7% of female and 48.5% males can cope with pain through rest. It is an important finding that rest is preferred as a more effective method of relieving pain than using painkillers. At the same time, it is seen that lying on a hard floor is the least preferred method for both gender groups as a method of reducing pain. Hence, the Chi-square test value is 26.640; $p<0.01$ is statistically significant.

Table 6. The relationship between the degree of the pain discomfort and the number of days absent from work in the last a month

The degree of discomfort of the pain	Mean of days absent from work	n	SD
Low	5.63	8	4.438
Intermediate	4.00	34	6.840
Quite annoying	4.00	47	4.139
Unbearable	5.13	8	4.155
Total	4.23	97	5.221
Kruskal Wallis H	8.732		
Df	3		
p	0.033		

SD: Standard deviation.

Among the individuals included in the study, the incidence of pain was higher in the female gender and those living in the Marmara region. The pain was

found to increase with an increase in age (p<0.05). It was found that there was a significant difference between the pain prevalence of individuals with or without any chronic disease (p<0.05).

Discussion

Pain is a part of numerous chronic conditions and emerges as a health problem on its own, affecting individuals, families, and society negatively. The Global Burden of Disease Study highlights that the high prominence of pain and pain-related diseases is the leading cause of incapacity and disease burden worldwide.[11] Although there are studies investigating the prevalence of pain in adults in Türkiye, studies on the characteristics of pain, and the effectiveness of medical diagnosis in reporting pain are limited. To develop treatment plans and prevention strategies, pain must be understood in the context of social, biological, psychological, and physical factors.[2]

According to the results obtained from the individuals participating in the research, the prevalence of adult pain in Türkiye is 80.84%, which is quite high. The literature states that the prevalence of pain in Türkiye is in the range of 64% to 93%.[4,12] The prevalence is the proportion of the atrisk population affected by a condition. Population estimates for the prevalence of pain vary according to case definition and screening methods, as well as time, place, and population. Research suggests that chronic pain affects 13–50% of adults in the UK. Of those who suffer chronic pain, 10.4–14.3% was found to have moderate-to-severe disabling chronic pain.[13,14] Although Caucasian individuals are the majority of the total population in one study in the United States, African-Americans (Odds Ratio [OR]=1.76, 95% Confidence interval [CI]=1.29–2.39), Native Americans (OR=2.86, 95% CI=1.39–5.90), and Asian Indian (OR=3.61.95% CI=0.85–15.31) had a higher prevalence of pain.[7] In one study conducted in Brazil, the prevalence of chronic pain was found as 39%.[15] Approximately 19.0% of adults in the United States reported persistent pain in 2010, but prevalence was varying significantly depending on the subgroups (Table 1). Older adults are much more likely to report persistent pain than younger adults, and adults in the 60–69 age group have the highest risk (AOR=4.0, 95% CI=2.7–5.8). Female is

Table 7. The relationship between gender and the factors that increase pain

| Gender | Causes of pain | | | | | | | | | | | | | | Total | |
| | Cold weather | | Tiredness | | Stress | | Standing | | Workload | | Tension | | Exercising | | | |
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Female	84	7.5	254	22.6	439	39.0	96	8.5	59	5.2	171	15.2	22	2.0	1125	100
Male	39	14.7	38	14.3	94	34.3	30	11.3	11	4.1	34	12.8	20	7.5	266	100
Total	123	8.8	292	21.0	533	38.3	126	9.1	70	5.0	205	14.7	42	3.0	1391	100
Chi-square (χ²)	45.624															
Df	6															
p	0.000															
n	1391															

Table 8. The relationship between gender and the pain-reducing factors

Gender	Pain-reducing factors														Total	
	Taking painkillers		Lying on hard floor		Massage		Sleeping		Hot weather		Rest					
	n	%	n	%	n	%	n	%	n	%	n	%			n	%
Female	140	33.7	5	1.2	42	10.1	55	13.3	4	1.0	169	40.7			415	100
Male	36	27.7	2	1.5	11	8.5	8	6.2	10	7.7	63	48.5			130	100
Total	176	32.3	7	1.3	53	9.7	63	11.6	14	2.6	232	42.6			545	100
Chi-Square (χ^2)	26.640															
Df	5															
p	0.000															
n	1391															

at slightly higher risk than men,[16] as well as the adults who did not graduate from high school. Similarly, in a 2016 study conducted in the United States, approximately 20% of adults were found to have chronic pain.[17] The Survey of Health, Aging, and Retirement in Europe analyzes data from 14 countries for two periods: 2004–2011 and 2013–2015. Trends are shown descriptively, using a multilevel modeling strategy for covariates, and modeled on a country-specific basis. Population-level pain prevalence is in the range of 30–60% depending on the country and year. Pain is more prevalent in females and generally increases with age. There is an increase in the prevalence over time, age, and other predictors. The prevalence was found to increase by an annual average of 2.2% between 2004 and 2011, and 5.8% between 2013 and 2015, in fully adjusted models.[18]

In a study conducted in the United States in 2016, approximately 20% of adults (about 50 million) was found to have chronic pain, and 8% (about 20 million) had chronic pain.[17] Similarly, in a 2001 study conducted with adults located in a region in Scotland, 14.1% was found to experience severe chronic pain; and in a 2001 Australian study, 13.5% was found to have some degree of impact on activities of daily living due to the chronic pain experienced.[19,20] Although this result is supported by the literature, the high incidence of pain can indicate that pain continues to be a social health problem. According to the results obtained through research, a prevalence of pain above 50% may indicate that factors such as social, cultural, and economic developments, changes in people's perception and interpretation of pain, and the increase in people's lifespan are effective in this regard. These results may also indicate that health-care professionals will encounter numerous complaints of pain.

