

# HEADACHE CHARACTERISTICS IN UNIVERSITY UNDERGRADUATES PRESENTING TO MEDICAL ATTENTION

K H Ho, B K C Ong, P N Chong

## ABSTRACT

A 78-point self-administered questionnaire relating to headaches was completed by 1208 undergraduates of the National University of Singapore. The management and characteristics of the study population that had sought medical consultation for their headaches was studied. The lifetime prevalence of headaches in the study population was 98.1%. One hundred and six (8.8%) had visited a doctor for their headache. These had more severe symptoms and required more pharmacotherapy. They also tended to have migraines rather than tension headaches. Malays were more likely than non-Malays to seek medical attention. No significant gender predisposition was found. Eight of the 106 (7.5%) had been given prophylactic/interval therapy. A significant proportion of the study population responds well to non-prescription medication, suggesting that the purpose of many medical consultations may be to relieve anxieties regarding the diagnosis rather than to obtain symptomatic relief.

**Keywords:** migraine, tension headache, International Headache Society diagnostic criteria

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## INTRODUCTION

Headaches are a common problem. To address this issue, a survey was conducted in undergraduates enrolled in the Medicine, Law and Science faculties. This paper covers the pattern of treatment of headache sufferers identified and looks into aspects of headache severity and character which determined whether survey respondents sought medical consultation and treatment.

## MATERIAL AND METHODS

One thousand two hundred and eight (1208) undergraduates from the Medicine, Science and Law faculties completed a 78-point questionnaire relating to headaches experienced to date. Respondents were asked to cite characteristics of only their "usual" headache type. A physical examination was not performed. Data collected was entered into a computer database (Microsoft Access version 1.0) and analyzed with the Statistical Package for the Social Sciences (SPSS for Windows, Chicago, IL) and Epistat statistical programs. Proportions were compared with the Fisher's exact test or X<sup>2</sup> test with continuity correction as appropriate. Means were compared using Student's unpaired t-test, p values of <0.05 were considered as significant.

Headaches were classified according to the IHS (International Headache Society) diagnostic criteria<sup>(1)</sup> (Table I). They were considered long lasting if the pain duration exceeded half an hour; frequent, if they occurred once a week or more often; and severe, if work capacity was adversely affected. The IHS diagnostic criteria require exclusion of secondary pathology by a physical examination and appropriate investigations. This was

not possible in our study. In addition, a self-administered questionnaire is not the equivalent of a skilled medical interview. We have also assumed that the various headache categories are mutually exclusive. However, despite these qualifications, we were able to identify diagnostic groups which appeared to have distinct features of migraine and tension type headaches.

## RESULTS

The mean age of the studied population was 20.9 ± 1.6 years (range 18 to 26 years). Males were older (20.1 ± 5.4 years) than females (19.0 ± 5.2 years) (p = 0.001). Of the respondents, 89% were Chinese, 3.1% Malays, 3.0% Indians and 0.9% were from other racial groups. The lifetime headache prevalence was 98.1%.

One hundred and forty-five of 1,208 (12.0%) in the study population had migraines; 29.8% had tension-type headaches. Only 8.8% (n = 106) of the respondents had sought medical advice for their headaches (Table II). Twenty-one of the 145 migraineurs (14.5%) and 20/340 (5.9%) of those with tension headache fell into this category. Migraineurs were more likely than tension headache sufferers (p = 0.001) to seek medical treatment. Overall, those seeing a doctor tended to have more long-lasting (p < 0.001), frequent (p < 0.001) and severe (p < 0.001) headaches, regardless of headache type. There was no gender bias for seeking medical treatment (p = 0.21). Malays were more likely to seek medical treatment than non Malays (p = 0.004). The age (x = 21.1 ± 1.4 years) and sex composition [44.3% male (n = 47) and 52.8% female (n = 56)] of those who sought medical advice did not differ significantly from that of the total surveyed population.

More of those who sought medical advice required medication for headaches than those who did not (70.8% vs. 41.0%; p = 0.001). This need for symptomatic pharmacotherapy also correlated well with greater headache duration (p = 0.004) and intensity (p = 0.004) but not with frequency (p = 0.12). Only 8% of the 106 who sought medical advice were placed on prophylactic or interval treatment. The usage of interval/prophylactic treatment did not correlate with greater headache duration, severity of frequency.

