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Epidemiology of migraine among students in Mali

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ABSTRACT

Migraine is a debilitating but benign disease that can affect the quality of life of patients, disrupt the emotional relationships and impact on educational and vocational activities. The aim of our work was to study the epidemiology and impact of migraine in schools in the urban district of GAO in Mali.

This is a cross-sectional study among students in the city of Gao. The survey was conducted in 11 schools, each of which represented a cluster. The study involved 733 students and diagnosis of migraine was made according to the 2004 IHS criteria except the criterion for the number of crises.

The overall prevalence of migraine in school was 17.3% (95% CI [14.6% to 20%]). The headache prevalence among students was 20% (95% CI [16.91% to 23.09]), it was significantly higher 23.0% in girls than in boys 14.8% ($p < 0.01$). About its impact on school life, 63.8% of students had experienced absenteeism due to migraine from 1 to 14 days in the last quarter preceding the survey with a limiting concentration in 19.2% of students with migraine.

In conclusion, migraine is common among students of Gao, it is more important in female. It has a negative impact on academic performance. It is therefore necessary to control its management to reduce the extent of the disease in this environment.

1. Introduction

Migraine is a neurological disorder manifested by attacks of idiopathic and recurrent headaches. Genes on chromosomes 1, 2, 8 and X have linked to migraine [1–3]. The classification established by the International Headache Society (IHS) in 2004 identified two types: migraine without aura (MSA), the most common form, which is isolated headache, and migraine with aura (MA) where the headache is preceded or accompanied by a focal neurological disorder, transient and progressive (visual disturbances, paresthesia, speech disorder, movement disorders) [4,5]. The International Classification of Headache Disorders-3 (ICHD-3) has a more comprehensive classification of migraine including in addition to the previously mentioned two types of migraine: chronic migraine, probable migraine, complications of migraine and episodic syndromes that may be associated with migraine [6].

Based on epidemiological characteristics, the World Health Organization (WHO) ranks migraine among the top twenty diseases with the greatest impact on the general population and among the top ten when focusing only on the female population [7]. When performed, epidemiological studies using the IHS classification give consistent results [8].

However, according to a report of INSERM in France, devoted to migraine, this disease is still often overlooked medical professionals and the general population, with a negative impact on its management [9]. Indeed 85% of migraine sufferers considered their illness as a disability, and 43% thought that there is no solution for them [10].

Approximately 5–10% of children with migraine and only one out 5 of them are diagnosed by a general practitioner [9]. However, the onset of migraine is most of the time early and 90% of cases begin before age 40 [11]. Factors inherent to school environment seems to favor the occurrence of the disease: stress, changes in lifestyle, sleep disorders,

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anxiety and frustrations are often the cause of migraine attacks. For that reason, sometimes children and adolescents are believed to invent these headaches [12]. In sub-Saharan countries, very few studies have focused specifically on migraine in the school environment. Thus, a study in Togo found headache to be an important reason for consultation in the school infirmary [12]. In addition, an epidemiological study of migraine in the general population in Madagascar has shown a higher prevalence of the disease in young [13]. In Mali, the lack of epidemiological data on a large scale of this disease among young people in general and specifically the school has motivated this study whose objective was to study the prevalence and impact of migraine on quality of School life in the urban district of Gao.

2. Population and method

This was a prospective, cross-sectional, descriptive and analytical study, which lasted 15 months from May 2009 to July 2010. The study held in the region of Gao in the North-eastern Mali, west Africa. This region covers an area of 31,288 km^2 with a population of 171,253 inhabitants. We performed a cluster sampling on the number of all 11 high schools in Gao, 6 vocational schools and five general education, each school was a cluster. The total population was 4631 pupils we pulled a sample of 733 students to participate in the survey. The selection was made by stratification in every high-school and students in each stratum were randomly selected. Fig. 1 summarizes the different strata.

