

Tension-Type Headache in Brazzaville: Prevalence and Sociodemographic Profile from a Cross-Sectional Population-Based Study

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Abstract

Background: Tension-type headache (TTH) is the most common primary headache disorder worldwide. Urbanization, psychological stressors, and sociocultural factors may influence its epidemiology in Africa. **Methods:** A cross-sectional, population-based study was conducted in Brazzaville via proportional stratified sampling across the city's nine districts. Data were collected through a standardized questionnaire and clinical interviews based on the International Classification of Headache Disorders (ICHD-III). The 3-month and 1-year prevalence rates of TTH and its subtypes were estimated. **Results:** Among the 1650 eligible individuals, 1611 participated (response rate: 97.6%). Primary headaches were reported by 15% of the respondents, 66.5% of whom were diagnosed with TTH. The 3-month prevalence of TTH was 10% [95% CI: 8.5% - 11.5%], adjusted to 9.5% [95% CI: 8.1% - 10.9%] after correction for age and sex, and the adjusted 1-year prevalence was 23% [95% CI: 20.9% - 25.1%]. TTH was episodic (77.6%) or chronic (22.4%), and 33.5% of the participants presented with pericranial tenderness. The median age of participants with TTH was 37 years. The majority were women (male-to-female ratio = 1:2.3), single (51.6%), and employed (54%). Most had secondary (46%) or higher (39.1%) education and reported low (42.9%) or moderate (43.5%) socioeconomic status. **Conclusion:** TTH is prevalent in Brazzaville, predominantly affecting young, single, educated, and working women living in densely populated areas. Its multifactorial nature underscores the need for targeted prevention and improved headache care strategies in urban African settings.

Keywords

Tension-Type Headaches, Prevalence, Sociodemographic Profile, Brazzaville, Sub-Saharan Africa

1. Introduction

Headache is one of the most frequently observed symptoms in medical consultations and affects individuals of all ages and genders [1] [2]. It can be classified as a secondary headache, indicative of an emergency condition, or a primary headache, with a chronic course and no anatomopathological substrate [3].

Tension-type headache (TTH) is the most common type of primary headache disorder worldwide. It is characterized by episodic (ETTH) or chronic (CTTH) bilateral pain, often described as a sensation of pressure or tightness around the head, with or without pericranial muscle tenderness [3].

The worldwide average annual prevalence of TTH is estimated at approximately 40% of the population [1] [4]. It frequently begins during adolescence onward and affects mainly people aged between 20 and 40 years [4] [5]. It affects women slightly more than men, with a ratio of 3 women to 2 men [4] [6].

The pathophysiological mechanisms of TTH are complex, involving both peripheral and central factors, and are related to dysfunction of pain modulation systems [7] [8]. Peripheral mechanisms are associated with muscle sensitization, particularly episodic TTH (ETTH), resulting from prolonged contraction of the pericranial muscles in response to stress or poor posture [5]. In chronic TTH (CTTH), central sensitization mechanisms are implicated, involving hyperexcitability of brainstem neurons, a lowered pain threshold and enhanced perception of nociceptive stimuli [9]. Moreover, psychological stress, through sustained cortisol release, may exacerbate TTH by disturbing autonomic nervous system balance and contributing to pericranial muscle hyperactivity [10] [11]. Individual genetic predispositions involving alterations in serotonergic and GABAergic pathways have also been suggested [12].

The impact of TTH on quality of life is considerable, with socioprofessional and economic repercussions, including presenteeism, absenteeism, occupational stress and stigmatization, loss of productivity, medical consultations and pharmacological treatments. These effects are more pronounced in CTTH and industrialized countries, where professional demands are particularly high [13]-[15]. At the macroeconomic level, the global financial loss is estimated to be billions of dollars annually, driven by the high prevalence of TTH and its impact on the working population [16]. This economic burden is exacerbated by insufficient management and limited recognition of its clinical manifestations and public health impact. Headache disorders, particularly migraines and TTH, are among the leading causes of years lived with disability worldwide and rank among the top ten causes of non-fatal disability in most regions [1] [17].

