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Original Research Article **Gynae**

Clinical Profile of Children with Recurrent Headache

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Abstract

***Background*:** Children's headaches are not well understood, and diagnosis can be difficult. Children who get frequent headaches are frequently badly impacted. The relationship between lifestyle factors including food, exercise, and sleep and the occurrence of headaches, particularly migraines, has been investigated mostly in adults, leading to changes in lifestyle as a conventional treatment in addition to medical therapy. ***Objective*:** To find out clinical profile of children with recurrent headache. ***Materials and Methods*:** This is a cross sectional study was conducted Centre for Neurodevelopment and Autism in Children (Pediatric Neurology OPD), Dept. of Pediatrics of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka during January 2022 to June 2022. Total of 100 children attending with recurrent headache were taken consecutively over a period of six months for this study. Patient with recurrent headache were classified (diagnosed) based on clinical presentation (according to International Headache Society diagnostic criteria). ***Results*:** The majority of patients (54%) suffered migraines without aura, and 48% had severe headaches. 70% of patients exhibited sensitivity to bright light during a headache episode, 80% had sensitivity to noise, 85% had no headaches while playing TV video games, and 66% had a history of headaches caused by sun exposure. ***Conclusion*:** Males dominated in the pre-pubertal age range, whereas girls dominated after puberty. The most prevalent RHA diagnosis was migraine without an aura. Headache triggers or precipitating factors were also compared to previous research.

Keyword: Headache, Migraine disorders, Headache Severity, clinical factors.

INTRODUCTION

Headache is the most common neurological symptom manifesting as pain in childhood. The diverse causes, frequency, and intensity of headache have a major impact on children's intellectual performance, memory, personality, and school attendance [1]. Headache in children is common, often recurring, and prevalence rises from 5% at the age of three to more than 50% in puberty. Recurrent headaches may impact many aspects of childhood, such as quality of life and school performance social life, mental health, and participation in physical activities [2]. Several lifestyle behaviors were associated with frequent headaches in children and youth, such as meal irregularity, late chronotype, prolonged screen exposure, and frequent substance use/exposure, suggesting that these are potential modifiable risk factors to target in this population [3]. Recurrent headache (RHA) defined as the occurrence of headache less than 15 days per month [4]. It includes a number of conditions characterized by recurrent episodes of head pain and associated symptoms. Though almost everyone gets occasional headaches, particular headache disorders vary in incidence, prevalence and duration. Headache disorders are divided into the primary and secondary [5]. Primary headaches in pediatric population are relatively common and they are a major cause for concern to physicians [6]. The primary headaches are chiefly migraine, tension-type headache & cluster headache [7]. Prevalence of RHA among school children has been reported from different countries. It ranges from 37% - 51 % at 7 years of age and gradually rise to 57% - 82% by age 15 [8]. Migraine and Tension type headache (TTH) are common type of primary headache in children that are often recurrent [9]. Early evaluation and recognition is important to reduce the frequency of HA. With this regard clinical evaluation and triggering factors identification of a child with

recurrent headache is very much essential. Still now, etio-pathogenesis and patho-physiology of recurrent is incompletely understood [10].

MATERIALS AND METHODS

This is a cross sectional study was conducted Centre for Neurodevelopment and Autism in Children (Pediatric Neurology OPD), Dept. of Pediatrics of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka during January 2022 to June 2022. Total of 100 children attending with recurrent headache were taken consecutively over a period of six months for this study. Patient with recurrent headache were classified (diagnosed) based on clinical presentation (according to International Headache Society diagnostic criteria). After taking informed consent, the patients & parents were interviewed face to face by the researcher for the purpose of collection of data. The patients were treated by the assigned physician. Necessary investigations were done to exclude secondary causes of headache in selected cases when red flag sign is present. Data coded edited and entered into the computer and were analyzed using SPSS.

