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Epidemiology and characteristics of headache in adolescents - A clinical study

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Abstract
Background: Headache is a common complaint in children. Headache is a major health concern not only because it is a disabling disease, but also because of high utilization of health care system and due to work absenteeism. The present study was conducted to assess the epidemiology and characteristics of headaches in adolescents.
Materials & Methods: This study was conducted in department of Pediatrics in year 2015. It included 2540 children of both gender. Factors such as duration of headache and change in its severity, frequency and duration since onset, age of onset of recurrent headache. Quality of pain, usual time of onset of headache, diurnal variation in headache, duration of each episode, frequency of headache episodes, precipitating, aggravating and relieving factors were recorded based on ICHD-2 diagnostic criteria for various primary headaches.
Results: Out of 2540 studied subjects, 1240 were boys and 1300 were girls. The difference was non – significant (P- 0.1). Out of 2540 subjects, 1210 had headache (47.6%). 7% subjects had migraine with aura, 2% had migraine without aura, 6.5% had probable migraine with aura, 4% had probable migraine without aura. 15% had unspecified headache. Under tension type headache, 6% had episodic infrequent tension type headache, 4% had episodic frequent tension type headache, 0.3% had chronic tension type headache, 0.2% had probable tension type headache. 0.5% had Probable cluster Headache, 0.4% had cluster headache, 0.3 % had probable paroxysmal hemicrania. 0.8% had primary stabbing headache. Father had 5%, mother had 17.4%, both parents had 3.6% and siblings had 4.2% family history of headache.
Conclusion: Headache is common among school going children. A proper diagnosis should be done in adolescent to reach the diagnosis. Migraine is comparatively common among various types of headaches.

Keywords: adolescent, headache, migraine

1. Introduction
Headache is a common complaint in children. Headache is a major health concern not only because it is a disabling disease, but also because of high utilization of health care system and due to work absenteeism. Childhood headache has an important adverse impact on the child and the family. Therefore an accurate estimate of the true prevalence derived from all published world literature will help in assessing the magnitude of the problem, streamlining resources in improvement of diagnosis and treatment, and reducing its burden [1].
World Health Organization has given the disability score of 0.7 to migraine and according to them it is one of the most debilitating illnesses. International Headache Society's (IHS) Classification and Diagnosis of Headache Disorders in 1988 and the second edition of the International Classification of Headache Disorders in 2004 (ICHD-II), there have been several published studies that share common methods and criteria for the diagnosis of migraine [2]. These allow a systematic review of the world literature, despite some inevitable minor variations in methods such as the use of a questionnaire, face-to-face interviews, or both in collecting data, point-in-time prevalence, and reporting on different age groups within the childhood population.
Previous studies differ regarding the overall prevalence of primary headaches in children and also regarding the type of primary headaches [3]. While some studies had described migraine as the most prevalent headache in adolescents, other studies have found tension type headache to be the most common type. A recent review suggested that despite high prevalence of headache throughout the world, most of the epidemiological studies were conducted in Western Europe and North America [4].
The present study was conducted to assess the epidemiology and characteristics of headaches in adolescents.

2. Materials & Methods
This study was conducted in department of Pediatrics in year 2015. It included 2540 children of both gender. All were informed regarding the study and written consent was obtained.
Information such as name, age, gender etc was recorded on case sheet. Factors such as duration of headache and change in its severity, frequency and duration since onset, age of onset of recurrent headache. Quality of pain, usual time of onset of headache, diurnal variation in headache, duration of each episode, frequency of headache episodes, precipitating, aggravating and relieving factors were recorded based on ICHD-2 diagnostic criteria for various primary headaches. Results thus obtained were subjected to statistical analysis using chi- square test. P value < 0.05 was considered significant.

3. Results
Table I shows that out of 2540 studied subjects, 1240 were boys and 1300 were girls. The difference was non – significant (P- 0.1). Table II shows that out of 2540 subjects, 1210 had headache (47.6%). Table III shows that 7% subjects had

migraine with aura, 2% had migraine without aura, 6.5% had probable migraine with aura, 4% had probable migraine without aura. 15% had unspecified headache. Under tension type headache, 6% had episodic infrequent tension type headache, 4% had episodic frequent tension type headache, 0.3% had chronic tension type headache, 0.2% had probable tension type headache. 0.5% had Probable cluster Headache, 0.4% had cluster headache, 0.3 % had probable paroxysmal hemicrania. 0.8% had primary stabbing headache. Fig 1 shows that father had 5%, mother had 17.4%, both parents had 3.6% and siblings had 4.2% family history of headache.

Table 1: Distribution of subjects

Total - 2540		
Boys	Girls	P value
1240	1300	0.1

Table 2: Subjects with headache

Total	Headache	Percentage
2540	1210	47.6%

Table 3: Types of headache

Diagnosis	Percentage
Migraine	
Migraine with aura	7%
Migraine without aura	2%
Probable Migraine with aura	6.5%
Probable Migraine without aura	4%
Unspecified headache	15%
Tension type headache	
Episodic Infrequent Tension Type Headache	6%
Episodic Frequent Tension Type Headache	4%
Chronic Tension Type Headache	0.3%
Probable Tension Type Headache	0.2%
Trigeminal autonomic Cephalgia	
Probable cluster Headache	0.5%
Cluster Headache	0.4%
Probable Paroxysmal Hemicrania	0.3%
Primary Stabbing Headache	0.8%

