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Quality of Life in Patients with Headaches at the Neurology Outpatient Clinic of Gabriel Touré University Hospital

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Abstract

Introduction: Headaches are a global health concern affecting people of all ages, ethnic groups, income levels, and geographic locations. According to the World Health Organization (WHO), headaches are one of the most disabling conditions worldwide. **Objective:** To assess the clinical characteristics and quality of life of patients aged 18 - 75 years presenting with headaches in the outpatient neurology department of Gabriel Touré University Hospital. **Patients and Methods:** We conducted a prospective cross-sectional study from June 1, 2022, to August 31, 2022, at Gabriel Touré University Hospital. The study included all patients aged 18 - 75 years who were seen for headaches lasting at least three months, as well as those already under follow-up for headache disorders, provided they gave informed consent. We used the 2017 *International Classification of Headache Disorders* (ICHD-3) diagnosis criteria. Pain intensity was assessed using a visual analogue scale (VAS), and the impact on quality of life was evaluated using the Wilson and Cleary Quality of Life Scale (QVLS). **Results:** A total of 943 patients were consulting the service during the study period; 60 presented with headaches, a prevalence of 6.36%. Women were the most represented gender, and the predominant age range was 36 - 56 years. Migraine was the most frequent type of headache (38.3%), followed by tension-type headache (23.3%) and chronic headache (27.3%).

The pain was pulsatile in 33.3% and left-sided in 51.7% of patients. Based on the VAS, 51.3% of participants rated their pain intensity as five or higher, and 41.7% reported regular use of medication. In most cases (76.7%), patients had consulted a neurologist directly. Physical activity worsened headaches in 53.3% of cases. More than half (56.7%) reported mobility difficulties, 51.7% had trouble washing or dressing alone, 63.3% were unable to do their daily activities, 71% experienced severe pain and discomfort, and 66.7% were extremely anxious and depressed. In our study, 56.7% of patients had mobility problems, and 26.7% were bedridden. Autonomy was impaired, with about 52% reporting difficulties in washing or dressing independently. Daily activity performance was impaired in 63% of patients (household tasks, studies, leisure). Severe anxiety and depression were present in nearly 68% of patients. **Conclusion:** Headaches are common in our setting, with prevalence rates comparable to those reported in other African community-based studies. Their impact on patients' quality of life is substantial, representing a significant public health concern.

Keywords

Headache, Quality of Life, Neurology Department, Gabriel Touré University Hospital

1. Introduction

Headache is defined as pain of variable intensity and duration, which may be pulsating, burning, pressing, heavy, or otherwise, localized to or radiating across one or several parts or the whole of the cranial vault [1].

Globally, the prevalence of headaches in adults (at least one episode during the past year) is estimated at 58% [2]. Despite regional differences, headaches are a major public health issue worldwide, affecting individuals of all ages, races, income levels, and regions. Headaches are among the most common symptoms encountered in medical practice, with over 90% of individuals reporting a lifetime history, of whom 58.4% have experienced them [2].

According to the Global Burden of Disease study (GBD 2016), tension-type headache and migraine rank as the second and third most prevalent conditions worldwide, just after dental disorders [2]. In sub-Saharan Africa, most studies have been conducted on specific subgroups (hospital populations, children, workers, students, etc.) [3] [4]-[6] [7] [8], reporting widely variable prevalence rates. This disparity prompted recent studies within the framework of the global campaign against headache, using rigorous methodology and International Headache Society (IHS) diagnostic criteria [9].

The first large-scale study in sub-Saharan Africa, conducted in Zambia, reported an annual prevalence of headache of 61.6%, with migraine at 22.9% and tension-type headache at 22.8% [10]. The second, conducted in Ethiopia, found a

prevalence of 20.6% for tension-type headache and 17.7% for migraine [11]. These findings confirm that headaches, in Africa as elsewhere, represent a major public health issue with significant negative impact on quality of life and substantial socioeconomic burden [2] [12].

In Mali, studies have included a school-based survey showing an overall headache prevalence of 20% and migraine prevalence of 17.3% in a cohort of 4631 students in 2017 [5]. Given the burden of the problem, especially in the active population, our study was undertaken.

2. General Objective

To assess the clinical characteristics and quality of life of patients aged 18 - 75 years attending the neurology outpatient clinic at Gabriel Touré University Hospital for headaches.