RESULTS

Table 1: Demographic characteristics of the study population (n=100)

Demographic characteristics	Number	Percentage
Age group		
4-8 years	12	12.0
9-12 years	62	62.0
13-16 years	26	26.0
Sex		
Female	51	51.0
Male	49	49.0
Socioeconomic Status		
Poor	35	35.0
Middle	50	50.0
Rich	15	15.0
Residence		
Urban	70	70.0
Rural	30	30.0
Family History		
Yes	63	63.0
No	37	37.0

Table shows that most of the patient (62%) belongs to 9-12 years age. Remaining 26% and 12% patient belong to 13-16 & 4-8 years age group respectively, 51% were female and 49% were male. Fifty percent of study population belonged to middle class family. Majority (70%) patients were from urban area. Sixty three percent had positive family history of headache.

Table-2: Age of onset of headache among the study subjects

Age of Onset of Headache	Frequency	Percent (%)
<6 years	10	10.0
6-10 years	53	53.0
>10 years	37	37.0
Total	**100**	**100.0**

Onset of headache among the patients was 53% in 6-10 years group. More than 10 years and <6 years age group were 37% and 10% respectively.

Table-3: Headache duration among the study subjects

Total headache duration	Number	Percentage
<6 month	13	13.0
6 month-1 year	27	27.0
1-2 year	31	31.0
>2 year	29	29.0
Total	**100**	**100.0**

Thirty one percent had history of headache for last 1-2 years, in 29% cases more than 2 years, 27% had 6 months-1 year and 13% had <6 months respectively.

Table-4: Type of recurrent headache among the study subjects

Type of Recurrent Headache	Number	Percentage
Migraine without aura	54	54.0
Migraine with aura	16	16.0
Infrequent tension type	11	11.0
Frequent tension type	11	11.0
Cluster Headache	3	3.0
Others	5	5.0
Total	**100**	**100.0**

Most of the patients (54%) had migraine without aura.

Table-5: Headache severity among the study population

Headache Severity	Frequency	Percentage
0 (None)	8	8.0
1-3(Mild)	12	12.0
4-6 (Moderate)	32	32.0
7-10 (Severe)	48	48.0
Total	**100**	**100.0**

Severity headache was found in 48% of patients. Moderate headache was found in 32%, mild was found 12% and 8% had no headache.

Table 6: Headache Aggravation with different clinical factors

Headache aggravation	Number	Percentage
Sensitivity on bright light	70	70.0
Sensitivity of noise	80	80.0
Headache associate with school tasks	43	43.0
Headache for school assignment	39	39.0
Headache for school exam	45	45.0
Headache for TV video games	15	15.0
Headache for missing breakfast meal	10	10.0
Headache for sun exposure	66	66.0
Headache during premenstrual period	02	5.4

Sensitivity on bright light had 70% of patients during headache episode, sensitivity of noise was found 80% of patients, forty three percent patients had history of which was seems to be associated with headache due to school tasks, 39% patient had headache exaggeration due to school assignment, Fifty five Percent had headache exaggeration due to school exam, 85% patient had no headache for TV video games, 10% of patients had headache due to missing breakfast meals, 66% had history of headache due to sun exposure, Only 2 (5.4%) had history of headache during premenstrual period out of 37 female study population.

DISCUSSION

Headache is a common health problem in children, among them recurrent headache most common. It can alter child's quality of life, impose burden to the family. The degree of associated morbidity and the tendency to persist into adulthood, make the physician interested to know more and more about recurrent headache. Present study was conducted in the Center for Neurodevelopment and Autism in children (CNAC), Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. It was carried out on children of 6 years to 15 years of age, diagnosed as recurrent headache according to International Classification of Headache Disorders (ICD-3) to identify the demographic and clinical profile of children with recurrent headache. Most of the children (62%) belong to 9-12 years age group. Mean age was found 10.9 ± 2.2 years. Mishra *et al.* found mean age 10 years among the recurrent headache children attending outpatient department in Delhi [11]. Female and male were almost similar (51% versus 49%) among the children with recurrent headache. In a Indian study among recurrent headache patients female were found 72% [12]. Out of five population based study in Asia-Pacific region, Malaysian study did not mention the gender ratio. Japanese and Taiwanese study reported a higher proportion of male. In Korean study the proportion was same. Peng and Wang concluded that gender may differ in different populations in Asia-Pacific region [13]. Sixty three percent of children had

