Original Article

Chronic pain and depression: A descriptive survey among adult primary health care centre patients

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Aim: Knowledge of chronic pain and its relationship to depression among primary health care patients in Turkey is inadequate. The aim of this study was to evaluate the frequency of chronic pain and its relationship to depression.

Materials and methods: In this descriptive study, data was collected with a questionnaire based on sociodemographic and pain-related characteristics, which was administered to a study population (n = 259) of primary care patients, 18-64 years old. The Visual Analogue Scale (VAS) (min-max = 0-10) and Beck Depression Inventory (BDI) (min-max = 0-63) were used for the assessment of pain severity and depression.

Results: Of the participants, 50.6% complained of chronic pain and 48.8% had only one type of chronic pain. According to the VAS, 64.9% of patients' chronic pain severity scores were between 4 and 8. Among those without chronic pain, 24.2% got a score equal to 17 or higher on the BDI (increased risk for depression), as compared with 38.3% of the patients who had chronic pain complaints (P = 0.015).

Conclusion: This study is one of the few that have investigated chronic pain and considered it as a serious health problem among primary health care patients in Turkey. Physicians' attention should be drawn to the effects of chronic pain, causing mental health disability, within the health system of Turkey.

Key words: Chronic pain, Visual Analogue Scale, depression, Beck Depression Inventory, primary health care

Kronik ağrı ve depresyon: Birinci basamak sağlık kuruluşunun yetişkin hastaları arasında tanımlayıcı bir çalışma

Amaç: Türkiye'de birinci basamak sağlık kuruluşunun yetişkin hastaları arasında kronik ağrı ve depresyon ilişkisine dair bilgi yetersizdir. Bu çalışmada kronik ağrının sıklığı ve depresyon ile ilişkisi değerlendirilmiştir.

Yöntem ve gereç: Bu tanımlayıcı çalışmada veriler 18-64 yaşları arasında birinci basamak hastası olan çalışma popülasyonunun (n = 259) sosyo-demografik ve ağrı ile ilgili özelliklerine yönelik bir anket formu ile toplanmıştır. Ağrının şiddeti ve depresyonun değerlendirilmesinde Görsel Eşdeğer Ölçek (en küçük - en büyük değer = 0-10) ve Beck Depresyon Envanteri (en küçük - en büyük değer = 0-63) kullanılmıştır.

Bulgular: Katılımcıların % 50,6'sının kronik ağrı yakınması vardır ve % 48,8'inin tek tip ağrısı bulunmaktadır. Görsel Eşdeğer Ölçeğe göre hastaların % 64,9'unun kronik ağrısının şiddeti 4 ve 8 arasındadır. Beck Depresyon Envanterinden 17 veya üzeri puan alanlar (depresyon için artmış risk) kronik ağrısı olmayanlar arasında % 24,2, kronik ağrısı olanlar arasında ise % 38,3'tür (P = 0,015).

Sonuç: Bu çalışma kronik ağrıyı araştıran az sayıdaki çalışmadan biridir ve Türkiye'de birinci basamağa başvuran kişiler arasında önemli bir sorun olarak değerlendirmektedir. Türkiye'nin sağlık sistemi içinde kronik ağrının ruh sağlığı üzerinde oluşturduğu özürlülüğe hekimlerin dikkatinin çekilmesi gerekmektedir.

Anahtar sözcükler: Kronik ağrı, Görsel Eşdeğer Ölçek, depresyon, Beck Depresyon Envanteri, birinci basamak sağlık hizmeti

Introduction

Chronic pain is an important public health problem with multidimensional characteristics that causes physical, mental, and economic problems, as well as social stress. International Association for the Study of Pain (IASP) defines chronic pain as "pain without apparent biological value that has persisted beyond the normal tissue healing time." Pain that lasts a minimum of 6 months is also defined as chronic pain (1,2). Chronic pain is a common reason for seeking medical care (3,4). In Finland, for example, 8.6% of visits to primary care physicians are due to chronic pain (5). According to Gureje et al., chronic pain rates were between 5.5% and 33.0% among primary health care centre patients (6). However, more than 40% to 50% of patients in routine practice settings fail to achieve adequate relief. Chronic pain and unremitting pain are associated with depression, anxiety, loss of independence, and interference with work and relationships (7,8).