Patients and Methods

This was a prospective, cross-sectional study conducted from June to August 2022 at Gabriel Touré University Hospital. It included all neurology outpatients with headaches lasting at least three months, or those already followed for headache, aged 18 - 75 years, and who provided informed consent to participate in the study. We used the diagnostic criteria from the ICHD-3 (2017) to classify the headaches. Patients unable to understand the questionnaire were not included in this study.

Data were collected using a questionnaire including five sections. It includes sociodemographic data (sex, age, occupation, religion, education, marital status, professional experience, residence, and monthly income), clinical features of headache, therapeutic pathways, impact on professional life, quality of life, assessed with the QVLS scale (physical, psychological, functional, and social aspects).

Interviews were conducted individually during outpatient visits, and we performed a descriptive analysis. Migraine was used as a dependent variable (recorded as yes/no) for etiological analysis with independent variables at a significance threshold of $\alpha = 0.05$. Odds ratios (ORs) were reported with 95% confidence intervals (CI = 95%).

3. Results

The prevalence of headaches was 6.36% (60/943 patients). Women were predominant (sex ratio 0.62), and housewives represented 25%. In our study population, 43.3% had no income, and 73.3% lived in an urban area. Past cardiovascular medical history was reported in 18%. Family history of headaches was reported by 45% and half (50%) had their first headaches between ages 18 and 36 (**Table 1** and **Table 2**).

About 45% had headaches 1 - 5 days/week (2 - 20 days/month), often lasting less than 10 minutes. The majority (73.3%) took medication during headache attacks, and 41.7% used it daily. Paracetamol combined with NSAIDs, or tramadol

Table 1. Sociodemographic and clinical characteristics of participants.

Monthly income (n = 60)	
Variable	**n (%)**
Three times the minimum wage (SMIG)	12 (20.0)
Twice the minimum wage	14 (20.3)
Equal to the minimum wage	5 (8.3)
Below the minimum wage	3 (5.0)
No income	26 (43.3)
SMIG: Guaranteed Interprofessional Minimum Wage (40,000 FCFA in Mali).	
Age at headache onset (n = 60)	
Variable	**n (%)**
18 - 36 years	30 (50.0)
37 - 56 years	23 (38.3)
57 - 76 years	7 (11.7)
Headache frequency (n = 60)	
Variable	**n (%)**
Daily	14 (23.3)
1 - 5 days per week	27 (45.0)
6 - 9 days per month	19 (31.7)
Frequency of medication use (n = 60)	
Variable	**n (%)**
Daily	25 (41.7)
2 - 4 days per week	22 (36.7)
More than 10 days per month	13 (21.7)
Headache patterns reported by participants (n = 60)	
Variable	**n (%)**
A single headache type	53 (88.3)
More than one headache type	7 (11.7)
Types of headache (n = 60)	
Variable	**n (%)**
Migraine	23 (38.3)
Chronic headache	17 (28.3)
Tension-type headache	14 (23.3)
Post-traumatic headache	2 (3.3)
Psychogenic headache	2 (3.3)

Continued

Other headache types	2 (3.3)

Other headache types included trigeminal neuralgia, otorhinolaryngological disorders, ophthalmological disorders, and metabolic disorders.

Headache severity without treatment (n = 60)	
Variable	**n (%)**
Moderate	5 (8.3)
Moderate to severe	34 (56.7)
Severe	21 (35.0)
Pain characteristics (n = 60)	
Variable	**n (%)**
Pulsating	20 (33.3)
Throbbing	10 (16.7)
Tightening	6 (10.0)
Pressing, constricting, or squeezing	16 (26.7)
Thunderclap headache	8 (13.3)
Other	0 (0.0)
Headache-related disability (n = 60)	
Variable	**n (%)**
Able to perform all usual activities	8 (13.3)
Unable to perform some activities	39 (65.0)
Anxiety and depression (n = 60)	
Variable	**n (%)**
Neither anxious nor depressed	7 (11.6)
Moderately anxious and depressed	13 (21.7)
Extremely anxious and depressed	40 (66.7)

Table 2. Factors associated with migraine.