TTH is a major public health concern worldwide. Their prevalence varies sig-

nificantly across regions, ranging from 7% to 78% [4] [14] [18]-[24]. This regional variability is influenced by methodological, cultural, environmental, and socioeconomic factors [25] [26]. In the Republic of Congo, the only study conducted in the general population of Brazzaville focused on migraine [27]. However, a workplace-based study in Brazzaville reported a 3-month prevalence of TTH of 20.5% [28]. A better understanding of regional disparities and the specific needs of each population would help optimize the management of these conditions.

The aim of this study was to estimate prevalence of TTH in general population of Brazzaville and to describe the sociodemographic profile of affected individuals. Brazzaville was selected for this pilot investigation because it is the country's most densely populated and demographically diverse city, and logistical conditions allowed structured, district-based sampling. Although burden metrics, such as disability-adjusted life years, are crucial, this study focused on prevalence as a foundational step. A follow-up study may assess attributed burden more comprehensively.

2. Methods

2.1. Study Design and Population

A door-to-door cross-sectional study was conducted from June to August 2024. Individuals aged 18 years and older who had resided in Brazzaville for at least 10 years and had provided informed consent were included. This criterion was used to ensure that participants were durably exposed to urban environmental conditions and to reduce recall bias linked to recent migration. Individuals who were unable to complete the questionnaire due to cognitive, language, or health limitations were excluded.

The Department of Brazzaville comprises the city of Brazzaville and the M'bamou Island district, with a total population of 2,145,783 (Figure 1). Brazzaville, the administrative capital of the Republic of Congo, is a cosmopolitan city with 2,138,236 inhabitants in 2023, including 1,057,605 men and 1,080,631 women. With a surface area of 326.40 km², the city's population density is 6550.97 inhabitants/km², whereas it is 17.96 inhabitants/km² for the entire country. Brazzaville is administratively divided into 9 districts, comprising 89 neighborhoods (official basic administrative unit in the city), 434 zones (technical or operational subdivision, used to organize a district or neighborhood into several parts) and 3509 blocks (smaller units than zones, often equivalent to a few streets or a segment of a neighborhood, used in population censuses or epidemiological surveys; each block is numbered and mapped to enable random or systematic sampling of households) [29] [30]. Table 1 presents data on the districts in 2023, including surface area, population, and population density.

2.2. Sampling Procedure

A proportional stratified sampling approach was used to select participants based on the population size of each district. Neighborhoods, zones, and blocks were randomly selected without replacement in each of Brazzaville's nine districts. All households within selected blocks were visited using a door-to-door approach. In

each household, the first eligible adult available at the time of the visit was invited to participate. This strategy ensured spatial and demographic representativeness while maintaining operational feasibility.



Figure 1. Administrative map of the Republic of Congo and the Department of Brazzaville in 2023 [31].

Table 1. Demographic and geographic characteristics of Brazzaville's districts in 2023 [29] [30].

Districts (Number)	Neighborhoods	Area (km ²)	Population (2023)	Density (Inhabitants/km ²)
Makélékélé (1)	11	15.53	265,729	17,110.69
Bacongo (2)	9	6.74	84,353	12,515.28
Poto-poto (3)	6	9.32	84,299	9044.96
Moungali (4)	9	14.28	161,157	1285.50
Ouenzé (5)	10	7.13	183,809	25,779.66
Talangā (6)	12	19.33	390,459	20,199.64
Mfilou (7)	13	90.16	387,730	4200.64
Madibou (8)	11	80.45	272,852	3391.57
Djiri (9)	8	83.46	307,848	3688.57

The theoretical sample size was estimated via a previously reported prevalence of occupational TTH in Brazzaville (20.5%), with a precision of 2% [28]. The resulting estimated sample size was approximately 1566 participants, rounded to 1600, and then proportionally allocated to each district according to its population size (Table 2).

Table 2. Distribution of the population and allocated sample size by district.

Districts (Number)	Population	Proportion of Total Population (%)	Theoretical Number of Participants to be surveyed
Makélékélé (1)	265,729	12.43	199
Bacongo (2)	84,353	3.94	63
Poto-poto (3)	84,299	3.94	63
Moungali (4)	161,157	7.54	121
Ouenzé (5)	183,809	8.60	138
Talangai (6)	390,459	18.26	292
Mfilou (7)	387,730	18.13	290
Madibou (8)	272,852	12.76	204
Djiri (9)	307,848	14.40	230
Total	2,138,236	100	1600

2.3. Data Collection

The survey was conducted during school holidays and weekends to ensure participant availability. The field team consisted of the principal investigator, eight sixth-year medical students, and four third-year public health students, all of whom received prior training in standardized questionnaire administration (English version is provided in supplementary File 1), previously used in a study assessing the prevalence of occupational TTH in Brazzaville [28].

