The frequency of headache in Turkish patients with psychiatric disorders

Emel Koçer*, Yıldız Değirmenci**, Abdulkadir Koçer**,
Ahmet Ataoğlu***,

* Düzce University, Düzce Medical Faculty, Psychiatry Department, asistant doctor
** Assoc Prof., Düzce University, Düzce Medical Faculty, Neurology Department
*** Prof. Dr., Düzce University, Düzce Medical Faculty, Psychiatry Department

Emel Koçer, MD
Adress: Düzce University, Düzce Medical Faculty, Psychiatry Department, Düzce, Turkey.
E-mail: dremelkocer@yahoo.com

ABSTRACT

Purpose: The aim of this study was to evaluate the prevalence of headache in psychiatry clinics.

Method: Three hundred and seventy two consecutive patients aged between 18 and 82 (Mean: 36.4±13.2) years were interviewed with a semi-structured interview form. All patients were asked whether they had headache or not. If they answered 'yes, the differential diagnosis of headache was made.

Findings: Two-hundred and fifty- two patients (67.7%) did not complain any kind of headache. Migraine (13.7%, n=51) and tension type headaches (12.6%, n=47) were the most commonly seen headaches in psychiatry outpatient clinics. The frequency of migraine in subjects with anxiety disorder was higher than that in subjects with other psychiatric conditions including major depression. The frequency of tension type headache was higher in subjects with anxiety disorder in comparison to other psychiatric disorders, too. We found a statistically significant positive relationship between anxiety disorder or depression, and headache disorders ($p<0.00$). The tension type or chronic daily headache was seen at later ages but migraine in younger ages ($p<0.00$). The prevalence of migraine was similar in psychiatry clinics and in the general population of Turkey previously reported. The similar frequency of headache in psychiatry clinics is probably due to a comorbidity with psychiatric diseases.

Discussion and Conclusion: We concluded that it was important to ask standard questions about headache in the course of the anamnesis in patients with major depression and anxiety disorder.

Keywords: migraine, tension-type headache, anxiety, depression, psychiatric comorbidity

ÖZET

Psikiyatrik Bozukluğu Olan Türk Hastalarda Başağrısı Sıklığı

Amaç: Bu çalışmanın amacı psikiyatri kliniğinde başağrısı prevalansının değerlendirilmesidir.

Yöntem: Yaşları 18 ile 82 yıl arasında değişen (Ortalama: 36.4±13.2 yıl) ardı sıra 372 hasta yarı yapılandırılmış form ile sorgulandı. Tüm hastalara başağrıları olup olmadığı soruldu. 'Evet' cevabı verenlerin başağrısı ayırıcı tanıları yapıldı.

Bulgular: Hastaların 252'si (%67.7) hiç bir başağrısı çeşidi târif etmediler. Migren (%13.7, n=51) ve gerilim türü başağrısı (%12.6, n=47) psikiyatri polikliniklerinde en sık rastlanan başağrıları olarak bulundu. Majör depresyon dâhil olmak üzere diğer psikiyatrik durumlara kıyasla anksiyete bozukluğu olgularında migren daha sıktı. Diğer psikiyatrik durumlara kıyasla anksiyete bozukluğu olgularında gerilim türü başağrısı da daha sıktı. Anksiyete bozukluğu ya da depresyon varlığı ile başağrıları arasında istatsitiksel olarak anlamlı ve pozitif yönde bir ilişki bulduk ($p<0.00$). Gerilim türü başağrısı daha ileri yaşlarda gözlenirken migren daha genç yaşlarda görülür ($p<0.00$). Psikiyatri Polikliniği'ndeki migren prevalansı daha önce Türkiye'den bildirilmiş raporlara benzer biçimde bulundu.