In our study population, 27 respondents used only either paracetamol or traditional medications. Although this group had more intense (p = 0.002) and longer lasting (p < 0.001) symptoms than the group on prescription medications, they did not appear

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Department of Medicine  
National University Hospital  
5 Lower Kent Ridge Road  
Singapore 119074

K H Ho, MBBS, MRCP(UK)  
Teaching Fellow

B K C Ong, MBBS, M Med  
Senior Lecturer

P N Chong, MBBS, MRCP(UK), M Med  
Associate Professor

Correspondence to : Dr K H Ho

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**Table I – IHS diagnostic criteria for migraines and tension-type headaches**

<i>Migraines without aura:</i>	
(a)	At least 5 attacks fulfilling (b)-(d)
(b)	Attacks lasting 4 to 72 hours
(c)	Headache has at least 2 of the following characteristics: Unilateral location Pulsating quality Moderate or severe intensity Exacerbated by exertion
(d)	During headache at least 1 of the following: Nausea and/or vomiting Phonophobia and photophobia
(e)	History, physical and neurological examinations do not suggest a secondary cause for the headache, or if this is the case, a secondary disorder is excluded with appropriate investigations. Alternatively, if such a disorder is present, the onset of migrainous attacks does not occur in close temporal relationship to the disorder.
<i>Migraines with aura:</i>	
(a)	At least 2 attacks fulfilling (b)
(b)	At least 3 of the following characteristics: Fully reversible aura indicating focal cerebral cortical and/or brainstem dysfunction. At least one aura symptom develops gradually over more than 4 minutes or 2 or more symptoms occur in succession. No single aura symptom lasts more than 1 hour. Headache followed aura with a free interval of less than 60 minutes.
(c)	History, physical and neurological examinations do not suggest a secondary cause for the headache, or if this is the case, a secondary disorder is excluded with appropriate investigations. Alternatively, if such a disorder is present, the onset of migrainous attacks does not occur in close temporal relationship to the disorder.
<i>Tension-type headache:</i>	
(a)	At least 10 previous episodes of headache fulfilling criteria (b)-(d)
(b)	Headaches lasting from 30 minutes to 7 days
(c)	At least 2 of the following pain characteristics: Pressing/tightening (non-throbbing) quality Mild or moderate intensity Bilateral location No aggravation by physical activity
(d)	Both of the following: No nausea/vomiting Only one or neither of photophobia and phonophobia were present

**Table II – Characteristics of subjects who presented to medical attention**

	Presented (n=106)	Did not present (n=1102)
Male : female ratio	47:56=1:1.19	561:505=1.11:1
Mean age ± SD in years	21.1±1.4	20.9±1.6
Number of non-Chinese (%)	15 (14.1)	70 ( 6.4)
Number of migraineurs (%)	21 (19.8)	124 (11.3)

to have less relief from pain ( $p < 0.001$ ).

## DISCUSSION

The surveyed population reflects the multi-racial composition of the Singapore society. A subjective impression that headache referrals to our clinical service has an over representation of non-Chinese could not be confirmed by this study because of the relatively small number of non-Chinese questionnaire respondents.

The proportion of respondents seeking medical attention for headaches in this undergraduate group was lower than the 16%-56%<sup>(2,4)</sup> reported in other studies. Those seeking medical attention tended to be female and to have migraine rather than tension headaches. This finding is in broad agreement with that of other investigators<sup>(2,5)</sup>. We feel that this may be due to the associated symptomatology that may accompany migraine (ie aura, unilateral pain, nausea/vomiting) which may have precipitated a medical consultation to exclude an intracranial pathology. The survey also showed the expected finding that respondents with more severe, frequent and long-lasting headaches sought medical advice.

Non-prescription medication appears to be as effective in symptom relief as prescription medication in relieving headaches of equivalent severity. This may reflect the fact that many patients seek medical advice not so much for pain relief as for exclusion of serious pathology. The poor correlation between prophylactic or interval treatment and improved headache severity is difficult to interpret, as the absolute number identified in this survey is small. This may reflect more refractory headaches, ineffective treatment or methodological difficulties. The percentage of respondents on prophylactic treatment is comparable to that seen in other reports<sup>(2)</sup>.

## CONCLUSION

Headache is a common problem in the surveyed undergraduate population. Only a small proportion of headache sufferers seek medical attention and these seem to be migraineurs or individuals with more severe pain. Overall, simple analgesics like paracetamol and traditional cures seem to work as well as prescription drugs in our study population.

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