It is known that depression is the most common psychiatric comorbidity associated with chronic pain. The relationship between depression and chronic pain is complex, and the prevalence of depressive disorders among chronic pain patients varies from 2% to 90%, depending upon the study methods used (9-11). Depression may develop secondarily or independently of chronic pain syndrome, or it may occur as the primary result of chronic pain. However, the important concern is that depression is common in patients who report chronic pain, and treatment of the depression must be undertaken by physicians.

Although several studies have been conducted worldwide for the evaluation of chronic pain and the prevalence of psychiatric conditions related to it, satisfactory information about this important public health problem in Turkey is inadequate. Turkey was one of the sites of a World Health Organization multicountry study conducted in 1998. The definition of chronic pain in that study was restricted; only severe pains were evaluated and a number of chronic pain cases were excluded (6).

The aim was to evaluate the frequency of chronic pain complaints and the severity, number, and localization of pains among the patients of two primary health care centers. Another aim of the study was to evaluate the depression status of the participants was, which evaluated with the Beck Depression Inventory (BDI) and the association between chronic pain and depression in the primary care setting to present this issue to the attention of service providers.

Materials and Methods

Sampling

In this descriptive study, data were collected from patients who attended 2 primary health care centres in Ankara. These health centres were located in 2 different urban neighbourhoods. During the study period (10 days), total outpatient flow was approximately 985 patients. Infants and children (471 individuals) and patients over 65 years old (149 individuals) were excluded. Patients who were between 18-64 years of age and agreed to participate were included in the study (259 patients). No sampling procedure was used. The refusal rate was 10.8%.

Data collection

Data were collected with a questionnaire composed of questions that investigated sociodemographic and chronic pain-related characteristics of the patients, used after pretesting. The Visual Analogue Scale (VAS) was used (ranging in colour from orange to dark blue and red, and scaled from 0 to 10) for the evaluation of severity of chronic pain. The VAS is one of the most often used scales to measure severity of chronic pain as a subjective complaint. Patients mark the line at the point they feel represents their perception of their current pain state. A value of 0 was accepted as no pain. Values of 1-3 were accepted as mild pain, values of 4-8 were accepted as moderate to severe pain, and values of 9 or 10 were accepted as very severe pain.

The Beck Depression Inventory (BDI) was used for the evaluation of depression. The Turkish version of the inventory was validated by Hisli et al. (12).

Data collection was conducted by face-to-face interviews with eligible participants after they agreed to participate in the study during their outpatient physical examinations.
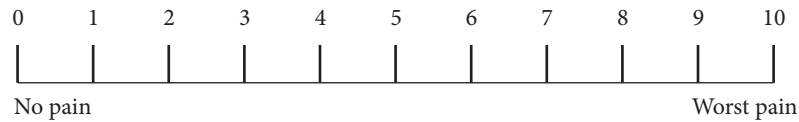
Figure. Visual analogue scale.

After completing the questionnaire interviews, physicians gave informative face-to-face explanations of the causes of pain, results of pain, and ways of tackling with pain, and pain-related brochures were distributed to the participants. Moreover, participants who had a pain problem and a score of 17 or higher on the BDI were offered treatment.

Data analysis

A group of 259 adults was included in the study. The SPSS 10.0 statistical program was used for data analysis. A cut-off point of 17 was chosen for this study for the BDI, as generally used in the Turkish version (12). Descriptive analyses were performed to determine the sociodemographic characteristics, frequency of pain, and pain-related characteristics of the study population. The chi-square test was used to examine the relationships between chronic pain and depression; $P < 0.05$ was accepted as statistically significant.

Results

Findings of the study indicated that 32.1% of the study group was 50-64 years of age (mean: 39.7 years, SD: ±13.4 years). Females made up 72.2% of the group. Of the study population, 29.7% were primary school graduates, 81.0% were then married, and 90.7% had health insurance (Table 1).

Table 1. Sociodemographic characteristics of the study population.