Tartışma ve Sonuç: Benzer sıklıkta başağrısı varlığı psikiyatrik hastalıklarla başağrısı arasındaki

birlikteliğe bağlı olabilir. Anksiyete ve depresyon hastalarının öyküleri alınırken başağrısı hakkında standart soruların sorulmasının önemli olduğu kanısına vardık.
Anahtar Kelimeler: migren, gerilim türü başağrısı, anksiyete, depresyon, psikiyatrik komorbidite

INTRODUCTION

Headache is as symptom which can be defined as pain occurring as a result of stimulation of intracranial and extracranial tissues due to varying reasons (Lance 1998). Headaches with no known or demonstrative structural disease are called as "primary headaches". Migraine and tension type headache (TTH) are the most common types of primary headaches (Lipton et al. 1999). Migraine is a primary episodic headache disorder characterized by various combinations of neurological, gastrointestinal and autonomic changes. Its diagnosis is based on the retrospective reporting of headache characteristics and associated symptoms (Silberstein and Lipton 1994, Selby and Lance 1960). In contrast to the pulsatile, moderate-to-severe intensity of pain in migraine, TTH is characterized with dull, achy, non-pulsatile feeling of tightness, pressure or constriction, and is usually mild-to-moderate in severity (Selby and Lance 1960, Ket et al. 2004, Drummond 1987).

Migraine is comorbid with a number of neurological and psychiatric disorders including stroke, epilepsy, major depression and anxiety disorder (Lipton and Silberstein 1994). Although past epidemiological and clinical research has identified major depression as the most common psychiatric disorder associated with headache, Bonuccelli et al showed that the major associations were with current anxiety disorders, especially panic and related conditions (Marazziti et al 1995). Several population based studies have examined and found the co morbidity of headache and psychiatric disorders (Merikangas et al 1993, Breslau and Davis 1992, Breslau and Davis 1993, Puca et al. 1999). In addition, some studies have been reported that patients with migraine and tension-type headache exhibit psychiatric illnesses at a disproportionately higher rate than individuals with no history of recurrent headache (Breslau et al. 1994, Merikangas and Stevens 1997). Epidemiologic and clinical research studies showed that migraine and TTH were more common in patients with major depression, bipolar, and anxiety disorders (Puca et al. 1999, Guidetti and Gali 1998, Veri et al. 1998). Furthermore, patients with a combination of any type anxiety disorder and major depression are more likely to have migraine, compared with those with major depression or anxiety only (Zwart et al. 2003, Mongini et al. 2006).

In the highlight of these previous studies, the aim of this study is to evaluate the frequency of headache in a psychiatry outpatient clinic and to examine the association between psychiatric disorders and headache in relation to the psychiatric diagnosis of patients.

METHOD

The total number of the patients (405 patients above the age of 18) who visited the psychiatry outpatient clinic of Düzce Medical Faculty between September 2006 and January 2007 were recruited for initial evaluation. Among those, patients with psychotic disorders (n=18), dementia (n=4), schizophrenia (n=6), and paranoid disorders (n=5) were excluded from the study. Thus, the study population consisted of 372 consecutive patients aged between 18 and 82 (Mean: 36.4±13.2) years. After the written approvals of the patients to participate were gained, the psychiatric diagnosis was recorded initially as they were written by psychiatrist. Sociodemographic data and the psychiatric diagnosis of all enrolled patients were recorded. Then, the patients were divided into four groups according to DSM-IV criteria (American Psychiatric Association 2000). Patients with anxiety, panic disorders, obsessive-compulsive disorders, posttraumatic stress disorders, and social phobia were gathered into anxiety disorders. Patients with major major depression, dystimia, affective disorders, and bipolar disorders were classified as major depression. Somatoform disorders group consisted of the patients with conversion, and somatization disorders, and the last group was the personality disorders itself.

All patients were asked whether they had headache anytime in their life by a neurologist. If they say 'yes', the type of headache was evaluated and the diagnosis of headache was made on the basis of the criteria of the International Classification of Headache Disorders, 2nd Edition (Headache Classification Subcomittee of the International Headache Society 2004). Our survey did not include the questions about disability from headaches and the patients with secondary headache were excluded from the study.

