

# Prevalence and Patterns of Headache in School Children in Karachi

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## Abstract

**Objective:** To determine the prevalence of headache, its different patterns and associated symptoms in school children.

**Methods:** A population based, cross-sectional, questionnaire study, followed by interviews of selected cases and their ophthalmoscopic examination was conducted in eight secondary schools from different parts of Karachi to cover all socioeconomic groups. A total of 1211 school children aged 12 to 20 years, were included. The main outcome measures studied were, prevalence of headache, associated symptoms and impact of positive family history.

**Results:** The estimated prevalence rate of headache in school children was 85.5%. Of them 43.1% had mild, 46.6% had moderate and 8.8% had severe headache. Nearly half of them (49.6%) had a frequency of 3 or less episodes per month. Majority (58.7%) had no warning symptoms. The most common symptom prior to headache was subjective weakness (19.0%) followed by sensitivity to light (11.5%). The most common site was frontal headache (30.4%) and in 66.7% of the cases it was aching in character. Complaint of noise and light intolerance during headache was reported by 38.2%, 17.1% sought medical advice and only 0.4% needed hospitalization ever. Of those taking medicines (n =424 (41%) majority (82.3%) were self medicated. A positive family history was present in 52.5% children. All selected study subjects were found to have normal optic discs on ophthalmoscopic examination.

**Conclusion:** Headache is a major health problem in school children. It is inappropriately treated and there is strong impact of family history (JPMA 56:215;2006).

## Introduction

Headache is a common symptom in school children and a common health problem.<sup>1,2</sup> The prevalence of headache has increased considerably in children during the last few decades and the age of onset has decreased.<sup>1,3</sup> Moreover, much less is known about the prevalence and causes of headache in school children in general.<sup>4</sup> No local data are available regarding its prevalence, frequency, different patterns and associated features. Numerous studies on the epidemiology of headache have shown great variations according to specific populations and regions involved.

## Subjects and Methods

A population based cross-sectional study was conducted from September to October 2004. A total of 1211 students of 8th, 9th and 10th classes were selected from 8 different schools of Karachi aged 12 to 20 years. Among them 614 (50.7%) were boys and 597 (49.3%) were girls. A comprehensive questionnaire was made under I.H.S guidelines and was filled by the students in classroom setting under the supervision of a doctor. Considerable attention

was paid to the language of the questionnaire to make it simple and understandable for school level students. Moreover, 374 students (36.1%) with either severe, or unilateral, or headaches with nausea or vomiting, or having complex symptoms were further interviewed by a doctor to validate the findings and undergo ophthalmoscopic examination.

SPSS for Windows was used to tabulate data and to calculate frequencies, percentages and comparisons of different variables.

## Results

Among 1211 children 1035 had headaches with an estimated lifetime prevalence rate of 85.5%. There were 614 boys and 597 girls with 521 (84.8%) boys and 514(86.0%) girls having headaches. The mean age was  $14.49 \pm 1.08$  years. For boys the mean age was  $14.57 \pm 1.07$  years and for girls  $14.49 \pm 1.08$  years. The highest prevalence of headache was at 13 years of age (88.1%) (Table 1).

About half of the children (513), 49.6% had either 3 or less episodes of headache per month whereas 331 children (32.0%) had either 3 or fewer episodes per week. Only 7 children (0.7%) were

**Table 1. Age and headache.**

Age	No. studied	Have headache	Prevalence (%)
12	16	14	87.5
13	177	156	88.1
14	455	389	85.5
15	388	330	85.5
16	128	105	82.0
17	35	30	85.8
18	8	7	87.5
19	3	2	66.6
20	1	1	100

found to have daily headaches. In all 89.2% children had either current or recurrent headaches; and 108 children (10.4%) had occasional or yearly headaches.

Regarding severity 446 (43.1%) children had mild, 482 (46.6%) moderate and 107 (10.3%) had severe headaches.

Majority of the children had no warning prior to headaches (58.7%). One or more warning symptoms were experienced by 375 (36.2%) children occasionally, whereas 52 (5.0%) children always got one or more warning symptoms before having an episode of headache.

