Migraine and tension-type headaches

M. Abduljabbar, FRCP (C), A. Oggunniyi, MD, A. Daif, MD, S. Al-Balla, FRCP, S. Al Ballaa, FRCP, A. Al-Dalaan, ABIM, FACRheum, S. Bahabri, FPCP (C), M. Sukheit, D.Sc.

ABSTRACT

Objectives: There is little information on headache syndromes in different communities in Saudi Arabia. The aim of this study is to determine the prevalence of migraine and tension-type headaches in 5 small communities in the Al-Qassim region.

Methods: Community based door-to-door survey involving the administration of a structured questionnaire with additional neurological examination. Classification of headache was made according to the IHS criteria. Subjects with single episodes were excluded.

Results: Out of the 10,267 individuals screened, 495 had migraine and tension-type headache giving a crude prevalence of 4.82% (95% CI = 3.8-5.8%). With standardization, the rate increased to 5.5% (95% CI = 5.1-5.9%). The female sex-specific prevalence was 6.1% (95% CI = 5.5-6.8%), and for males it was 3.4% (95% CI = 2.8-4.0%). The prevalence rates of migraine and tension-type headache was 2.45% (95% CI = 2.2-2.74%) and 2.37% (95% CI = 2.07-2.66%) respectively.

Conclusion: The low headache prevalence was ascribed to cultural factors and the relatively young population. Studies in other communities in the Kingdom are indicated for confirming our results as well as assessing the role of stress and traditional lifestyles.

Keywords: Prevalence, headache, migraine, tension-type.


Headache is a common disorder worldwide and in its worst form can be quite incapacitating with regards to social activities and work performance. The prevalence of headache varies from study to study and from community to community even throughout the same country.1-3 The reasons for these variations include: differences in definitions, classification scheme utilized and the age-group of the sample studied. In the United States and Western Europe, the prevalence varies between 16% and 96%;4-14 The only community-based study of headache, hitherto, in Saudi Arabia was carried out in Thugbah, in the Eastern Province, and the prevalence reported was 12%.5 For comparison purposes, we determined its prevalence in individuals living in rural communities in the central region of the Kingdom for comparison purposes.

Methods. This door-to-door survey was undertaken in 5 adjacent, small communities (population range = 1,035 - 4,520 inhabitants) in the Al-Qassim region, which is located some 350 kilometers north of the capital city, Riyadh. The names of the towns and the number of households listed during the pilot phase are: Asih (629), Guraini (304), Amar (279), Al-Rabia (200) and Thadiq (146). Available infrastructure in these communities is limited when compared with the larger towns in the same region (Buraidah, Onaiza, Central Badiya and Alrass). The lifestyle is more traditional and the main occupation is non-mechanized farming. Approval for the study was obtained from the Institution’s review committee and the Regional Health Authorities. The data collection period was from 1 October 1994 to 31 March 1995. Informed

From the Departments of Medicine, (Abduljabber, Oggunniyi, Daif, Al-Balla, Al Balla), Family & Community Medicine, (Sukheib), King Khalid University Hospital, King Saud University and King Faisal Specialist Hospital & Research Centre, (Al-Dalaan, Bahabri), Riyadh.

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Address correspondence and reprint request to: Dr. Mohammed Abduljabbar, Associate Professor of Neurology, King Khalid University Hospital, PO Box 7805 (38), Riyadh 11472, Saudi Arabia. Fax. No. 966 1 4672424. Tel. No. 966 1 4671496/1532.
Table 1 - Age-specific prevalence of migraine and tension-type headache.