Data were organized in an SPSS statistical package and statistical analyses were performed using frequency analysis, chi-square and student-t tests. In addition correlation analysis was performed.

Table 1: Sociodemographic variables of patients who applied to the psychiatry outpatient clinics.

Diagnosis Variable	Anxiety n (%)*	Depression Disorders n (%)	Somatoform Disorder n (%)	Personality n (%)	Total value n (%)	p
Age	36.35±12.37	36.79±14.49	36.10±8.33	29.00±20.30	36.40±13.22	NS
Gender						NS
Male	72(19.3)	49(13.2)	8(2.2)	4(1.1)	133(35.8)	
Female	125(33.6)	100(26.9)	12(3.2)	2(0.5)	239(64.2)	
Marital Status						***0.002***
Single	36(9.7)	37(9.9)	2(0.5)	5(1.4)	80(21.5)	
Married	150(40.3)	99(26.6)	16(4.3)	-	265(71.2)	
Widow	11(3)	13(3.5)	2(0.5)	1(0.3)	27(7.3)	
Educational level						NS
University	18(4.8)	24(6.5)	1(0.3)	1(0.3)	44(11.8)	
High school	88(23.7)	76(20.4)	11(2.9)	4(1.1)	179(48.1)	
Primary school	82(22)	40(10,8)	8(2.1)	-	130(34.9)	
Not educated	9(2.4)	9(2.4)	-	1(0.3)	19(5.1)	
Occupation						***0.001***
Officer	22(5.9)	14(3.8)	-	-	36(9.7)	
Retired	7(1.9)	17(4.6)	2(0.5)	1(0.3)	27(7.3)	
Worker	17(4.6)	5(1.3)	1(0.3)	-	23(6.2)	
Free trade	24(6.5)	9(2.4)	6(1.6)	1(0.3)	40(10.8)	
Student	17(4.6)	21(5.6)	1(0.3)	2(0.5)	41(11)	
House wife	103(27.7)	78(21)	10(2.7)	-	191(51.4)	
No occupation	7(1.9)	5(1.3)	-	2(0.5)	14(3.8)	
Risk factors						NS
Hypertension	27(7.3)	21(5.6)	3(0.8)	-	51(13.7)	
Diabetes Mellitus	7(1.9)	12(3.2)	1(0.3)	-	20(5.4)	
Coronary Artery Disease	2(0.5)	-	-	2(0.5)	2(0.5)	
Cerebrovascular Disease	3(0.8)	-	-	-	3(0.8)	
Hyperthyroidism	6(1.6)	4(1.1)	-	-	10(2.7)	
Hypothyroidism	15(4.0)	5(1.3)	1(0.3)	-	21(5.6)	
Having 2 or more risk	3(0.8)	5(1.4)	-	1(0.3)	9(2.5)	
No risk factor	134(36)	102(27.4)	15(4.1)	5(1.3)	256(68.8)	

* SD: Standart deviation, NS: Non-specific, n(%): Number of the patient (Percentage of the patient in each group)

FINDINGS

The 372 patients were enrolled the study. Among these patients 240 (64.5%) were female and 132 (35.5%) were men. Marital status evaluation demonstrated that 71.2% (n=265) of the patients were married, 21.5% (n=80) were single and 7.3% (n=27) were divorced or widow. The mean age of the patients was 36.40±13.22 (18-82) years. The sociodemographic variables of the patients were summarized in Table-1. The recorded psychiatric diagnosis of patients were major depression (n=156, 40.7%), anxiety disorders (n=122, 31.9%), dystimia (n=14, 3.7%), posttraumatic stress disorder (n=8, 2.1%), panic disorder (n=26, 6.8%), obsessive compulsive disorder (n=6, 1.6%), somatoform disorder (n=14, 3.7%), bipolar disorder (n=13, 3.4%), personality disorder (n=6, 1.6%), conversion (n=6, 1.6%), and social phobia (n=1, 0.3%). The categorized diagnosis of patients were revealed on Table.2