Variable	Odds Ratio (OR)	95% CI	p-value
Male sex	0.281	0.102 - 0.774	0.025
Female sex	Reference	-	-
Age 18 - 36 years	3.558	1.292 - 9.801	0.025
Age 36 - 56 years	0.281	0.102 - 0.774	0.025
Age 56 - 75 years	Reference	-	-
No monthly income	10.545	2.303 - 48.280	0.001
Literate participants	9.500	2.640 - 34.137	0.001
Students	11.800	1.460 - 95.393	0.005

was the commonly used drug by our patients (35%). Most patients (88.3%) had recurrent headache types, with migraine found in 38.3%. In 61.7% of cases, migraine frequency was 2 - 4 days/week; 63.3% reported episodes lasting less than 10 minutes without treatment. Pain intensity was moderate to severe in 56.7%, with VAS scores between five and eight in 51.3%. Pain was pulsatile in 55% and left-sided in 51.7%.

Physical activity worsened headaches in 53.3%, and 65% reported reduced ability to perform daily tasks. Sensitivity to light or noise was reported by 23.3%. During attacks, 61.7% preferred staying in the dark, and 53.3% remained in silence. Triggers included light (40%); among women, menstruation accounted for 10%.

Half of the patients had consulted a neurologist directly. Amitriptyline was used preventively in 76.7% and most of the patients (56.7%) had never been hospitalized for headaches. Among hospitalized patients (45%), 23.3% stayed fewer than three days, and 70% required sick leave (50% for 1 - 10 days).

Regarding quality of life, 56.7% had mobility problems, 26.7% were bedridden, 51.7% had difficulty with self-care, and 63.3% could not perform routine activities. Severe pain/discomfort was reported by 75%, while 66.7% were extremely anxious or depressed.

Significant associations were found between migraine and sex ($p = 0.025$), migraine and age ($p = 0.025$), and migraine and student status ($p = 0.005$). Migraine was also linked to education level ($p = 0.001$). Tension-type headache was associated with monthly income ($p = 0.001$), marital status ($p = 0.001$), and literacy ($p = 0.025$). There was no significant association found between chronic headaches and sociodemographic variables (Table 3 and Table 4).

Table 3. Factors associated with tension-type headache.

Variable	Odds Ratio (OR)	95% CI	p-value
Male sex	1.385	0.450 - 4.265	0.750
Age 36 - 56 years	1.941	0.610 - 6.178	0.500
Married participants	16.319	2.060 - 129.290	0.001
Literate participants	4.265	1.120 - 16.577	0.025
Civil servants	5.364	0.607 - 47.367	0.990

Table 4. Factors associated with chronic headache.

Variable	Odds Ratio (OR)	95% CI	p-value
Female sex	2.750	0.904 - 8.368	0.990
Age 56 - 75 years	1.147	0.410 - 3.206	0.900
Married participants	1.514	0.535 - 4.286	0.500
Housewives	4.214	0.450 - 38.860	0.250
Retired participants	5.556	0.760 - 56.220	0.990

4. Discussion

4.1. Epidemiological and Sociodemographic Aspects

Sex ratio: Female predominance (sex ratio 0.62) corroborates with the literature, including studies by Zebenigus *et al.* in 2016 (55.7%) [11], Mbewe *et al.* in 2015 (58.5%) [10], Diallo SH *et al.* in 2018 [7], and Ayzenberg *et al.* [13].

Socio-professional category: Housewives accounted for 25% of cases. This may reflect socio-cultural roles, consistent with a study reported by Zebenigus *et al.* in 2016 (34.8%) [11].

Socioeconomic level: Almost half (43%) of patients had no income, compared to 23.7% earning the minimum wage (40,000 CFA) and 20% earning triple the minimum wage. Economic burden is borne by patients and employers in terms of absenteeism and lost productivity [12].

Education: Most patients (80%) had primary, secondary, or university education; 20% were illiterate. These findings are like those of El-Sherbiny *et al.* in 2015 (22.1%) [14].

4.2. Headache Prevalence and Subtypes

Headaches are a major public health problem worldwide, negatively impacting people's quality of life. Studies reporting prevalence of headaches have shown high variability across countries, Allena *et al.* in Italy (83.4%) [15]; Boardman *et al.* in UK (92.6%) [16]; Steiner *et al.* in Europe (79.6%) [17]; WHO survey in 2011 found 63.9% in the Americas 46.5%, in Southeast Asia and 21.6% in Africa (with majority of sub-Saharan Africa) [18].