Characteristics (n = 259)	Number	Percentage
Age group		
18-29	76	29.3
30-39	54	20.8
40-49	46	17.8
50-64	83	32.1
Mean = 39.7 ± 13.4	Median = 38.0	Min-Max = 1-64
Gender		
Male	72	27.8
Female	187	72.2
Education		
Illiterate	13	5.0
Literate	10	3.9
Primary school	77	29.7
Middle school	35	13.5
High school	59	22.8
University	65	25.1
Marital status		
Currently married	210	81.0
Never married	29	11.2
Ever married	20	7.8
Health insurance		
Yes	235	90.7
No	24	9.3

Of the study group, 68.7% complained of some form of pain. For those who had pain, 50.6% had chronic pain complaints; 48.8% of the participants who had chronic pain complained of only 1 type of pain, 29.8% had 2 types of pain, and 21.4% had 3 or more types of pain. Results of the VAS showed that 64.9% of the participants with chronic pain complaints scored between 4 and 8 (moderate to severe pain) (Table 2).

As presented in Table 3, the percentage of participants with chronic pain significantly increased with age, and 66.3% in the 50-64 age group reported chronic pain. A statistically significant relationship was found between age and chronic pain (P < 0.001). Chronic pain complaints were significantly higher among women (55.6%) then men (37.5%), and there was a statistically significant relationship between gender and chronic pain in the study group (P = 0.009). Table 3 also shows that the rate of chronic pain was 20.7% among single patients, 51.4% among married patients, and 85.0% among divorced or widowed patients. A statistically significant relationship was found between marital status and chronic pain in the study group (P < 0.001). The difference was significant for all marital statuses in the study population.

Table 2. Some pain-related characteristics of the study population.

Characteristics	Number	Percentage
Pain complaint (n = 259)		
Yes	178	68.7
Acute	47	18.1
Chronic	131	50.6
No	81	31.3
Number of chronic pain locations (n = 131)		
1	64	48.8
2	39	29.8
3+	28	21.4
Severity of pain (VAS) (n = 131)		
Mild (1-3)	16	12.2
Moderate to severe (4-8)	85	64.9
Very severe, worst (9-10)	30	22.9

Table 3. Percentage distribution of chronic pain status by some sociodemographic characteristics.

Characteristics	Chronic Pain			
	Yes	No	Total	Analysis
Age groups				
18-29	27.6	72.4	29.3	
30-39	48.1	51.9	20.8	
40-49	63.0	37.0	17.8	
50-64	66.3	33.7	32.0	Chi-square = 27.167, P < 0.001
Gender				
Male	44.4	55.6	72.2	
Female	62.5	37.5	27.8	Chi-square = 6.824, P = 0.009
Marital status				
Never married	20.7	79.3	11.2	
Currently married	51.4	48.6	81.1	
Divorced or widowed	85.0	15.0	7.8	Chi-square = 27.167, P < 0.001

The proportion of the study group with chronic pain was also calculated after regrouping the participants according to their educational status, grouped as having received less than, equal to, or more than 8 years of schooling. The proportion of people with chronic pain who had 8 years or less of education was 54.1%, whereas those with more than 8 years were 46.8%. No statistically significant relationship was found between educational status and chronic pain (P = 0.240).

Of those in the study group, 24.2% without chronic pain and 38.2% with chronic pain scored 17 or above on the BDI. The difference between those 2 groups was statistically significant (P = 0.015). The relationship between number of chronic pains and BDI score was also evaluated. When BDI scores were analysed according to the number of chronic pains, 24.2% of patients without chronic pain had scores of 17 or above, 37.5% of patients with 1 chronic pain complaint had scores of 17 or above, 38.5% of the patients with 2 chronic pain complaints had scores of 17 or above, and 39.3% of the patients with 3 or more chronic pain complaints had scores of 17 or above. There was no statistically significant relationship in terms of the number of chronic pain complaints and having scores over the cut-off point of the BDI (P = 0.117). According to the VAS, 18.8% of participants whose chronic pain complaint was mild had scores greater than or equal to 17 on the BDI, 35.3% of participants whose pain severity was moderate scored

greater than or equal to 17 on the BDI, and 56.7% of participants whose pain severity was severe had scores greater than or equal to 17 on the BDI. There was a statistically significant relationship between pain severity and having scores greater than or equal to 17 on the BDI (P = 0.027) (Table 4).