Two-hundred and fifty-two patients (67.7%) did not complain any kind of headache. Migraine (13.7%, n=51) and tension type headaches (12.6%, n=47) were the most commonly seen co morbid headaches in psychiatry outpatient clinics. Psychiatric disorders with migraine were found as generalized anxiety disorder (8.3%, n=34), major (3.8%, n=14), panic disorder (0.3%, n=1), dystimia (0.3%, n=1), and post-tra-

Table 2: The frequency and characteristics of headache present in the patients who applied to the psychiatry outpatient clinics.

Diagnosis / **Variable**	Anxiety n (%)*	Depression n (%)	Somatoform Disorders n (%)	Personality Disorder n (%)	Total n (%)	P value
Headache						
Not present	124(33.3)	102(27.4)	20(5.4)	6(1.6)	252(67.7)	***<0.01***
Present	73(19.7)	47(12.6)				
Type of headache						NS**
Migraine	36(9.7)	15(4.0)				
Tension headache	26(7.0)	21(5.6)				
Daily headache	8(2.2)	10(2.7)				
Analgesic abuse	3(0.8)	1(0.3)				
The number of migraine attacks per month	2.61±1.20	2.60±1.24				NS**
The duration of migraine attacks (hour)	4.39±1.73	4.47±1.59				NS**
The number of the migraine patients with aura						NS**
Visual	5	-				
Motor	1	-				
Sensorial	3	3				
Not Present	27	12				
The number of TTH attacks per month	6.12±1.73	5.62±1.39				NS**
The duration of TTH attacks (hour)	7.76±4.19	6.43±2.29				NS**

*Number of patients (The percentage of patients within all patients)
**NS:Non-specific. Only depression and anxiety patients were evaluated for statistical analysis

umatic stress disorder (0.3%, n=1). The frequency of migraine in subjects with anxiety disorder was higher than that in subjects with other psychiatric conditions including major depression. The frequencies of TTH in subjects with major depression and anxiety disorder were 5.6% and 7% respectively (Table. 2). Psychiatric disorders with TTH were found as generalized anxiety disorder (5.4%, n=20), major depression (5.4%, n=20), panic disorder (1.1%, n=4), dystimia (0.3%, n=1), obsessive-compulsive disorder (0.3%, n=1), and post-traumatic stress disorder (0.3%, n=1).

Of the chronic daily headache (CDH) subjects, 15 (83.4%) could be classified into either chronic tension-type headache (n=15, 83.4%) or chronic migraine (n=3, 16.6%). None of them fulfilled the criteria of hemicrania continua. Four subjects (20%) overused medications were not included in CDH class (Table. 2). CDH was seen only 4.8% of patients with diagnosis of generalized anxiety disorder (1.9%, n=7), major depression (2.7%, n=10), and obsessive-compulsive disorder (0.3%, n=1). We found a statistically significant positive relationship between anxiety disorder or major depression, and headache disorders (p<0.00). There were significant and positive correlations between headache, and age and marital status (p<0.01). We found that tension type or chronic daily headache was seen at later ages but migraine in younger ages (p<0.00).

The sociodemogarphic variables did not differ between anxiety disorder and major depression for both migraine and TTH as seen on Table.3.

DISCUSSION

The prevalence studies are extremely valuable for estimating the distribution of headaches. There are so-

Table 3: Sociodemographic variables of migraine and TTH patients who applied to the psychiatry outpatient clinics.