According to our findings, the mean age of the participants included in the study was 40.83±7.78 years, the most common level of education was undergraduate education by 70.4% (n=979), and the female gender was dominant by 80.9% (n=1125). Of the participants, 58.1% was living in the Marmara region, of which 41.8% was living in Istanbul, and 41.2% of them was private-sector employees (Table 1). In most of the prevalence studies, the pain

has been reported to increase with female gender and advanced age.[19,21,22] Female experience higher levels of pain than men. Although there is insufficient information about the mechanisms behind the differences, there is some evidence for the role of estrogen and genetics, including gender-specific differences in the contribution of pain-related genes.[22,23] According to a study conducted in 2001 in Türkiye, female suffers more pain than male. Of them, those living in the city center and in the west of Türkiye were found to experience more pain. Moreover, the pain was found to increase in line with increasing age.[24] In their study of patients with low back pain, Ayvat et al.[3] found that 70.50% of the patients were primary school graduate at most, 29.50% was at least high school graduate, and the difference was statistically significant. In their study, Von Koff et al.[17] reported that the the prevalence of pain increases with increasing age, and that the prevalence is higher in those who had an undergraduate degree. Another study also showed that chronic pain was related to employment status: Chronic pain was present in 78.9% of the unemployed people, while only 39.8% of employed, and 42.4% of those voluntary/unpaid employed had chronic pain.[25] A study evaluating the absence from work due to pain reported that pain was associated with a higher risk of sick leave.[26] Our study findings are supported by the literature.

Considering the overall health status of the individuals participating in the study, 67.57% had a good health status (n=940), 28.68% had a chronic disease, and 22.30% had neurological diseases as chronic diseases. Of the participants, 50.75% had not received treatment until now, and 25.35% was found to admit health-care providers for migraine. It was found that 47.37% of them take painkillers in accordance with the treatment, and 45.97% take paracetamol. Of the participants, 63.91% had undergone surgical intervention, and 43.86% had neurosurgery (Table 2). It was determined that 89.71% of the individuals participating in the study experienced pain throughout their lives, 80.84% had pain frequently, 52.98% had pain in the last year, and 41.19% was experiencing pain for 1–5 years. Of the individuals who experienced pain, 63.63% were on sick leave for 1–3 days a month due to pain, head and neck pain was the most

common by 37.88%, 38.31% of the participants had his/her pain increased in standing up position, and 41.40% were taking painkillers. Painkillers were found to be effective in relieving participants' pain. It was found that 32.92% of the participants were on medication for pain relief, 44.32% were taking non-steroidal anti-inflammatory drugs, and 37.77% were taking painkiller at least once a month. Of the participants who experienced stomachache as an adverse effect, 67.07% was resorting to non-pharmaceutical methods for pain relief, and 33.97% preferred massage, which was the most common practice.

Post-surgical pain can also have a significant adverse effect on patients' quality of life, especially in cases such as survivors of breast cancer, live longer, but with chronic pain due to their treatment.[14] Kuru et al.[4] (2011) found that shoulder pain had the highest prevalence in terms of pain intensity, whereas the most common pain complaint was in the lumbar region. It was found that 33% of the individuals were taking non-steroidal anti-inflammatory and/or analgesic drugs to reduce pain, and 1.2% underwent surgical intervention. A study investigating the prevalence of pain reported that 96.7% of 91 patients with pain were taking drugs for pain relief, and 67.8% were taking analgesics daily.[27] Studies in the literature show that chronic pain is the most common in the lumbar region.[28–30] Another study reports that the most common complaints of pain originate from the waist, shoulder, and head regions and that low back, musculoskeletal, and headache are the three most common pain, usually in the form of aching and throbbing pain.[3] A study conducted in Spain reports that the majority of the patients (93.2%) took painkillers to reduce pain. Moreover, other techniques (physical rehabilitation, non-traditional medicine) were not preferred.[31] Studies investigating the prevalence of pain report that patients were taking analgesic drugs for relieving pain.[4,27] In a systematic review of multiple randomized controlled trials, observational studies, and case reports, which investigated opioid-related adverse events in patients who had undergone surgery, 31% of the patients had an adverse gastrointestinal event, most commonly nausea, vomiting, ileus, or constipation.[32] It is believed that the results obtained in our study are similar to that of the literature in this regard.

Conclusion

According to the study results, the prevalence of pain in adult patients is relatively high in Türkiye. The high prevalence and moderate severity of pain in this study may be due to ethnic and socioeconomic factors, which play a role in perceived pain. A multidisciplinary approach is required in the evaluations made for the treatment of pain, and its adverse effects. It is necessary to use pain scales with proven validity and reliability, without any variation depending on the patients, nurses, and physicians, which yield the correct reading in every use for standardized pain control procedures. Therefore, health-care professionals, who have an essential role in relieving or eliminating pain, are recommended to increase their knowledge about pain and the ways for coping with pain.

Ethics Committee Approval: The İstanbul Sabahattin Zaim University Clinical Research Ethics Committee granted approval for this study (date: 30.12.2020, number: E-20292139-050.01.04-424).

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