<table>
<thead>
<tr>
<th>Age-group (years)</th>
<th>Sample size*</th>
<th>Number with migraine</th>
<th>Headaches - tension-type</th>
<th>Age-specific rates &amp; (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;15</td>
<td>4149 (1967)</td>
<td>50 (0.49%)</td>
<td>38 (0.37%)</td>
<td>2.12% (1.7 - 2.5)</td>
</tr>
<tr>
<td>15 - 19</td>
<td>1204 (655)</td>
<td>32 (0.31%)</td>
<td>23 (0.22%)</td>
<td>4.57% (3.4 - 5.8)</td>
</tr>
<tr>
<td>20 - 39</td>
<td>3225 (1921)</td>
<td>85 (0.83%)</td>
<td>80 (0.78%)</td>
<td>5.12% (4.4 - 5.9)</td>
</tr>
<tr>
<td>40 - 69</td>
<td>1483 (674)</td>
<td>74 (0.72%)</td>
<td>82 (0.80%)</td>
<td>10.52% (9.4 - 12.7)</td>
</tr>
<tr>
<td>70+</td>
<td>206 (64)</td>
<td>11 (0.11%)</td>
<td>14 (0.14%)</td>
<td>12.14% (9.8 - 12.7)</td>
</tr>
<tr>
<td>Total</td>
<td>10267 (5281)</td>
<td>252 (2.45%)</td>
<td>243 (2.37%)+</td>
<td>495 (4.82%)+</td>
</tr>
</tbody>
</table>

* Females in parentheses
+ Includes 6 patients with unspecified ages

consent was obtained from the head of each household, the subjects or their surrogates prior to the administration of the structured questionnaire by trained medical students and health workers. Prior to the field survey, they had two weeks training on questionnaire administration/completion, and were assessed periodically during this phase to ensure consistency as well as accuracy of the data that was collected and subsequently recorded. Inter-rater reliability was assessed using kappa statistics and the agreement approached 1.0.

The following information was obtained from each subject: demographic data (age, sex, nationality, occupation), and presence or absence of headache. When a positive response to the headache question was obtained, further inquiries were made on the description of the symptoms, age at onset, attack frequency, aura, if any, associated complaints, medications used, family history, and precipitants, if known. Subjects with single attacks were excluded. A random 10% of the subjects were reviewed to ensure accuracy. A brief examination for the detection of neurologic deficits and papiledema was carried out in a standardized manner in all subjects who answered positive.

Migraine was defined as idiopathic, recurrent, unilateral, throbbing headache disorder which could be associated with nausea, vomiting, gastrointestinal discomfort and visual symptoms. There was no differentiation into migraine with and without aura. Tension-type was diagnosed if the recurrent headache symptoms were bilateral with episodic tightening or pressing pain in the head or of vertex location. The pain did not usually disturb routine daily activities. The definitions were derived from the International Headache Society Classification.

The diagnoses were arrived at by consensus agreement of the investigators. Frequency count was carried out for all the variables. Cross tabulations were carried out for the headache types and demographic variables. The lifetime prevalence rates of these recurrent headache disorders with age-adjustment and the 95% confidence intervals were calculated using standard methods. The rates were standardized to the 1995 world population using direct methods.

**Results.** Throughout the 5 communities, we studied 10,267 individuals comprising 5,281 (51.4%) females and 4,986 (48.6%) males out of the expected total population of 12,525. The remaining 2258 (18%) inhabitants could not be reached even on subsequent visits. All of the patients that agreed to participate were met at home during the survey. Their ages ranged between 1 and 99 years with a mean of 36 years (SD = 18 years). Four thousand, one hundred and forty-eight (40.4%) subjects were below the age of 15, and only 206 (2%) subjects were above the age of 70. Table 1 shows the age and sex distribution of the subjects. There were 9,182 (89.4%) Saudis, 6,008 subjects were unmarried, and consanguinity rate in the community was 40.2%.

A total of 554 subjects had recurrent headaches and 495 (89.4%) were diagnosed as migraine and tension-type. The prevalence of these headache disorders was 4.82% (95% CI = 3.8 - 5.8%). The prevalence rates were similar in the 5 communities. With standardization to the 1995 world population, the prevalence rose to 5.5% (95% CI = 5.1 - 5.9%). The peak age frequency was in the third and fourth decades but there was a progressive increase in the age-specific rates from 2.12% in the population below 15 years to 12.14% in those older than 70 years as shown in Table 1. Three hundred and twenty three (65.3%) cases were female and 172
(34.7%) were male. The male sex-specific prevalence rate was 3.4% (95% CI = 2.8-4.0%), and for females it was 6.1% (95% CI = 5.5-6.8%).