	Migraine Patients		TTH Patients	
Diagnosis / **Variable**	**Anxiety n (%)**	**Depression n (%)**	**Anxiety n (%)**	**Depression n (%)**
Age mean (year±SD)	33.33±10.90	30.60±8.48	44.73±9.76	44.95±12.15
p value	NS		NS	
Gender				
Male	14(38.9)	5(33.9)	12(46.2)	5(23.8)
Female	22(61.1)	10(66.7)	14(53.8)	16(76.2)
p value	NS		NS	
Marital Status				
Single	6(16.7)	5(33.3)	1(3.8)	1(4.8)
Married	29(80.6)	9(60.0)	23(88.5)	18(85.7)
Widow	1(2.8)	1(6.7)	2(7.7)	2(9.5)
p value	NS		NS	
Educational level				
University	4(11.1)	2(13.3)	3(11.5)	3(14.3)
High school	17(47.2)	10(66.7)	9(34.6)	9(42.9)
Primary school	14(38.9)	2(13.3)	12(46.2)	4(19)
Not educated	1(2.8)	1(6.7)	2(7.7)	5(23.8)
p value	NS		NS	
Occupation				
Officer	5(13.9)	4(26.7)	2(7.7)	-
Retired	-	1(6.7)	3(11.5)	2(9.5)
Worker	2(5.6)	1(6.7)	1(3.8)	1(4.8)
Free trade	8(22.2)	0(0)	3(11.5)	3(14.3)
Student	1(2.8)	3(20.0)	1(3.8)	1(4.8)
House wife	18(50.0)	6(40.0)	16(61.5)	14(66.7)
No occupation	2(5.6)	-	-	-
p value	NS		NS	
Risk factors				
Hypertension	3(8.3)	1(6.7)	7(26.9)	4(19)
Diabetes Mellitus	1(2.8)	1(6.7)	2(7.7)	6(28.7)
Coronary Artery Disease	1(2.8)	-	-	-
Cerebrovascular Disease	-	-	-	-
Hyperthyroidism	-	-	-	-
Hypothyroidism	1(2.8)	-	6(23.1)	-
Having 2 or more risk	-	-	1(3.8)	-
No risk factor	30(83.3)	13(86.7)	10(38.5)	11(52.4)
p value	NS		NS	

* SD: Standart deviation, NS: Non-specific, n(%): Number of the patient (Percentage of the patient in each group)

me differences of prevalence of headaches in countries, populations, and years in which the studies were conducted. The prevalence of migraine for life time period is about 13-16% (7-9% among men and 13.5-25% among women) in industrialized countries (Breslau et al 1991, Edmeads et al 1993, Steward et al 1994, Rasmussen et al 1991, Rasmussen 1995, Boru et al 2005, Wang et al. 2006, Stovner et al 2007). Migraine without aura is more common than migraine with aura. In previous studies, the lifetime prevalence of migraine with aura was 6%, whereas the prevalence of migraine without aura was 9%. Importantly, 1.2% of the population reported having both types of migraine (Rasmussen 1995). The overall prevalence of migraine is largely

consistent in industrialized countries, despite variances of culture and other sociodynamic factors.

It is a well-recognized clinical phenomenon that headache is frequently accompanied by physical and psychiatric complaints. The relationship between headache and major depression and/or anxiety disorders seems to be bidirectional and recent evidence suggests that such disorders may influence headache history in the long term (Doksat 2003, Bag et al 2005, Merikangas et al 1993, Beghi et al 2007). Several community studies and clinical studies aiming to reveal this association have confirmed the clinical impression that major depression and anxiety disorders were common in patients with headache (Juang et al 2000, Saygın et al 2005, Atasoy et al 2004, McWilliams et al 2004, Zwart et al 2003). Major depression and anxiety disorders were reported as the most common psychiatric disorders associated with headache, and this relation was identified with migraine, TTH and chronic daily headache (Rasmussen 1995, Juang et al 2000, Saygın et al 2005). Supporting these reported findings, migraine and TTH were the most common commonly seen co-morbid headaches in patients with psychiatric disorders, particularly with major depression and anxiety disorders in our study.