After collecting sociodemographic data, participants were first asked a screening question: “Have you had headaches in the past three months?” Participants answering “yes” were then assessed in detail for headache characteristics. Both definite and probable TTH cases, as defined by International Classification of Headache Disorders (ICHD-III) criteria, were included in the prevalence estimates [3]. The diagnostic process was reviewed by two trained neurologists.

Socioeconomic status was assessed using a composite score derived from household variables: 1) daily food expenditure, 2) number of household beneficiaries, and 3) number of daily meals. Each variable was assigned a score from 1 to 5, with higher values reflecting better living conditions (e.g., higher spending, more meals, fewer dependents per household). The total score ranged from 3 to 12 points. Socioeconomic status categories were defined as follows: very low (3 - 4 points), low (5 - 6), moderate (7 - 8), high (9 - 10) and very high (11 - 12). This scoring system, adapted to the local urban context of Brazzaville, was designed to capture basic indicators of food security and household structure in the absence of formal income documentation.

The questionnaire was translated into French, Lingala, and Kituba using a forward-backward method, and pretested to ensure conceptual equivalence and cultural appropriateness.

2.4. Data Analysis

The data were analyzed via SPSS version 25. Categorical variables are summarized as frequencies and percentages, whereas continuous variables are expressed as the means \pm standard deviations or as medians with interquartile ranges, depending on the distribution. Sex and age distributions were compared to those of the general population of Brazzaville, via the chi-square test with a significance threshold of 5%.

The 3-month prevalence (P) of TTH was estimated as a percentage (%) with a 95% confidence interval and then adjusted for age and sex.

Annual prevalence was not directly assessed by questionnaire. It was estimated from the 3-month prevalence using a persistence-adjusted extrapolation formula previously validated in population studies, accounting for multiple episodes of ETTH occurring throughout the year without complete overlap and considering CTTH as a persistent condition. A correction factor of 1.5 was applied to adjust for persistence or redundancy, in line with recommendations for frequent or recurrent conditions [32] [33].

$$P_{TTH-1year} = [(P_{ETTH-3month} \times 4) \div Fp] + P_{CTTH-3month}$$

- P_{TTH-1y} : estimated 1-year prevalence of tension-type headache.
- $P_{ETTH-3mo}$: 3-month prevalence of episodic tension-type headache.
- $P_{CTTH-3mo}$: 3-month prevalence of chronic tension-type headache.
- Fp : factor of persistence (set to 1.5 to adjust for recurrence or overlap).
- The multiplier 4 extrapolates the quarterly prevalence to a full year.

2.5. Ethics Approval and Consent to Participate

The study was approved by the *Comité d'Éthique pour la Recherche en Sciences de la Santé* (CERSSA) of the Faculty of Health Sciences at Marien Ngouabi University under number 192-24/MESRSIT/DGRST/CERSSA/-24 of September 27, 2024. The necessary academic and administrative authorizations were obtained. Informed consent was obtained from all participants after the study's aim and objectives were presented. All the data were anonymized using coded identifiers to ensure confidentiality. Participants reporting headaches were provided with counseling regarding appropriate management.

3. Results

3.1. Study Sample Description

Of the 1650 individuals selected, 1611 agreed to participate in the study, yielding a participation rate of 97.6%. The sex distribution in the study sample (49.1% male and 50.9% female) closely mirrored that of the general population of Brazzaville (49.2% male and 50.8% female), with no statistically significant difference ($p =$

1.000). Similarly, no significant difference was observed in the age distribution ($p = 0.399$).

3.2. Prevalence of Tension-Type Headaches in Brazzaville

Among the participants, 242 (15.0%) reported primary headaches, of which 161 (66.5%) were classified as TTH. The 3-month prevalence of TTH was 10.0% [95% CI: 8.5 - 11.5], equivalent to 10,000 cases per 100,000 inhabitants in Brazzaville. After adjustment for age and sex, the 3-month prevalence was estimated at 9.5% [95% CI: 8.1 - 10.9].