Two hundred and fifty two (50.9%) subjects had migraine while 243 (49.1%) were diagnosed as having tension-type headache. Their respective prevalence rates were 2.45% (95% CI = 2.2-2.74%), and 2.37% (95% CI = 2.07-2.66%) as shown in Table 1. The peak frequency of migraine was in the 20-39 years age-group, while for the tension-type, it was in the 40-69 age-group. The age-specific migraine prevalence rates were higher below the age of 40 years, but beyond this age, tension-type became more frequent. The other symptoms recorded in the migraine sufferers were: nausea in 207, blurring of vision in another 54 and vomiting in 12 subjects. Positive family history of headache was obtained in 351 (71.8%) cases. Four hundred and one subjects (82%) used simple analgesics during the attacks.

Discussion. Al-Qassim region was chosen for this study for two main reasons; the traditional way of life and relative proximity to Riyadh. The prevalence of migraine and tension-type headaches in this area in spite of standardization was low. The low prevalence could be explained on the basis of the communities being rural. In comparison, the rate obtained in Thugbah, which has become gradually urbanized as a result of establishment of oil-related industries in the surrounding cities of Dammam, Al-Dhahran, Al-Khobar was marginally higher (12%). This could suggest that headache prevalence may be related to the state of development and urbanization, and it would be expected to be lower in rural communities. Stewart et al did not observe any urban-rural differential in prevalence in their studies in parts of the United States. It is conceivable therefore that other factors apart from the state of technological development might be involved. The traditional lifestyles and strong religious beliefs of the people living in the central region could suggest less stress and probably less headaches. However, subjective health beliefs could affect the perception of disease and thus influence the frequency of positive responses obtained. The role of stress in this regard would need to be investigated in subsequent studies.

The prevalence obtained is similar to the rates reported in many communities in developing countries like China, Ecuador and Ethiopia which varied between 5 and 7% inspite of the different diagnostic criteria and definitions used, whereas in western countries, the values ranged between 16 and 96%. One reason for this could be the lower burden of headache in childhood and adolescence. Therefore, in developing countries with predominantly young population, headache prevalence would be lower. Secondly, headache is a subjective symptom, and it is possible that only those with severe incapacitating attacks would recall them. This subjective bias would result in under-reporting of attacks, and hence low prevalence rate. In this study, we excluded subjects with single attacks inclusion of whom could have increased the rates as was shown by a study in Nigeria which reported a high prevalence of 51%. The use of different diagnostic criteria in different studies makes strict comparison difficult.

The results confirmed the higher headache prevalence in females compared to males as many other studies have shown. Also in agreement with other workers, we found that the peak frequency was in the 20-39 years age-group which is the active period of life. However, the age-specific rates showed a progressive increase till the 8th decade, with tension-type headache predominating in the older subjects. The age effect may be due to the stress of getting old, worries, depression from death of peers, as well as, other medical and family problems.

The prevalence of migraine in our study of 2.45% is within the range of 0.69% and 6.3% reported in many developing countries. The lowest prevalence was reported from a Chinese study, while Tekle-Haimanot obtained a rate of 3% in Ethiopia and the highest value was obtained in rural Nigeria. The higher migraine prevalence over the tension-type is not the usual pattern in many countries, although it is well documented. For instance in Ethiopia, the one-year prevalence rates of tension-type and migraine was 3% and 1.7% respectively. Abu-Areifeh and Russell also reported the prevalence of migraine and tension-type headaches to be 10.6% and 0.9% respectively in school children. In our study, the higher frequency of migraine in our young patients, who constituted the predominant age-group, probably accounted for this disparity.

In conclusion, our study showed a low prevalence of migraine and tension-type headache in these communities. We found a higher migraine prevalence and it was ascribed to the higher frequency of migraine in children and adolescents who constituted the predominant age-group. The role of stress in headache burden in various parts of the Kingdom needs further investigation.

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References