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Clinical Characteristics of Headache among a Sample of Iraqi Medical and Dental Students

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Abstract

Background: Headache is a painful condition related to a major lack of productivity, limitation of social activities and impairment of quality of life.

Method: in this study a structured questionnaire was formulated in a form of multiple choices questions to gather information on the clinical characteristics, associated factors and the triggering factors along with the mode of treatment adopted by dental and medical undergraduate students of the University of Baghdad in the period from January to March 2019. Language of questionnaire was made simple and easily understandable to students. Students were assured of confidentiality and the participation was entirely voluntary.

Results: in this study a total number of 340 students participated, 170 of them were medical students 76(44.7%) males and 94(55.3%) females, and the other 170 were dental students 45(26%) males and 125(74%) females .It was found that 170 medical students had 161 associated symptoms with headache , the most common associated symptoms was scalp tenderness 44(25.9%), while the least common associated symptom was diarrhea 4(2.4%).While 170 dental students had 162 associated symptoms, the most common associated symptoms was scalp tenderness 46 (27.2%), while the least common associated symptom was seizures 2 (1.2%). 170 medical students expressed 385 triggering factors for causation of headache. It was found that the most common triggering factors was irregular sleep 118(69.4%). And 170 dental students expressed 437 triggering factors for causation of headache. It was found that the most common triggering factors was stress 136 (80.5%). In this study the percentage of medical students who taking self medications was 88.82% and 92.35% for dental students also it was found that both medical & dental students had the highest percentage for using Paracetamol as analgesic, 119(70%) for medical students, and 126(74.6%) for dental students.

Conclusions: the results of this study show that the majority of both medical and dental students suffer from headache with self medications used by the majority.

Key words: *Headache, clinical characteristics, students*

Introduction

Headache prevalence is 96%, with a female predominance. The global active prevalence of tension-type headache is approximately 40% and migraine 10%. Migraine occurs most commonly between the ages of 25 and 55 years and is 3 times more common in females [1, 2].Despite the fact that it causes significant disability, migraine remains under diagnosed and undertreated, trigeminal autonomic cephalgias are rare compared with migraine and tension-type headache. The most common trigeminal autonomic cephalgias is cluster headache, with a population prevalence of 0.1% and a male/female ratio of 3.5-7:1[3, 4].Chronic daily headaches of long duration include chronic migraine, chronic tension-type headache. Hemicrania continua and new daily persistent headache, worldwide prevalence of chronic daily headache has been consistent at 3%-5% most of which likely represents chronic migraine [1] . The International Classification of Headache Disorders (ICHD) was first published in 1988 and has now gone through two revisions, most recently in 2013 By convention, headache classification is based on the characteristics of the individual headache in the prior year, not the individual with the headache, though

features specific to individuals may be used in helping to differentiate between two close diagnostic matches. The ICHD is periodically reviewed and continues to evolve [5] . A primary headache has no known underlying cause. The most common primary headaches include migraine tension-type headache, and cluster headache [6] . Migraine is the third most prevalent disorder according to the Global Burden of Disease Survey and the seventh highest cause of disability worldwide [7] .Risk factors associated with transformation to chronic migraine include coexisting noncephalic sites of pain, mood and anxiety disorders, medication overuse, obesity, and lower educational status [8] . Tension-type headache is far more common, with lifetime prevalence in the general population of up to 80%. There is often a degree of associated disability, and this, combined with the high frequency produces significant socioeconomic impact [2] .Tension-type headache is a dull, bilateral, mild- to moderate-intensity pressure–pain without striking associated features that may be categorized as infrequent, frequent or chronic and is easily distinguished from migraine. Although there may be a genetic element in the development of tension-type headache, environmental factors likely play a larger role than in migraine. Tenderness of pericranial muscles, co-existing mood disorders, and mechanical disorders of the spine and neck may be contributing factors [9] .Cluster headache, often referred to as "suicide headache" because the intensity of the pain, occurs more commonly in men and is usually episodic, characterized by "clusters" of from 2 weeks to 3 months. The pain is extremely severe, with 1 to 8 episodes per day, often awakening the patient from sleep shortly after falling asleep. Features are stereotyped with attacks of severe unilateral orbital pain lasting 15 minutes to hours, usually associated with ipsilateral autonomic symptoms increased lacrimation, nasal congestion/discharge, partial Horner's and producing a characteristic restlessness [3, 4]. The aim of this study is to evaluate the prevalence, clinical characteristic, and the use of self-medication of headache among a sample of Iraqi medical and dental students in the University of Baghdad.