The adjusted 1-year prevalence of TTH was 23.0% [95% CI: 20.9 - 25.1], according to repeated episodes and the persistence factor.

The frequencies and prevalence rates by TTH subtype, both over 3 months and at 1 year, are presented in **Table 3**, and the frequency and 3-month prevalence of TTH by district are presented in **Table 4**. In 33.5% of cases, TTH was associated with pericranial tenderness.

Table 3. Distribution of TTH subtypes with frequency and prevalence at 3-month and 1-year.

	n (%)	3-month prevalence % [95% CI]	1-year prevalence % [95% CI]
Definite TTH	139 (86.3)	8.6 [7.3 - 10.0]	20.1 [18.1 - 22.1]
Probable TTH	22 (13.7)	1.4 [0.8 - 1.9]	2.8 [2.0 - 3.6]
TTH + Migraine	12 (7.4)	0.7 [0.3 - 1.1]	1.8 [1.1 - 2.4]
Episodic TTH	125 (77.6)	7.8 [6.4 - 9.1]	20.8 [18.8 - 22.8]
Frequent	65 (52.0)	4.1 [3.1 - 5.1]	10.9 [9.4 - 12.5]
Infrequent	60 (48.0)	3.7 [2.8 - 4.6]	9.9 [8.4 - 11.3]
Chronic TTH	36 (22.4)	2.2 [1.5 - 2.9]	2.2 [1.5 - 2.9]

TTH = tension-type headache.

Table 4. Frequency and 3-month prevalence of tension-type headache by district.

District (number)	n (%)	3-month prevalence % [95% CI]
Makélékélé (1)	13 (8.1)	6.5 [3.1 - 9.9]
Bacongo (2)	2 (1.2)	3.1 [1.1 - 7.4]
Poto-Poto (3)	17 (10.6)	26.6 [15.7 - 37.4]
Moungali (4)	18 (11.2)	14.9 [8.5 - 21.2]
Ouenzé (5)	34 (21.1)	24.6 [17.4 - 31.8]
Talangaï (6)	46 (28.6)	15.3 [11.2 - 19.3]
Mfilou (7)	20 (12.4)	6.8 [3.9 - 9.7]
Madibou (8)	3 (1.9)	1.4 [0.2 - 3.1]
Djiri (9)	8 (5.0)	3.6 [1.1 - 5.9]

Sociodemographic characteristics

The median age of the participants was 37 years (first quartile: 26 years; third

quartile: 51 years). A total of 112 (69.6%) women and 49 (30.4%) men were included, resulting in a female-to-male ratio of 2.3:1. The 3-month prevalence of TTH was 13.6% [95% CI: 8.4 - 21.2] among women and 6.2% [95% CI: 2.1 - 16.6] among men in Brazzaville. The distribution of participants by age group is shown in **Figure 2**. Additional sociodemographic characteristics are presented in **Table 5**.

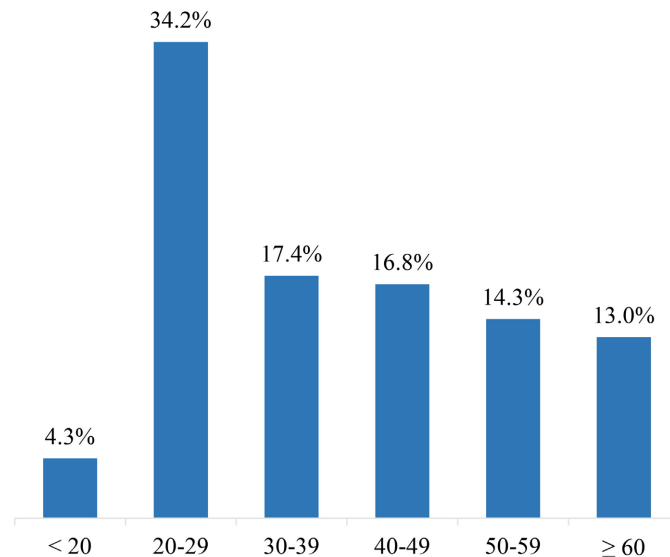


Figure 2. Distribution of tension-type cases by age group (in years).