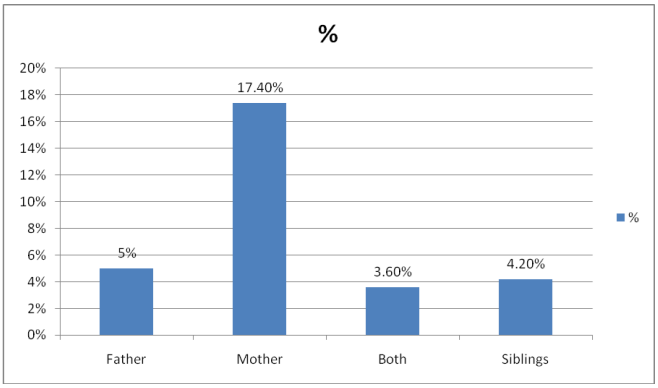

Fig 1: Family history of headache

4. Discussion

Headaches are most common complaint among children. Causes of headaches may include fatigue, sleep deprivation, stress, the effects of medications, the effects of recreational drugs, viral infections, loud noises, common colds, head injury, rapid ingestion of a very cold food or beverage, and dental or sinus issues [5].

Though clinical interview is considered gold standard, still many epidemiological studies have used the questionnaires as a source of information for the diagnosis of headache. Evidences suggest that questionnaire based studies are not only feasible, but also provide reliable information [6].

Primary headaches are benign, recurrent headaches not caused by underlying disease or structural problems. For example, migraine is a type of primary headache. While primary headaches may cause significant daily pain and disability, they are not dangerous. Secondary headaches are caused by an underlying disease, like an infection, head injury, vascular disorders, brain bleed or tumors. Secondary headaches can be harmless or dangerous. Certain "red flags" or warning signs indicate a secondary headache may be dangerous [7].

In present study, we evaluated children with headache. Out of 2540 studied subjects, 1240 were boys and 1300 were girls. Off 2540 subjects, 1210 had headache (47.6%). This is in agreement with Ando N *et al*. [8]

We found that most common type of headache in subjects was migraine which was seen in most of the subjects. 15% had unspecified headache. The reason for unspecified headache was unknown. Similar results are in agreement with Ozge *et al*. [9]

The brain itself is not sensitive to pain, because it lacks pain receptors. However, several areas of the head and neck do have pain receptors and can thus sense pain. These include the extracranial arteries, middle meningeal artery, large veins, venous sinuses, cranial and spinal nerves, head and neck muscles, the meninges, falx cerebri, parts of the brainstem, eyes, ears, teeth and lining of the mouth. Pial arteries, rather than pial veins are responsible for pain production. Headaches often result from traction to or irritation of the meninges and blood vessels. The nociceptors may be stimulated by head trauma or tumors and cause headaches. Blood vessel spasms, dilated blood vessels, inflammation or infection of meninges and muscular tension can also stimulate nociceptors and cause pain. Once stimulated, a nociceptor sends a message up the length of the nerve fiber to the nerve cells in the brain, signaling that a part of the body hurts [10].

We found that there was family history of headache. father had 5%, mother had 17.4%, both parents had 3.6% and siblings had 4.2% family history of headache. This is in accordance to Laurell K *et al*. [11]

5. Conclusion

Headache is common among school going children. A proper diagnosis should be done in adolescent to reach the diagnosis. Migraine is comparatively common among various types of headaches.

6. References

1. Passchier J, Orlebeke JF. Headache and stress in schoolchildren: An epidemiological study. Cephalalgia 1985; 5:167-176.
2. Lu SR, Fuh JL, Juang KD, Wang SJ. Migraine prevalence in adolescents aged 13-15: a student population-based study in Taiwan. Cephalalgia. 2000; 20:479-485.
3. Guidetti V, Galli F. Evolution of headache in childhood and adolescence: an 8-year follow-up. Cephalalgia. 1998; 18:449-454.

4. Aromaa M, Rautava P, Helenius H, Sillanpa¨a¨ M. Factors of early life as predictors of headache in children at schoolventry. Headache. 1998; 38:23-30.
5. Congdon P, Forsythe W. Migraine in childhood: a study of 300 children. Dev Med Child Neurol. 1979; 21:209-216.
6. Zwart JA, Dyb G, Holmen TL, Stovner LJ, Sand T. The prevalence of migraine and tension-type headaches among adolescents in Norway. The Nord-Trondelag Health Study (Head-HUNT-Youth), a large population-based epidemiological study. Cephalalgia. 2004; 24:373-379.
7. Stovner LJ, Hagen K, Jensen R *et al*. The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia. 2007; 27:193-210.
8. Ando N, Fujimoto S, Ishikawa T *et al*. Prevalence and features of migraine in Japanese junior high school students aged 12-15yr. Brain Dev. 2007; 29:482-485.
9. Ozge A, Bugdayci R, Sasmaz T *et al*. The sensitivity and specificity of the case definition criteria in diagnosis of headache: a schoolbased epidemiological study of 5562 children in Mersin. Cephalalgia. 2002; 22:791-798.
10. Shivpuri D, Rajesh MS, Jain D. Prevalence and characteristics of migraine among adolescents: A questionnaire based study. Indian Pediatrics. 2003; 40:665-669.
11. Laurell K, Larsson B, Eeg-Olofsson O. Headache in schoolchildren: agreement between different sources of information. Cephalalgia. 2003; 23:420-428.