Discussion

This descriptive study aimed to evaluate the relationship between chronic pain and depression in a group of patients, ages 18-64, who referred to 2 primary care settings located in Ankara, Turkey. In our study, the percentage of chronic pain was 50.6% among participants. According to the World Health Organization (WHO) Collaborative Study of Psychological Problems in General Health Care, conducted at 15 centres in 14 countries, the frequency of chronic pain among primary care patients was 21.5%. In that study, researchers also interviewed 400 patients in primary care centres in Turkey and found the chronic pain prevalence to be 28.9% (6). The difference between the prevalence of chronic pain found in the present study and in the WHO's study was probably due to the definition of chronic pain adopted in the WHO study. In our study, chronic pain was defined as current and persistent pain, present most of the time, such as for a period of 6 months or more during the previous year. However, in the WHO study, the definition of chronic pain was comparably

Table 4. Percentage distribution of Beck Depression Inventory scores by some chronic pain-related characteristics.

Characteristics	Beck Depression Inventory Scores			
	≤17	≥17	Total	Analysis
Chronic pain complaint (n = 259)				
No	75.8	24.2	49.4	
Yes	61.8	38.2	50.6	Chi-square = 5.812, P = 0.015
Number of chronic pain locations (n = 259)				
No pain	75.8	24.2	49.4	
1	62.5	37.5	24.7	
2	61.5	38.5	15.1	
3+	60.7	39.3	10.8	Chi-square = 5.897, P = 0.117
Severity of chronic pain (n = 131)				
Mild (1-3)	81.3	18.8	12.2	
Moderate to severe (4-8)	64.7	35.3	64.9	
Very severe, worst (9-10)	43.3	56.7	22.9	Chi-square = 7.204, P = 0.027

more restrictive. In the WHO study, patients were asked to report whether they had consulted either a physician or another health professional about their pain problem during their lifetime, used any medication for the pain more than once, or reported that the pain interfered with life or activities often (6). However, not having medication or consultation with a physician does not mean that pain is not a significant health problem, as was seen in our study, since more than 80% of the participants evaluated their pain as moderate or severe.

In Turkey, there is no population-based study to determine the prevalence of chronic pain in the entire population. Previous studies on pain in Turkey were mostly conducted in clinical settings for certain age groups, certain diseases, or certain locations of the body, and did not investigate the duration of pain. In one of the rare population-based studies, conducted in Eskişehir among rural adults, the prevalence of headache and back pain was 68.8% and 51.3%, respectively, during the previous year (13,14). In another population-based study conducted in a suburb of Ankara, the prevalence of chronic pain was 44.2% (15). These studies are not comparable to our study due to differences in aims and methodologies; therefore, the findings are also not comparable. However, the results demonstrate that chronic pain is quite common in Turkey.

It was found that the frequency of chronic pain increased with age in our study, which is a similar finding in a number of other studies in the literature. The frequency of pain due to a certain group of diseases that increase with age, such as joint pain that occurs more than twice as often among adults over 65 years of age as compared with young adults, is very common (16,17). The incidence of postherpetic neuralgia, a relatively uncommon event in young adults, increases considerably with age, becoming more common in those 75 years of age or older (18). Yet according to some other studies, pain perception shows a progressive decrease with increasing age (19). In addition to physiological changes, there are increases in the prevalence of concomitant diseases leading to painful conditions with age. Cancer, osteoarthritis, fractures, degenerative changes of the spine, peripheral vascular disease, peripheral neuropathy, stroke, polymyalgia rheumatica, gout,

and herpes zoster followed by postherpetic neuralgia are present with pain in the elderly with increasing frequency.

The present study found that women were more likely to experience chronic pain than men. A gender difference was also detected in the WHO Collaborative Study and others (6,20). On the other hand, some studies conducted in England showed no gender difference in terms of chronic pain prevalence (21).