In a previous study, a link between migraine and anxiety disorder has been revealed. The co morbidity of migraine and anxiety disorder was reported as 9.1% (Juang et al 2000). Another study demonstrated that the association between migraine and anxiety disorders was even stronger than that for the affective disorders and major depression (Saygın et al 2005). The prevalence of migraine also differs according to populations and the frequency of migraine in Turkey is lower than that in previous reports with European and American populations (Boru et al 2005, Koseoglu et al. 2003). Overlapping with these results, our study revealed that the frequency of migraine was higher in subjects with anxiety disorder at a ratio of 9.7%. In addition, the prevalence of migraine in all patients included in this study was similar to the population studies conducted in Turkey (Boru et al 2005, Koseoglu et al 2003). There was a strong association between anxiety disorder and migraine. This finding supporting the previous data were compatible with the hypothesis that migraine, especially that with aura, panic disorder and some forms of depressive illness were part of the same spectrum Although previous reports investigated the higher incidence of major depression in TTH, migraine was the commonest head pain to be seen in our psychiatry practice (Serrano-Duenas 2000). It was difficult to discuss the timing of these psychiatric disorders e.g., does the migraine start first or the anxiety disorder/major depression? This was an important issue that should be addressed in critism of the present study.

According to previous reports, the lifetime prevalence of tension-type headache is about >46% of the population worldwide. For CDH, however, the lower life-time prevalence of 2.9% was based on only two studies. The prevalence of cluster headache (0.1%) and other primary headache forms are relatively low (Rasmussen et al 1991, Rasmussen 1995, Wang et al 2006). The estimated lifetime prevalence of TTH is 20.35% in young Turkish population (Key et al 2004). A previous report conducted in a neurology outpatient clinics revealed that almost all TTH patients complained with psychiatric disorders co-existed in Turkish population (Saygın et al 2005). In our study, we found the similar prevalence rate of migraine i.e. 13.7% but decreased prevalence rate of TTH i.e. 12.6% in comparison to previous population base studies conducted in Turkey (Key et al 2004, Boru et al 2005, Koseoglu et al 2003). CDH was not common in our sample similar to previous reports (Wang et al 2006). Chronic tension-type headache was the most common subtype; however, only 3 of patients with CDH had headaches with features of migraine. Considering these findings, we think that TTH patients were mostly diagnosed in the neurology outpatient clinics and the subclinical major depression co-existed with headache were treated with anti-depressants too. This may be a reason for the decreased frequency of TTH in psychiatry outpatient clinics.

Anxiety disorder and major depression also appear more common among individuals with TTH and chronic daily headache than among individuals without headache (Atasoy et al 2004). Saygın et al (2005) reported that the frequency of TTH coexisted with the depressive patients was 60% with the ratios of 56% and 4% in dystimic disorders and major depression respectively. In our study the frequency of TTH was found to be 5.6% and 7% in subjects with major depression and anxiety disorder respectively. The coexistence of TTH and major depression frequency was 5.4% but the coexistence of TTH and dystimia frequency in our patients was 0.3%. The lower frequency of TTH with dystimia may be related to the selected population base of the studies. The dystimia means the more chronic and subclinical depressive condition so the dystimic patients generally did not admitted to the psychiatry outpatient clinics may be a reason of low frequency of TTH patients with major depression. The higher frequency and the high number of non-reported cases of headache is in agreement with data reported in the literature about adults and suggests that it is important to ask standard questions about headache in the course of the anamnesis in psychiatry clinics (Donfrancesco et al 2000)

In our patients, all had a diagnosis of headache previously but there were problems in the evaluations and follow-up periods in all patients. Anxiety disorder and major depression showed relevant co morbidity with headache. Similar to Oelkers et al. we believed that a careful investigation and an adequate therapy of eventual headache co morbidity should be strongly recommended in psychiatry outpatient clinics (Oelkers-Ax and Resch 2002).