Subjects, materials and methods:

Subjects: Total of 513 structured questionnaires were distributed to the 5th class which were(195) undergraduted dental students, and 6th class which were(318) undergraduate medical students .the questionaires were distributed through the class, in the period from January to march of the year 2019.

Questionnaire: a formulated questionnaire in a form of multiple choices questions was structured to gather information on the prevalence of headache, clinical characteristics, associated symptoms and the triggering factors along with the mode of treatment adopted by dental & medical undergraduate students of the university of Baghdad. Language of questionnaire was made simple and easily understandable to students. Students were assured of confidentiality and the participation was entirely voluntary [10] . Severity of headache was assessed by Numeric Rating Scale (NRS). Headache was graded as mild, moderate and severe as per the numerical value marked from 0-10 on NRS by each participant [11] .

Statistical Analysis: Statistical analysis were performed by the SPSS software version 18.0 (SPSS Ins, Chicago, IL). Results are expressed as mean SD, percentage; Fisher extract and Chi square were used to assess the significance of any differences between the two groups. The statistical significance was set at $p < 0.05$as significant and $p<0.001$ as highly significant.

Results

Total of 513 structured questionnaires were distributed to the 5th, and 6th years of undergraduate dental and medical students respectively in Baghdad university.

The total number of the students whom participated in this study were (340) students, for medical students information was provided by only 170 students from total 318 students (53.45%)which were 76 (44.7%) males and 94(55.3%) females, with mean age = 23.36 ± 0.497. And for dental students: information was gathered from 170 students from total 195 students (87.17%) which were 45(26%) males and 125(74%) females, with mean age =22.42 ±0.496,with females predominance (64.41%) while males were (35.59%). Headache experienced by majority of medical students was frontal 67(39.4%), dull pressing 80(47.1%) with moderate intensity75(44.1%), duration<4 hours 119(70%) and 85(50.3%) had no impairment of routine activity, 74(44%) of medical student had family history of headache. While in dental students Headache experienced by majority of dental students was bilateral 64(37.9%), Pulsatile (throbbing) 83(49.1%), moderate intensity 91(53.8%), duration >4 hours 98(58%) with no impairment of routine activity 91(53.8%) and 72(39.9%) of dental student had family history of headache (Table1).

Table 1: Headache characteristics of medical & dental students

Characteristics	Number of medical students (%) N=170	Number of dental student (%) N=170
Headache side		
• Unilateral	53(31.2%)	48(27.8%)
• Bilateral	50(29.4%)	64(37.9%)
• Frontal	67(39.4%)	58(34.3%)
Quality		
• Pulsatile (throbbing)	62(36.5%)	83(49.1%)
• Dull pressing	80(47.1%)	78(46.2%)
• Sharp stabbing	28(16.5%)	9(4.7%)
Headache intensity		
• Mild	72(42.4%)	67(39.6%)
• Moderate	75(44.1%)	91(53.8%)
• Sever	23(13.5%)	12(6.5%)
Duration		
• >4 hours	51(30%)	98(58%)
• <4 hours	119(70%)	72(42%)
Impairment of routine activity		
• Complete impairment	17(10%)	7(3.6%)
• Incomplete impairment	68(40%)	72(42.6%)
• No impairment	85(50.3%)	91(53.8%)
Family history		
• Yes	74(44%)	72(39.9%)
• No	96(56%)	98(60.16%)

170 medical students experienced 161 associated symptoms, the most common associated symptoms was scalp tenderness [n=44 (25.9%)], followed by nausea/vomiting, photophobia, vertigo, diplopia and paresthesia, while the least common associated symptoms was diarrhea [n=4 (2.4%)]While 170 dental students experienced 162 associated symptoms, the most common associated symptoms was scalp tenderness [n=46 (27.2%)], followed by photophobia, nausea/vomiting, vertigo, diplopia and paresthesia, while the least common associated symptoms was seizures [n=2 (1.2%)],In this study it was found that there is significant difference between the two groups regarding to nausea/ vomiting and photophobia as the p value equals to 0.03 as shown in (Table 2).

