

## Frequency and Pattern of Headache among Medical Students at Enugu, South East Nigeria.

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### SUMMARY

**OBJECTIVE:** To ascertain the Frequency and pattern of primary headaches among young Nigerians as represented by medical students in the University of Nigeria, Enugu Campus, South East Nigeria.

**METHODS:** This was a cross-sectional descriptive interview-based study using structured headache questionnaire. Consent was obtained and the results interpreted following the guidelines of the International Headache Society.

**RESULTS:** The one year Frequency of headache of any type was 88.3% (86.7% in males and 90.4% in females). The Frequency for migraine, tension-type headache and chronic daily headache was 18.1% (males 16.3%, females 20.5% with male: female ratio = 1:1.3), 36.8% and 17% respectively.

**CONCLUSION:** There is a high Frequency of headache of several types - migraine, tension type headache and chronic daily headache - among medical students. Migraine was 1.3 times commoner in females than in males.

**KEY WORDS:** Frequency, Primary Headache, Migraine, Tension Type Headache, Chronic Daily headache.

students of the college of medicine University of Nigeria Enugu campus in March 2009 who were 18 years and above. To ascertain the overall Frequency of primary headaches, subjects were asked if they have ever had a headache not associated with fever or any other disorder. They were to note the severity of headache based on a scale of mild, moderate and severe. The impact of these severe headaches on the daily activity and the number of days they occur in a month were recorded. The character of the pain, location, duration, and the total numbers of times throughout the person life were also noted. Questionnaires were completed at home and returned after 48 hours. Data obtained was manually sorted out, coded into a personal computer. Data was presented in tables, for continuous variables mean values and SD were calculated. Frequency of migraine and tension headaches were expressed as percentages. Mean values were compared using the independent t-test and ANOVA. Data was analyzed using SPSS version 16.

**Sample Size.** The prevalence of migraine in Nigeria is 6.7%<sup>8</sup>. Based on this prevalence, a sample size greater than 100 was deemed sufficient for improved accuracy.

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### INTRODUCTION

Headache maybe the commonest neurological disorder in the community with severity ranging from a trivial nuisance to severe disabling acute or chronic disorder, and may impose a substantial burden on sufferers and on society.<sup>1</sup> Although data from the last century revealed that primary headaches were rare among Africans,<sup>2</sup> newer data have shown varying Frequency of primary headache in Africa.<sup>3-5</sup> Local experiences show that patients suffering from other chronic neurological disorders present very late to doctors and sometimes never do so.<sup>6</sup>

### METHODS

This was a cross sectional study using a questionnaire based on the ISH 2004 classification of headache disorders.<sup>7</sup> To reduce the effect of cross cultural interpretation and wrong understanding of terms, the questionnaire was in English language. The questionnaire was distributed to consecutive consenting

### RESULTS

Of the 250 questionnaires distributed, 180 were returned, from which further 9 were disqualified for uncompleted biodata or serious omissions. There were 98 (57.3%) males and 73 (42.7%) females (male female ratio of 1.3:1), 151(88.3%) reported a history of at least one attack of headache in the last one year. Males were 85 (56.3%) and females 66 (43.7%) and the male-to-female ratio of 1: 0.78). The age range was 18-39 years with a mean of 23.96 ± 3.05, but was slightly higher for males 24.20± 2.75 than for females 23.69± 3.54. The gender and age distribution are shown in table 1.

The 1 year frequency rate of migraine and tension headaches is shown in table 2. The 1 year frequency of migraine headache was 18.1%( 31), and was higher in females 20.5%(15) than in males 16.3%(16) with a ratio of 1:1.3. The commonest aggravating factors were stress, poor sleep and noise (for all 31cases) (100%), hunger 13 (41.9%), excessive sleep 5(16.1%) and pollens and coffee 3 (9.7%) respectively. Smoking and sex were aggravators in 1 case (3.2%) each. Common relieving factors were medication (including analgesics) for all 31 cases (100%) and adequate rest in 20(64.5%). All

subjects with migraine used drugs (self-medication) to alleviate the symptoms.

The frequency of chronic migraine (symptoms occurring in more than 15 days in a week) was 16.1% of the

migraineurs. Tension headache was documented 63(36.8%) of the student's population, and 19.8% had chronic daily headache. The sex distribution of various

Table 1. Sex and Age distribution of the Students.

Age range	18-19	20-29	>30-39 years
Males	2(33.3)	97(58.4)	5(62.5)
Females	4(66.7)	69(41.6)	3(37.5)
Total	6(3.5)	166(97.1)	8(4.7)

Table 2. Distribution of various types of headache.

	*HH	MH!	TH	CDH	2 <sup>nd</sup> H <sup>#</sup>
N**	151(88.3)	31 (18.1)	63(36.8)	29(17)	28(18.5)
Males	85(86.7)	16(16.3)	36(36.7)	21(21.4)	22(14.6)
Females	66(90.4)	15(20.5)	29(39.7)	8(11)	6(4)

\*HH= History of Headaches.

MH! Migraine Headache

TH Tension Headache

CDH=Chronic daily headache

N\*\*=number with history of headaches in the past 1 year.