positive family history of recurrent headache. Panda and Tripathi also found strong family association of migraine headache [12]. shows 50% patients belonged to middle class family. Poor and rich classes were 35% and 15% respectively. More patients came from urban area (70%). There significant positive correlation between lower economic status and higher prevalence of headache [14-16].

Age of onset of headache found 53.0% in 6-10 years group; >10 years and <6 years age group were found 37% and 10% respectively. Mishra *et al.*, also found 83.91% children had headache in 6-10 years age group [11].

Among the study population, highest was found migraine without aura (54.0%), 14% had migraine with aura and tension headache was found 24%. Panda and Tripathi found migraine with aura 13.6 % of patients [12]. This discrepancy was because of more hospital visit of migraine patients due to more severe headache attack.

Fifty five percent patients used acute medication during headache episode. Forty seven percent took medication according to medical advice by physician. Whereas Mishra et al. found, most patients took self-medication during headache episode [11]. In this study, acute medication overuse was found 10% of patients. Bighal and Lipton also found 80% headache patients suffered in special care due to acute medication overuse. These findings also correlate with the observations of Rubin DH *et al.*, [14] and Brna PM *et al.*, [9].

Of all 100 cases of RHA, all had various types of aggravating factors. Children and parents can identify specific factors that result in headache. Sensitivity to precipitants varied from child to child. The association of physiological triggers (sleep deprivation, missing a meal, fatigue and dehydration) and psychological triggers (stress, anxiety, worry, depression etc.) with increased frequency of headache episode has been proved by different retrospective studies [17]. In a Canadian [4] study, school factors including pressure of school work, assignments, exams, learning disturbance were found responsible for recurrent headache. In this study, children reported headache while performing school assignments (39%), almost half (45.0%) had headache associated with school exam and 43% had headache associate with school task.

This study showed, headache with weather changes found remarkable among in 24% patients, 15% patient had headache for prolonged TV watching/video games. Panda and Tripathi also found strong association of headache during weather change and prolonged TV watching [12].

Panda and Tripathi found photophobia and phonophobia in 84% and 81.8% of patients headache patients [12]. In this study, 70% children had phontophobia and almost two third (66%) had headache exaggeration on sun exposure. In the study of Illinos [17], sunlight was a trigger factor for 38% of patients. Sun exposure usually exacerbates a pre-existing migraine headache. Migraineurs tend to wear sunglasses more often than non- headache-prone individuals. Sunlight may affect the severity of the headache more than the frequency. Association of RHA with sensitivity to noise documented in different studies [9]. Sensitivity to noise showed positive link in 38% cases in the study of Robertson WC [18]. In this study child having sensitivity to noise was found 80%. Sleep disturbance was found more common among migrainuer and TTH group than control group [19]. Van-den-Burgh reported in a study that 25% to 40% of Belgian children having RHA suffered from different forms of disrupted sleep [20]. Illinos [17] found under sleeping was a precipitant in 31% of migraineurs and oversleeping in 24% patients. In this study 10% children had sleep problem.

In a study of Canada by Brna & Joseph, meal skipping was identified by 40% adolescents with history of RHA as one of the leading triggers of HA [9]. Missing meal or hunger was listed by 40.0% of our patients as a precipitant for migraine. In this study 10% had headache exaggeration due to missing breakfast or irregular meal. Recurrent headache was observed during premenstrual period [21]. In this study, out of 37 female patients 94.0% had headache during premenstrual period.

CONCLUSION

Both demographic and clinical features were almost identical to prior investigations. Males were dominating in the pre-pubertal age group, but girls were dominant after puberty. The most common RHA diagnosis was migraine without aura. Headache triggers or precipitating factors were also compared to prior studies.