Table 5. Educational level, as well as socioeconomic, occupational and marital status.

		n	%
Education level	Primary	22	13.7
	Secondary	74	46.0
	Higher	63	39.1
	None	2	1.2
Socioeconomic status	Very low	14	8.7
	Low	69	42.9
	Moderate	70	43.5
	High	8	5.0
Occupational status	Employed	87	54.0
	Unemployed	38	23.6
	Student	31	19.3
	Retired	5	3.1
Marital status	Single	83	51.6
	Cohabiting	38	13.6
	Married	29	18.0
	Widowed	8	5.0
	Divorced	3	1.8

4. Discussion

4.1. Prevalence of Tension-Type Headaches

This study found that 9.5% of the adult population in Brazzaville reported TTH in the past 3 months, and 23% over the past year. TTH was more prevalent among women, especially those who were single, and most cases were episodic with pericranial tenderness. These findings provide the first population-based estimates of TTH in Congo and highlight sociodemographic disparities in TTH occurrence.

Globally, between 2016 and 2017, the number of individuals affected by TTH increased from 1.89 to 2.33 billion, with an age-standardized prevalence rate of 29,810 per 100,000 inhabitants in 2017 [4] [34]. In the World Health Organization (WHO) European Region, comprising 925.6 million people in 2017, 540.3 million neurological conditions were reported, among which approximately 309.9 million were TTH, corresponding to an age-standardized rate of 31,022 per 100,000 [34]. The prevalence of TTH varies widely, from 30% to 78%, depending on country and methodology, with notably high rates in Scandinavian countries, likely due to greater public awareness [18] [19]. In industrialized nations, perceived government bias toward industrial sectors and weak public consultation mechanisms have been linked to chronic stress, which in turn is associated with a greater occurrence of TTH and vice versa [35]-[37].

In Africa, due to the scarcity of population-based studies, most available data rely on predictive models based on Bayesian meta-regression. In 2016, an estimated 26.2 million individuals in Central Africa were affected by TTH, including 17.9 million in the Democratic Republic of Congo and approximately 1 million in Congo-Brazzaville. In the latter, the age-standardized prevalence was estimated to range from 23,000 to 25,000 per 100,000 inhabitants [4].

Recent studies have reported a high TTH prevalence in both urban and rural populations (Table 6). In Zambia, the 1-year prevalence adjusted for sex and habitation was 22.8% [20]. A lower annual prevalence of 10.4% was reported in an administrative area of Addis Ababa, characterized by a population density of 25,560 inhabitants/km² [24]. In Benin and Cameroon, the adjusted annual prevalence rates were 43.1% and 44.4%, respectively [22] [23].

In the present study, the 1-year prevalence of TTH was 23% in Brazzaville, aligning with the lower estimates for Congo [4]. However, the 3-month prevalence was 10%, notably lower than that reported in the occupational setting, where it reached 20.5% over 3 months and 36.7% over 1 year among employees of companies in Brazzaville and Lomé, respectively [28] [38]. Moreover, TTH accounted for 66.5% of primary headaches in this study, whereas migraines represented 39.9% of primary headaches in a 2018 survey of the general population in Brazzaville, highlighting the public health significance of TTH [27].

The variation in TTH prevalence across regions may be attributed, beyond methodological differences, to interindividual and cross-cultural variations in pain expressions and symptom reporting. This often leads to underestimation, particularly in cases of migraine comorbidity or in rural areas with limited aware-

ness and exposure to stressors [25] [26]. Despite regional heterogeneity, headache disorders, including TTH, represent a growing public health concern in the 21st century, exacerbated by the digital lifestyle and the COVID-19 pandemic [40]-[42].

Table 6. Sub-Saharan African studies on the 1-year prevalence of tension-type headache in the general population.

