

Epidemiological and clinical characteristics of headache in university students

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Abstract

Objective: Epidemiological studies regarding headache are abundant in developed countries; however, the data in developing countries are scarce. This study aims to detect the prevalence and clinical features of headache in Gaziosmanpasa University students in Tokat, Turkey.

Patients and methods: 2168 subjects were selected with randomized stratified sampling, and 92.5% of them participated in the study (2023 students). Two neurologists from our medical faculty interviewed and examined the students with headache. Assessment was done according to The International Classification of Headache Disorders, 2nd edition.

Results: In our study, 22.64% of the students had tension-type headache (TTH), 17.89% had migraine headache, 0.29% TTH plus migraine headache, 0.20% had cluster and variants type of headache. Migraine type of headache was more common in females than in males ($p = 0.0001$); however, no significant difference was present between males and females who had migraine with aura and tension-type headache.

Discussion: The clinical features of tension-type headache and migraine in our university students were similar to the ones of general population and to the studies conducted on university students.

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1. Introduction

Headache is one of the most common complaints encountered in pediatric and adult neurology clinics. Vast majority of the headaches are migraine and tension-type. While they can be mild and at infrequent intervals, they can also be severe and enduring. Severe and frequent headache limits the daily activities of life, decreases the quality of life and can result in the loss of productivity.

Epidemiological studies of headache help us to understand the frequency and nature of the headache and the factors that influence it. They help us to improve our knowledge about the mechanism of headache, its clinical features and management protocols. It will also support us with knowledge about functional disability caused by headache, its health cost and associated economical burden [1].

Epidemiological studies regarding headache are abundant in developed countries; however the data in developing countries are scarce. Also, the data encountered from the studies both in developing and in underdeveloped countries are very different in nature. These differences can be attributed to the methodology performed, to the age and gender of the study population, or to ethnical and cultural features of society or to the combination of these factors. This variability necessitates the need for headache prevalence studies in selected populations. We have assessed the prevalence and clinical features of headache in Gaziosmanpasa University students in Tokat, Turkey. The first study is investigated according to the second edition criteria and contains all primary headaches.

2. Materials and methods

The study was conducted on students attending to 24 departments of 6 faculties at Gaziosmanpasa University in Tokat, Turkey. A total of 7964 students (3020 female and

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4944 male) are studying at this University. 2168 subjects were selected with randomized stratified sampling, and 92.5% of them participated in the study (2023 students). Students who were selected for this study, who had any kind of headache. In the first step, a socio-demographical form regarding their department, age, gender, the number of their siblings, their parents' profession were handed out. They were also questioned about their headache complaints. In the second step, two neurologists from our medical faculty interviewed and examined the students with headache. Assessment was done using International Headache Society (IHS) 2004 criteria [2]. While the clinical properties of headache were studied, patients diagnosed with strict and probable migraine were pooled for the present analysis. Recent epidemiology data show that probable migraine greatly resembles strict migraine and suggest that both types of migraine are parts of the same spectrum of disease and differ more in degree than in kind [3,4]. Patients diagnosed with TTH and migraine headache were not evaluated for this present analysis. Because the patients with TTH and migraine headache ($n=6$) and with cluster headache ($n=4$) had a very small of observed counts and so disturbed homogeneity. Thus they were not evaluated as a separate group. Moreover, as patients with TTH and migraine headache had characteristics peculiar to both groups, they were not included in TTH groups, either.

During this interview, students were questioned about the beginning age of the headache, its severity, nature and about its duration. They were also asked to describe the factors that aggravated or diminished the headache and the symptoms that accompanied it, and whether they did or did not take medications. In 12 students with chronic headache the use of potential drugs of abuse was present.

2.1. Statistical analysis

The data was analyzed with SPSS 10.0 (Statistical Package for the Social Sciences) program. Descriptive statistics, Chi-square test, *t*-test for unpaired samples and two proportions of independent samples were used for statistical analysis.

3. Results

A total of 2023 students, 1070 males (52.89%) and 953 females (47.11%) participated in the study. The age range of the students was between 17 and 38 (mean 21.16 ± 2.03). The beginning age of the headache ranged from 5 to 23 (mean 14.37 ± 3.63).

Each of the 2023 students was assessed according to IHS 2004 criteria. The clinical features of the subjects with headache are illustrated in Table 1. Migraine type of headache was more common in females than in males ($p=0.0001$); however, no significant difference was present in between males and females who had migraine with aura ($p=0.1444$) and tension-type headache ($p=0.3473$).

Table 1
Clinical features of subjects with headache

	Male, <i>n</i> = 1070	Female, <i>n</i> = 953
Migraine	138	224
With aura	16	23
Without aura	48	106
Chronic	2	7
Probable with aura	10	15
Probable without aura	56	61
Probable chronic	6	12
Tension-type headache (TTH)	239	219
Infrequent episodic	60	46
Frequent episodic	136	130
Chronic	5	10
Probable infrequent episodic	10	15
Probable frequent episodic	27	17
Probable chronic	1	1
TTH + migraine	2	4
Cluster and variant type	2	2

Frequency, quality and duration of headaches are shown in Table 2. Factors that trigger headache are shown in Table 3. When the headaches were evaluated according to the department of study the difference was not found to be statistically significant ($p=0.341$).

4. Discussion

The data obtained from prevalence studies of headache are variable. The variable nature of the data extracted from the headache prevalence studies may be attributed to different interview methodologies used, like face-to-face [5–12] or interview with the help of a telephone call [13–16]. Besides these factors, age [6,10,15,17,18], gender [19], cultural background [20] and race [14] of the population analyzed or the combination of these effects may influence the results extracted.

Headache prevalence of the selected populations can be different from the general population. This study was conducted on university students who we believe constitute a selected population. Reported studies analyzing headache characteristics in university students were usually conducted on medical faculty students [9,21–24]. However, prevalence studies in other faculties are scarce [25,26]. We performed this study in different faculties of our university. 22.63% of our students had tension-type, and 17.89% had migraine type of headache. While percentages for tension-type headache and migraine were 22.98 and 23.50 in female students, percentages for tension-type headache and migraine were 22.33 and 12.89 in male students, respectively. According to IHS 1988 criteria in Turkey, migraine type headache prevalence among university students was pointed out to be 12.4% [27]. In a study conducted on Brazilian university students, migraine prevalence was reported to be 25% and episodic tension-type headache was 32.9% [26]. In Nigerian univer-

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