CONCLUSION

In conclusion, the prevalence of migraine was similar in and in the general population of Turkey previously reported. There was a strong association between anxiety disorder and migraine. On the other hand, TTH frequency was lower in psychiatry clinics in comparison to previous reports. Based on these findings we concluded that headache co morbidities are important among patients with psychiatric problems. The presence of migraine or tension type headache may be used to delineate anxiety disorder or major depression. Neglecting this association may result in failure of symptomatic and prophylactic treatment ultimately leading to loose the quality of life.

REFERENCES

American Psychiatric Association (2000) DSM-IV-TR: Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text revision. Washington, DC: American Psychiatric Association.

Atasoy N, Atasoy HT, Unal A, Konuk N, Atik L (2004) Psychiatric comorbidity in chronic daily headache (Article in Turkish). Klinik Psikiyatri; 7: 26-31.

Bag B, Hacihasanoglu R, Tufekci FG (2005) Examination of anxiety, hostility and psychiatric disorders in patients with migraine and tension-type headache. Int J Clin Pract; 59: 515-521.

Beghi E, Allais G, Cortelli P, D'Amico D, De Simone R, d'Onofrio F, Genco S, Manzoni GC, Moschiano F, Tonini MC, Torelli P, Quartaroli M, Roncolato M, Salvi S, Bussone G (2007) Headache and anxiety-depressive disorder comorbidity: the HADAS study. Neurol Sci; 28: 217-219.

Breslau N, Davis GC, Andreski P (1991) Migraine, psychiatric disorders, and suicide attempts: an epidemiologic study of young adults. Psychiatric Res; 37: 11-23.

Breslau N, Davis GC (1993) Migraine, physical and health psychiatric disorders: a prospective epidemiologic study of young adults. J Psychiatric Res; 27: 211-221.

Breslau N, Davis GC (1992) Migraine, major depression and panic disorder: a prospective epidemiologic study of young adults. Cephalalgia; 12: 85-89.

Breslau N, Merikangas K, Bowden CL (1994) Comorbidity of migraine and major affective disorders. Neurology; 44: 17-22.

Boru UT, Kocer A, Luleci A, Sur H, Tutkan H, Atli H (2005) Prevalence and characteristics of migraine in women of reproductive age in Istanbul, Turkey: a population based survey. Tohoku J Exp Med; 206: 51-59.

Doksat MK (2003) (Pain and Psychiatry) (Ağrı ve Psikiyatri). Bursa: Psikiyatri ve Sanat Yayınevi.

Donfrancesco R, La Rosa S, Romagnoli C, Lo Parrino R (2000) Headache in pediatric and neuropsychiatric primary care: a pilot study. Minerva Pediatr; 52: 281-288.

Drummond PD (1987) Scalp tenderness and sensitivity to pain in migraine and tension headache. Headache; 27: 45-50.

Edmeads J, Findlay H, Tugwell P, Pryse-Phillips W, Nelson RF, Murray TJ (1993) Impact of migraine and tension-type headache on life style, consulting behaviour, and medication use: a Canadian population survey. Can J Neurol Sci; 20: 131-137.

Guidetti V, Gali F (1998) Evolution of headache in childhood and adolescence: an 8-year follow-up. Cephalalgia; 18: 449-454.

Headache Classification Subcommittee of the International Headache Society (2004) The International Classification of Headache Disorders, 2nd Edition. Cephalalgia; 24: 8-160.

Juang KD, Wang SJ, Fuh JL, Lu SR, Su TP (2000) Comorbidity of depressive and anxiety disorders in chronic daily headache and its subtypes. Headache; 40: 818-823.

Key FN, Donmez S, Tuzun U (2004) Epidemiological and clinical characteristics with psychosocial aspects of tension-type headache in Turkish college students. Cephalalgia; 24: 669-674.

Koseoglu E, Nacar M, Talaslioglu A, Cetinkaya F (2003) Epidemiological and clinical characteristics of migraine and tension type headache in 1146 females in Kayseri, Turkey. Cephalalgia; 23: 381-388.