Depression is a common mental health problem in Turkey, as well as worldwide. According to a mental health profile study of Turkey, the prevalence of major depression is 4.0%, and depression prevalence is higher among women than men, 5.4% versus 2.3% (22). The global yearly prevalence of depressive episodes is 5.8% for men and 5.9% for women, according to the Burden of Disease Study 2000 (23). In our study, although the proportion of patients who had BDI scores of 17 points or more was 31.3%, which was higher than what was reported in the profile study of Turkey, we know that depression prevalence, in general, is between 30% and 54% in clinical settings (23). The BDI is not a diagnostic test, but it has high validation and reliability scores, and because of the high cut-off point used in our study, it can be interpreted that the detected cases were more likely to be diagnosed as depressive cases by a physician. Of the participants with chronic pain, 52.7% had scores of 17 or greater on the BDI, and the participants with chronic pain had higher points than the group without pain. According to other epidemiological studies, the prevalence of depression among participants who had chronic pain was detected to be between 2% and 90% (9-11,24). In the WHO Collaborative Study, after adjusting for sociodemographic and morbidity-related determinants, they also determined that the odds ratio of psychological disorders among persons with chronic pain showed a 4-fold increase over those not affected by chronic pain (6,20).

The present study did not find any relationship between the number of pains and higher BDI scores. Controversially, there are studies showing the relationship between number of pains and depression (25). We thought that our study population was focused on their most severe pain and did not

mention the other pain types. In our study, we grouped the participants into 3 groups, according to their subjective evaluation of pain severity (mild, moderate, and severe) using the VAS. We found that when pain severity increased, the share of participants who had scores over the BDI cut-off point also increased. Similar results were also found for headaches in various studies. In a study by Boardman et al., an increase in severity and frequency of headaches resulted in stronger associations with sleep problems and psychological distress (26). In studies by Currie and Wang (25) and by Munoz et al. (27), it was found that greater severity of painful somatic symptoms was associated with increased depression severity. Depression is common among women and single persons, and is thought to be 4 times greater in people with chronic back pain than in the general population (27). According to Currie and Wang's logistic regression models, back pain emerged as the strongest predictor of major depression after adjusting for possible confounding factors, such as age, gender, marital status, and medical comorbidity (25).

The present study investigated the dimension of chronic pain among primary care patients and considered pain not as a symptom, but rather focused on it as an entire health problem regardless of site, severity, or type of treatment used. We discussed the damage caused by chronic pain to mental health in order to draw the attention of service providers.

As a result, this research showed that people who have chronic pain are at risk for depression, which is the fourth most common cause of disability in the world and will become the second by 2020 (23). This health problem causes serious disability and economic burden, and it consumes enormous amounts of health resources. Therefore, it is necessary to give priority to the diagnosis and treatment of pain, especially at the primary level. Based on our findings, it is recommended that the level of knowledge about chronic pain be assessed and in-service training be offered to primary health care providers on how to prevent, diagnose, cure, and give counselling to their patients on how to cope with pain. Moreover, the attention of service providers has to be drawn to the long-term destructive effects of chronic pain on mental health.

The present study has some limitations. Due to the methodology of our study, it was not possible to show the causal relationship between chronic pain and depression syndromes. Did patients suffer depression because of chronic pain problems, or did patients have high levels of depression that brought on chronic pain? Both scenarios are possible. In the cohort studies, it was found that patients suffering from chronic health problems were 2-7 times more likely to develop depression than healthy individuals (20). There are many other factors that trigger depression, but we did not investigate all of them, such as the other chronic health problems of the participants. It was found that an increase in the number of chronic conditions had a restrictive effect on the relationship between chronic pain and depression (25).

In conclusion, this study demonstrated the reciprocal relationship between chronic pain and depression. We would like to enlighten physicians, especially those working at the primary care level in Turkey, about the cooccurrence of chronic pain and depression and the importance of health-promoting behaviours. It is necessary to diagnose and treat chronic pain, with or without comorbid depression, since it causes disability, socioeconomic burdens, and increased use of health services. Further studies need to be conducted among physicians, especially those working in primary care, to determine the level of information that exists in clinical settings about the diagnosis and treatment of chronic pain and depression. Epidemiological studies that aim to determine the frequency and implications of chronic pain on different population groups are also needed.

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