The most common warning symptom was non-neurological complaint of weakness. It was present in 197 children (19.0%) followed by sensitivity to light in 120 (11.5%) children. The third major warning symptom was visual disturbance and was seen in 116 (11.2%) children, 85 (8.2%) children had a complaint of light flashes, 29 (2.8%) had tingling or numbness, and 14 (1.3%) faced difficulty in speaking prior to their headaches. In 102 (9.9%) subjects, two or more symptoms were found to be present simultaneously.

The most common pattern of headache was frontal which was present in 315 (30.4%) children. Bilateral headaches were present in 278 (26.9%) subjects whereas unilateral headaches were had in 164 children (15.8%). Unilateral and bilateral headaches both were more common in girls whereas

**Table II: Sex and Site of headache.**

Site	Boys	Girls	Total No.	Total %
Front	167	148	315	30.4
Bilateral	127	151	278	26.9
Top	92	81	173	16.7
Unilateral	74	90	164	15.8
Back	51	38	87	8.4
Non-specific	10	8	18	1.7

frontal headache was more common among boys. (Table 2)

The character of headache was described as aching by 690 (66.7%) and throbbing by 345 (33.3%) children. None of the children described their headache being stabbing or burning in character. Radiation of headache to other body parts was found in 231 (22.3%) subjects.

The most common associated feature was noise and light intolerance that was present in 396 (38.2%) children followed by subjective feeling of non-neurological weakness affecting 329 (31.8%). Dizziness was present in 198 (19.1%) and in 37 (3.6%) cases weakness and dizziness were present together. In 279 (27.0%) children 2 or more symptoms were present simultaneously.

Most of the children (588) (56.8%) had headaches lasting less than an hour, followed by 279 (27.0%) having headaches for 1 to 4 hours. Only 38 (3.7%) children had headaches that lasted for more than 24 hours.

According to 504 (48.7%) children physical activities had an increasing influence on the severity of their headaches.

No medication was used by 409 (39.5%) children, who just went to bed or took rest. Medication was taken by 424 children along with rest or not whereas 202 (19.5%) children chose to continue their daily activities.

A total of 424 (41.0%) children were using medicine for headache. Of these 75 (17.7%) took it on a doctor's advice whereas 349 (82.3%) used over the counter drugs. Only 4 (0.4%) needed hospitalization.

Home work could not be completed or school was missed by 177 (17.1%) children due to headache.

A positive family history of similar headaches was present in 543 (52.5%) children (271 boys and 272 girls).

Ophthalmoscopic examination of 374 (36.1%) children with severe, unilateral headaches or headaches with nausea or vomiting and those with complex symptoms was done. All of them had a normal fundoscopic picture.

## Discussion

Prevalence of headache varies greatly for different populations and places. Our study shows that lifetime prevalence of headache is very high, but comparable to other studies conducted in various

parts of the world.<sup>4-7</sup> The interesting feature is that very little prevalence difference was found between boys and girls (a prevalence difference of only 1.2%) in comparison to other studies.<sup>4,5,8,9</sup>

Our data observed shows that the most prevalent age for headache was 13 years, and this finding was consistent with other studies from other parts of the world.<sup>7</sup> After the age of 15 years there was a decline in headache, showing puberty being a susceptible age.

The presented study found that recurrent headaches (89.2%) were much more common as compared to other populations with comparable prevalence percentage.<sup>4,5,8,11</sup> No definite underlying factors and causes for this are known in Pakistan.

Headache was found to be the most inappropriately treated ailment in school-age children. Similar conclusions were reported by Oelkers A et al<sup>1</sup>. Moreover, majority of sufferers were taking medicines without any medical advice and this is a cause of serious concern.

More than half of the children (52.5%) had a positive family history of headache, showing that it was a major influential factor. This is also in agreement with other studies.<sup>6</sup>

### Conclusion

Headache in school children is not only found to be a common complaint, but a major health problem. Mostly it is either inappropriately treated or missed. It is one of the common causes of school absenteeism, hence loss of study hours of school going children. No comparable data could be found to define a certain headache pattern and prevalence in this population. More studies are therefore needed to evaluate its prevalence, different patterns, underlying causes and better treatment options.

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5. Oxford High School,
6. New Day High School,
7. Shaheen Public School and
8. Progressive Public School

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### Introduction

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