Data were collected on an individual case report form which is divided three parts:

- The first part included, an anonymous study number, socio demographic information of the respondent (sex, age, educational level, type of education), clinical information (headache heredity, lifestyle, habits and the characteristics of the headache);
- The second part is related to the diagnosis of migraine. We used the criteria in IHS 2004 [4, and in the Interdisciplinary Research Group on Migraine (GRIM)] [14] to diagnose migraine in our study population;
- The third part is on the assessment of the severity of migraine, the impact of disease on quality of life and the shortcomings of the school activity, this part of the form included the MIDAS Migraine Disability Assessment [15,16] and the Headache Impact Test-6 (HIT-6) [17].

2.1. Data processing and analysis

The data collected were entered and analyzed on SPSS version 12.0. The Chi^2 test was used for the relationship between qualitative variables and differences were considered significant at a value of $p \leq 0.05$.

2.2. Ethical considerations

The survey was conducted with the permission of the Academy of Gao teaching and administrative authorities of the various schools. Participation in the study was strictly voluntary, the survey form was anonymous and personal and clinical information was collected only after obtaining informed assent from the pupils and informed consent from their school teachers and parents (when reachable). No compensation was given in exchange for the study participation, acknowledgments were sent to the participants for collaboration in this work and a feedback of the results was made to all the structures involved in the study. Students diagnosed with migraine during the study were supported as required according to a logical basis, with the available medications in Gao [12].

3. Results

The prevalence of migraine was 17.3% (127/733) in the school population of Gao. Students participating in the study were 69.7% (511/733) male and 30.3% (222/733) female. The majority (75.4% of cases) of students were aged from 15 to 18 years. Migraine was slightly more frequent in females with a prevalence of 23% (51/222) as compared to 14.8% (76/511) in males ($p \leq 0.027328$) [Table 1].

In students with migraine, first degree family history of headaches was found in 78% of cases: related to the mother in 57% of cases, and related to the father in 17% of cases.

Students in general education represented 80.1% and those in vocational education 19.9%. The frequency of migraine was slightly higher in vocational education. Fig. 2 summarizes the distribution of all participants according to their socio-demographic characteristics and prevalence of headache and migraine in the population of 635 individuals (86.6%) reported having had headaches during the 3 months preceding the survey. The clinical diagnosis of migraine (with or without aura) was established in 127 students e.g. 20% of the population suffering of headache. The rest of the headache cases were distributed as follows: 38% of tension headaches and 42% of symptomatic headache related to a disease or an infection (malaria, ENT or dental affection and others).

The median age of the headache is 3 years. The duration of the most intense crisis was classed as follows: < 24 h (3.9%), 24 h–72 h (71.6%) over 72 h (24.4%).

Characteristics of migraine

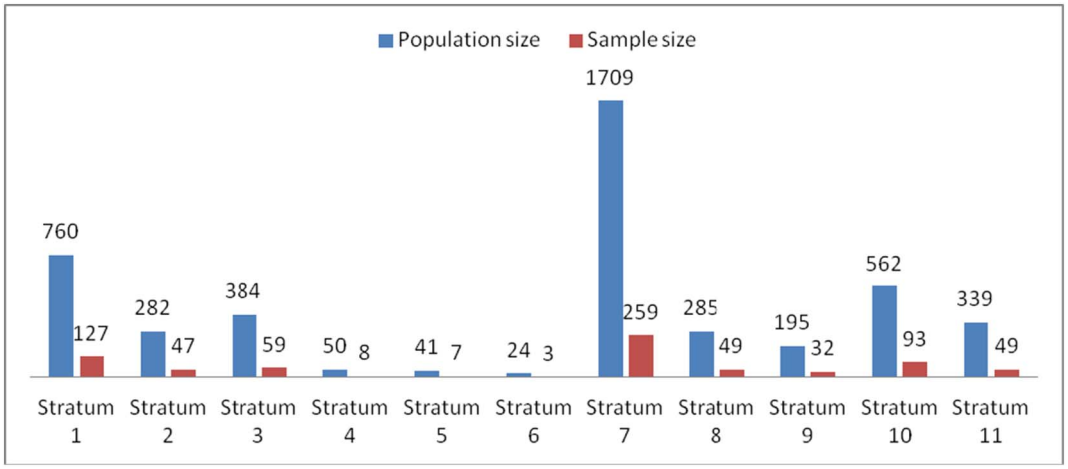

Fig. 1. Representative stratified sampling.