Previous African studies reported migraine prevalence of 24.8% in Benin [18], 51.4% in Egypt [14], 44.9% in Ethiopia [11], and 72.0% in Zambia [10]. Asian studies found 63.9% in China [19], 28.5% in Nepal [20]. The prevalence of migraine found in this study (38.3%) falls within this range. The prevalence of migraine in school settings by Diallo SH *et al.* 2019 in urban areas was 21.0% [6] and Maiga Y *et al.* 17.3% [5].

Tension-type headache accounted for 23.3%, lower than the 38.3% reported in the USA [21] but similar to Ethiopian data (20.7%) [11]. Chronic daily headache was observed in 28.3%, higher than in Ethiopia (2.5%) [11] but comparable to that of Zambia (11.5%) [10].

4.3. Associations between Migraine and Sociodemographic Factors

In our study, we observed a significant association between migraine and male sex, with a p-value < 0.025 when compared to females, as well as a link between younger age and migraine, with a p-value < 0.025. Students experienced migraines more frequently than individuals in other occupational categories, with a p-value < 0.005. A significant association with migraine was also found in both literate and illiterate populations, with a p-value < 0.001. These findings are consistent with those of Jimmy Fransisco Abadinta Barus *et al.* [22], as well as Balaji S. Ma-

hendran [23], who reported no statistically significant association between headaches and sociodemographic factors in studies examining sociodemographic and psychosocial variables among adolescents. In those studies, headaches were associated with sleep disturbances (OR 1.99; 95% CI: 1.72 - 2.30), depression (OR 1.94; 95% CI: 1.65 - 2.28), and female sex (OR 1.72; 95% CI: 1.50 - 1.98). Other contributing factors to headaches included poor to moderate sleep quality (OR 1.25; 95% CI: 1.08 - 1.45) and low income (OR 1.22; 95% CI: 1.01 - 1.48).

In our cohort, the most frequent triggers were sleep disturbances (70.5%), stress (66.7%), and fatigue (64.4%). Among women with migraine, menstruation was identified as a trigger in 31.8% of cases. Strategies used by patients included rest, medication intake, staying in a quiet and dark environment, and receiving massages to alleviate headaches.

4.4. Tension-Type Headache (TTH)

We found a statistically significant association between tension-type headache and monthly income, with a p-value < 0.001. A similar association was observed between tension-type headache and marital status, also with a p-value < 0.001, as well as a significant link in literate individuals compared to those with no formal education, with a p-value < 0.025.

4.5. Impact of Headaches on Quality of Life

Headaches affect social life, daily activities, and academic performance among young adults. They are common and distressing. Migraines cause more severe problems than tension-type headaches [23]. In our study, the impact on quality of life was observed in the following domains:

Mobility

In our study, 56.7% of individuals with headaches reported difficulties in moving around; 26.7% were unable to move and were confined to bed, whereas 16.7% of our participants with headaches had no difficulty walking.

Autonomy

According to our findings, 51.7% of participants with headaches experienced problems washing or dressing themselves independently; 8.3% were completely unable to wash or dress without assistance, while 40% reported no difficulties with autonomy.

Daily Activities (household tasks, studies, leisure)

A total of 63.3% of participants with headaches were completely unable to carry out their daily activities, whether household chores, studies, or leisure activities. Another 31.7% had difficulties performing their daily activities, whereas only 5% of participants with headaches reported no problems in this area.

Pain/Discomfort

Among our participants, 75% experienced severe pain or extreme discomfort, 20% reported moderate pain or discomfort, and 5% had neither pain nor discomfort.

Depression/Anxiety

In our study, 66.7% of participants with headaches were extremely anxious and depressed, 21.7% were moderately anxious and depressed, while 11.7% of participants with headaches were neither anxious nor depressed. Zhinua Jia *et al.* reported that the prevalence of depression and anxiety was 20.1% and 14.8%, respectively, with 11.1% having a history of anxiety or depression [24].

5. Conclusion

Headaches are common in neurological consultations and have a significant negative impact on patients' quality of life.

Ethical Considerations

This study was conducted as part of a medical thesis, with approval from the Ethics Committee of the Faculty of Medicine and Dentistry of Mali. In addition, the hospital administration authorization was obtained before the study. Each participant gave free, informed verbal consent. Data were collected anonymously and could not be used to identify patients.

Conflicts of Interest

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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