REFERENCE

1. Sinha, R., Soneji, D., Kamila, G., Singh, S., & Upadhyay, A. (2023). Clinical Profile of Children with Primary Headache at a Tertiary Care Center in North India: A Retrospective Study. *Annals of Child Neurology*, *31*(3), 167-73.
2. Dissing, K. B., Vach, W., Lynge, S., Christensen, H. W., & Hestbaek, L. (2023). Description of recurrent headaches in 7–14-year-old children: Baseline data from a randomized clinical trial on effectiveness of chiropractic spinal manipulation in children with recurrent headaches. *Chiropractic & Manual Therapies*, *31*(1), 5.
3. Nilles, C., Williams, J. V., Patten, S. B., Pringsheim, T. M., & Orr, S. L. (2024). Lifestyle Factors Associated with Frequent Recurrent Headaches in Children and Adolescents: A Canadian Population–Based Study. *Neurology*, *102*(6), e209160.

4. Seshia, S. S., Lowry, N., & Doris Newmeyer, R. N. (2011). Recurrent headache in children & Adolescent, *University of Saskatchewan, 23*, 1-4.
5. Hershey A. D. Migraine. In: R.M. Kliegman, B.F. Stanton, J.W.S. Geme, N.F. Schor& R.E. Behrman (eds), Nelson Textbook of Pediatrics, 19h ed New Delhi: Elsevier, 2012: 2040-2045.
6. Hershey, A. D., Kabbouche, M. A., & Powers, S. W. (2006). Tension-type headache in the young. *Current Pain and Headache Reports, 10*, 467-470
7. Headache Classification Subcommittee of the International Headache Society. The international classification headache disorders. Cephalalgia 2013; 33(9):629-808.
8. Lewis, D. W. (2002). Headache in children & adolescents, 65: 625-32,635-6.
9. Brna, P. M., & Dooly, J. M. (2006). Headache in pediatric population. *Semin Pediatr Neurol, 13*, 222-2.
10. Lewis D D. Headache in Infant and Children, In: K. F. Swaiman, S Ashwal, D M Ferrier, N F Schor (eds), Swaiman's Pediatric Neurology, 5th ed New Delhi: Elsevier2012: 880-899.
11. Mishra, D., Sharma, A., Juneja, M., & Singh, K. (2013). Recurrent Headache in Paediatric Outpatients at a Public Hospital in Delhi. *Indian Paediatrics, 50*, 775-778.
12. Panda, S., & Tripathi, M. (2005). Clinical Profile of Migraineurs in a Referral Centre in India. *JAPI, 53*, 111-115.
13. Peng, K., & Wang, S. (2014). Epidemiology of Headache Disorders in the Asia-Pacific Region. *Headache, 54*, 610-618.
14. Rubin, D. H., Succoff, S. A., & Knupp, K. G. (2006). Headache in children. *Pediatric Annals, 35*, 345-53.
15. Gupta, R., Bhatia, M. S., Dahiva, D., Sharma, RHA in Indian adolocent. 2009; 76(7), 733-7.
16. Egermark, E. (1982). Prevalence of headache in Swedish school children - a questionnaire survey. *ActaPediatr Scan, 71*, 135-140.
17. Blau, J. N., & Thavapalah, M. (1994). Precipitating Factors in Migraine: A Retrospective Review of 494 Patients. *Headache, 34*, 214-6.
18. Robertson W. C. Migraine headache paediatric perspective Last updated, dec 15,2006.
19. Rodiea, U., Diana, G., & Ruxandra, B. (2008). The evaluation of headache in children. Medicine in evolution, Nr. 4/2008.
20. Van den Bergh, V., Amery, W., & Waelkens, J. (1987). Trigger factors in migraine: a Study Conducted by the Belgian Migraine Society. *Headache, 27*(4), 191-9.
21. Molofsky, W. J. (1988). Headache in children. *Paediatric Ann, 27*, 614-21.