2<sup>nd</sup> H<sup>#</sup> Secondary headache only and those without a history of headache in the past 1 year

## DISCUSSION

This study demonstrates a higher frequency of headache in females than males and a high frequency of primary headache in students aged 18-39 years. A Meta-analysis had confirmed low frequency of primary headaches in Africa and Asia with the highest frequency occurring in North America<sup>1</sup>. However, the low frequency of headache reported in Africa in the past may represent an underestimate as recent studies among undergraduate students did not confirm this<sup>9-13</sup>. Other reasons may be changing lifestyle especially in the young, lack of well designed epidemiological studies, poor health seeking behaviors, cultural beliefs<sup>6</sup> and possibly easy access to analgesics.

The 1-year frequency of headache in this study (88.3%) is higher than reports elsewhere in the continent and in the Middle East<sup>2-4,9-13</sup> but similar to findings among caucasians<sup>1</sup> In Ibadan, South West Nigeria<sup>2</sup> the crude life time frequency of at least one episode of headache was 51% (50% in males and 52% in females), 23.1% in Tanzania<sup>3</sup>. In Qatar<sup>9</sup> the 1 year frequency was 67.9% of men and 78.2% of women. Among the Caucasians, headache occurs in about 93.8% of men and 99% of women,<sup>13,14</sup> similar to findings in our study. The high frequency among our subjects is not unexpected

considering the population surveyed.<sup>14,15</sup> The frequency of headache among the sexes was also comparable to other studies in the West and Middle East<sup>9,10,15</sup>.

Although the epidemiology of headache disorders is only partly documented, population-based studies have mostly focused on migraine. This study reports a frequency of 18.1 % of migraine (with and without aura). Because of small numbers, differences in risk factors were not assessed. Migraine is 2-3 times more frequent in females<sup>10,12</sup> than males. However studies in Africa<sup>2,3,4,5</sup> have not consistently found this to be so. This study showed more females to be affected but not to the same extent. For adult populations, the estimates of migraine frequency range from 3.3 to 21.9% for women and 0.7-16.1% for women<sup>9</sup> and approximately 10% to 12% of the population in Western countries.<sup>1,16,17</sup> In the United States, the frequency of migraine was 17.6% in females and 5.7% in males.<sup>15-17</sup> In Denmark,<sup>13</sup> the lifetime frequency of migraine of any type of migraine was 18%, 12% in males and 24% in females with a male: female ratios of migraine disorder of approximately 1:2. In another Danish<sup>18</sup> study the 1 year frequency of migraine was 6% in men and 15% in women and a frequency ratio of 2.5

Studies in the Middle East also show a higher frequency of migraine than in Africans. The frequency of migraine in Qatar<sup>9</sup> among men was 7.8% and among women 8.0%. The female: male ratio was 1.02. Population based study in Nigeria,<sup>2</sup> reported a frequency of 5.3% (5% males and 5.6% in females; ratio 1.12), in Ethiopia<sup>4</sup> the 1-year frequency was 3.0% (4.2% for females and 1.7% for males ratio 2.5) and 5.0% (female 7.0%; male 2.6% ratio 2.7) in Tanzania.<sup>3</sup> As expected in our survey, there was a high frequency of migraine because of the age group studied, 18.1% (20.5% in females and 16.3% in males, a ratio of 1.3) with a comparable female male ratio to findings in Nigeria<sup>2</sup> of 1.12 and 1.2 in Denmark.<sup>18</sup> A study of Kenyan<sup>5</sup> students showed a higher frequency of migraine (38%). A similar study among Nigerian students documented a prevalence of migraine of 5.1-9.6%<sup>10-12,10,11</sup>. The wide differences in these studies may be due to both methodological errors and cultural attitude of the various populations. Physician diagnosis of migraine is better than questionnaire based diagnosis which was used in our study and various other studies. Among Ethiopians<sup>4</sup> the most frequent triggering factors were emotional stress (90%), changes of weather (78%), physical exhaustion (75%) which is different from our findings of noise, stress and poor sleep in all the migraineurs.

Tension type headache (TTH) was noted in 63(36.7%) of the students. This is lower than the frequency of 50% found in a similar study in Kenya<sup>5</sup>.

It is the most common headache disorder, reported by over 50% of some populations.<sup>5,12,19</sup> African community-based studies showed varied prevalence. In one study only 1.7% of the population was affected<sup>7</sup>. Studies among University Students in Nigeria have documented high but varied frequencies<sup>10,12</sup>. Our sample included the age group with the highest frequency of primary TTH. The high prevalence of tension headache among student may be related to the academic activities events such as examinations.

TTH, like migraine, is commoner in females than males as we also found in our series affecting 1.5 women to every 1 man. The slightly lower ratio we found may be because of the higher proportion of males in our study. In Qatar,<sup>9</sup> the lifetime frequency of tension-type headache was 69% in men, and 88% in women.

In this study, 17% of the students met the criteria for chronic daily headache (CDH)<sup>20</sup>. The prevalence of CDH is 3-5% in population based studies<sup>20-24</sup> and in 70-80% of patients attending headache clinics in the USA<sup>22</sup>. The high frequency in this study may be due to high rates of episodic migraine and TTH as well as medication overuse. The disability associated with CDH is substantial<sup>25,26</sup>; among students such disabilities may be much higher because of stressful academic activities. We

did not explore the subtypes of CDH and associated disability, however there is a need for further studies to explore its impact in the population.

## CONCLUSION

This study has shown headache to be more frequent among medical students than reported for the general population in Nigeria and other parts of Africa. Additional studies are indicated to more accurately define the risk factors and conditions that act as co-morbidity.

## STUDY LIMITATIONS:

Community based studies are more likely to give a better understanding of the burden of headache in our society. Self administered questionnaires may have some bias because respondents may overestimate the frequency of headache.

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