Lance JW (1998) Mechanism and management of headache. Oxford: BH, 158-175.

Lipton RB, Goadsby P, Silberstein SD (1999) Classification and epidemiology of headache. Clin Cornerstone; 1: 1-10.

Lipton RB, Silberstein SD (1994) Why study the comorbidity of migraine. Neurology; 44: 4-5.

Marazziti D, Toni C, Pedri S, Bonuccelli U, Pavese N, Nuti A, Muratorio A, Cassano GB, Akiskal HS (1995) Headache, panic disorder and depression: comorbidity or a spectrum? Neuropsychobiology; 31: 125-129.

McWilliams LA, Goodwin RD, Cox BJ (2004) Depression and anxiety associated with three pain conditions: results from a nationally representative sample. Pain; 111: 77-83.

Merikangas KR, Merikangas JR, Angst J (1993) Headache syndromes and psychiatric disorders: association and familial transmission. J Psychiatr Res; 27: 197-210.

Merikangas KR, Stevens DE (1997) Comorbidity of migraine and psychiatric disorders. Neurol Clin; 15: 115-123.

Mongini F, Rota E, Deregibus A, Ferrero L, Migliaretti G, Cavallo F, Mongini T, Novello A (2006) Accompanying symptoms and psychiatric comorbidity in migraine and tension-type headache patients. J Psychosomatic Res; 61: 447-441.

Oelkers-Ax R, Resch F (2002) Headache in children: also a problem for child and adolescent psychiatry? Pathogenesis, comorbidity, therapy. Z Kinder Jugendpsychiatr Psychother; 30: 281-293.

Puca F, Genco S, Prudenzano MP (1999) Psychiatric comorbidity and psychosocial stress in patients with tension-type headache from headache centers in Italy. The Italian Colloborative Group for the Study of Psychopathological Factors in Primary Headaches. Cephalalgia; 19: 159-164.

Rasmussen BK (1995) Epidemiology of headache. Cephalagia; 15: 45-68.

Rasmussen BK, Jensen R, Schroll M, Olesen J (1991) Epidemiology of headache in a general population-a prevalence study. J Clin Epidemiol; 44: 1147-1157.

Saygın MZ, Ozturk E, Kocer A, Luleci A, Calıskan M (2005) Migraine without aura and episodic tension-type headache: psychiatric comorbidity and investigation of other differentiating characteristics (article in Turkish). Tıp Araştırmaları Dergisi, 3: 22-26.

Selby G, Lance JW (1960) Observations on 500 cases of migraine and allied vascular headache. J Neurol Neurosurg Psychiatry; 23: 23-32.

Serrano-Duenas, M. (2000) Chronic tension-type headache and depression. Rev Neurol; 30: 822-826.

Silberstein SD, Lipton RB (1994) Overview of diagnosis and treatment of migraine. Neurology; 44: 6-16.

Steward WF, Schetcher A, Rasmussen BK (1994) Migraine prevalence. A review of population-based studies. Neurology; 44: 17-23.

Stovner LJ, Hagen K, Jensen R, Katsarava Z, Lipton RB, Scher AI, Steiner TJ, Zwart JA (2007) The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia; 27: 193–210.

Wang SJ, Fuh JL, Lu SR, Juang KD (2006) Chronic daily headache in adolescents: prevalence, impact, and medication overuse. Neurology; 66, 193-197.

Veri AP, Proietti Cecchini A, Gali C, Granella F, Sandrini G, Nappi G (1998) Psychiatric comorbidity in chronic daily headache. Cephalalgia; 18: 45-49.

Zwart JA, Dyb G, Hagen K, Odegard KJ, Dahl AA, Bovim G, Stovner LJ (2003) Depression and anxiety disorders associated with headache frequency. The Nord-Trondelag Health Study. Eur J Neurol; 10: 147-152.