Table 2: associated symptoms with headache

associated symptoms	Medical students N (%)	Dental students N (%)	P value
Nausea\vomiting	41(24%)	25(14.8%)	0.03*
Scalp tenderness	44(25.9%)	46(27.2%)	0.78
Vertigo	25(14.7%)	26(15.4%)	0.86
Photophobia	28(16.5%)	44(26%)	0.03*
Diplopia	10(5.9%)	7(4.1%)	0.46
Seizures	0(0%)	2(1.2%)	0.155
Paresthesia	9(5.3%)	5(3%)	0.28
Diarrhea	4(2.4%)	5(3%)	0.73
Other	0(0%)	2(1.2%)	0.155
No symptoms	66(38.8%)	59(34.9%)	0.46
* significant p<0.05			

In this study 170 medical students expressed 385 triggering factors for causation of headache. It was found that the most common triggering factors was irregular sleep [n=118(69.4%)] & stress [n=105(61.8%)], followed by exertion [n=71(41.8%], flashing lights[n=31(18.2%)], hunger [n=30(17.6%)], weather changes [n=23(13.5%)], ministration, specific smells, specific food [n=11(6.5)], while 170 dental students expressed 437 triggering factors for causation of headache. It was found that the most common triggering factors was stress [n=136(80.5%) & irregular sleep[n=105(62.1%)] which is a similar result to what we had with the medical students group, followed by hunger [n=57(33.7%], exertion [n=30(17.8%)], flashing lights [n=29(17.2%)], weather changes [n=29(17.2%)], ministration[n=18(10.7)], specific smells[n=15(8.9%)], specific food [n=10(5.9%)], in this study there was high significance regarding to stress/exertion / hunger, as the p value was equal to 0.0002/0.0000/0.0007 respectively Table 3.

Table 3: triggering factors for headache

Triggering factors	**Medical students N (%)**	**Dental students N (%)**	**p. value**
Stress	105(61.8%)	136(80.5%)	0.0002 **
Flashing lights	31(18.2%)	29(17.2%)	0.7953
Specific smell	11(6.5%)	15(8.9%)	0.32
Specific food	11(6.5%)	10(5.9%)	0.83
Weather changes	23(13.5%)	29(17.2%)	0.35
Exertion	71(41.8%)	30(17.8%)	0.0000 **
Irregular sleep	118(69.4%)	105(62.1%)	0.16
Hunger	30(17.6%)	57(33.7%)	0.0007 **
Menstruation	11(6.5%)	18(10.7%)	0.17
Other	1(0.6%)	4(2.4%)	0.17
Nothing	1(0.6%)	3(1.8%)	0.31
** highly significant p<0.001			

In this study the percentage of medical students who taking self medications was 88.82% and 92.35% for dental students also it was found that both medical & dental students had the highest percentage for using Paracetamol as analgesic, 119(70%) for medical students, and 126(74.6%) for dental students (Table 4).

Table 4: Medications used by medical and dental students

Medications	**Medical students N(%)**	**Dental students N(%)**
Paracetamol	119 (70%)	126 (74.6%)
Paracetamol+ibuprofen	20 (11.8%)	20 (11.8%)
Paracetamol+propyphenazone	4 (2.4%)	3 (1.8%)
Aspirin	7 (4.1%)	0 (0%)
Diclofenac	3 (1.8%)	4 (2.4%)
Migranil	1 (0.6%)	4 (2.4%)
other	48 (28%)	20 (11.8%)

Discussion

In this study it was shown that high prevalence of headache among both medical and dental students and this agree with previous studies [10, 12]; with female predominance and this agree with other studies that demonstrated high prevalence in females [10,13].

In this study the prevalence of positive family history was42.9%, in other previous studies like Oman study reflect 58% of students [14] while in an Indian study only 20.16% of students had positive family history [10] .

The most common associated symptoms in this study was scalp tenderness for both groups, while the most triggering factors for the causation of headache were stress and irregular sleep and this agrees with other study that found similar results [10] . It is being widely reported that medical students undergo major stress. Causes for the same are varied, from their interpersonal problems to their course overload to uncertainties of future career prospects, in this study dental students had shown high level of stress than medical students and that in concordance with other study [15] . In this study the percentage of medical students who taking self medications was 88.82% and 92.35% for dental students and this can be reasonably explained by the fact that being in medical profession, students possess theoretical knowledge about the medications, for this reason they prefer to seek self medications using over the counter drugs [10] . The most self medications used by both groups was paracetamol due to be a simple analgesic and reachable.

Conclusion

In this study the results showed that both medical and dental students had high prevalence of headache and scalp tenderness was the most associated symptoms with headache for both groups, stress and hunger most significant triggering factors for causation of headache among dental students, while exertion was most significant among medical students. The majority of both medical and dental students used self medications for treating headache. The improvement of the academic performance of the students needs the precise diagnosis and proper treatment for headache among them.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the department of oral diagnosis, College of Dentistry, University of Baghdad and all experiments were carried out in accordance with approved guidelines.

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