Country (Years)	N	Area of residence	Respondent rate	1-year prevalence Age group peak Ratio (F:M)*
Congo (2024) This study	1650	Urban: Brazzaville	97.6%	23% 20 - 29 years old 2.3:1
Tanzania (2003-2004) [21]	7412	Rural: Mbulu	100%	7% 61 years and over Female dominance
Ethiopia (2011) [24]	231	Urban: Addis Katema	100%	10.4% 15 - 25 years old Female dominance
Zambia (2015) [20]	1134	Urban (81.8%): Lusaka Rural (18.2%): Southern Province	95.7%	24.2% 30 - 39 years old Male dominance
Ethiopia (2014) [39]	2285	Urban (25%): Addis Ababa Rural (75%): Oromia, Amhara and South Nations Nationalities and People's Regions States (SNNPRS).	99.8%	20.7% 56 - 65 years old Female dominance
Cameroon (2019) [22]	3100	Urban (57.5%): Yaoundé, Douala, Bafoussam, Ngaoundere Rural (42.5%): Mfou, Ngoumou, Nkongsamba, Bandjoun, Bay-angam, Baham, Bangou, Ngaoundal	83.3%	44% 56 - 65 years old Male dominance
Benin (2020) [23]	2400	Urban (30%): Cotonou, Parakou Rural (70%): Tori-Bossito, Pèrèrè	94.1%	43.6% 36 - 45 years old Male dominance

*Female-to-male ratio.

In this study, TTH prevalence was higher in urban areas, which is consistent with other sub-Saharan African studies showing a greater risk of TTH among urban residents [22] [23]. Densely populated environments increase exposure to stressors. Psychological factors, such as anxiety and depression, play critical roles in the onset, persistence and worsening of TTH [43].

Prevalence rates as high as 14.9% to 26.6% were observed in Brazzaville's Central-Northern districts. These highly urbanized and cosmopolitan areas combine residential zones with formal and informal businesses, entertainment venues, and places of worship, fostering environmental stress due to noise, pollution, and overcrowding [35] [44]-[46]. While urban populations tend to be better educated and less influenced by sociocultural health beliefs, rural populations—although less exposed to urban stress—may underreport symptoms due to physical resilience, health illiteracy, or lack of awareness [24] [25] [47]. The observed variation in prevalence across districts, ranging from 1.4% to 26.6%, may reflect real differences in urban stressors or access to care, but could also result from small sub-

group sizes, variability in translation, or differential reporting. In districts with very low or very high prevalence, results should be interpreted cautiously given potential sampling noise and contextual differences.

Most studies confirm that ETTH is more common than CTTH [21] [25] [48]. In rural Ethiopia, the annual prevalence of CTTH is estimated at 1.7%, with reported triggers including emotional stress, weather changes, physical exhaustion, and specific odors [49]. Episodic TTH primarily affects individual performance in daily activities, including work, household tasks, and schooling, whereas CTTH is associated with greater societal and economic burdens [48].

4.2. Sociodemographic Characteristics

Migraine and TTH affect mainly individuals aged between 20 and 40 years, with a peak incidence of approximately 35 years, and tend to decline with age [18] [20] [23] [28] [50]. In the present study, the 20 - 29 age group was more affected by TTH, likely because of stress related to academic responsibilities and early career demands [13] [28] [51].

The higher prevalence of TTH among women (female-to-male ratio: 2.3:1) is consistent with global trends [4] [18] [23] [42]. This gender disparity may be attributed to hormonal factors, such as menstruation and menopause, or reflected sociocultural factors such as gendered perceptions of pain and health communication [52] [53]. Underreporting among men, influenced by stigma or social norms, cannot be ruled out. Additionally, interviewer-participant dynamics (gender mismatch or language limitations) could have introduced bias in symptom reporting especially in mixed-language contexts. However, in certain specific contexts, such as the corporate sector in Brazzaville or post-conflict Serbia, a male predominance has been observed [28] [54].

Higher TTH frequency was found among educated and professionally active individuals. In sub-Saharan Africa, higher educational attainment has been associated with an increased risk of TTH [22] [23]. In contrast, a Zambian study reported a protective effect of higher education, although no specific explanation was provided [20]. Elsewhere, higher TTH prevalence has been observed among employees, executives, and highly skilled professionals, particularly in occupations that demand sustained attention, productivity, and performance [28] [42] [55] [56]. In Brazzaville and Lomé, occupational stress was identified as the primary risk factor [28] [38]. Similarly, in Bobo-Dioulasso, Burkina Faso, 15.38% of nurses were found to have TTH, often after more than a decade of professional experience [57].

Many participants in this study were unemployed or students. In these groups, job insecurity, academic stress, and sleep deprivation may contribute to the onset of TTH [58] [59].

An inverse association was noted between socioeconomic status and TTH frequency, likely due to increased stress and limited healthcare access in lower-income populations [25] [60]. This association may also be explained by the large

number of university students in the sample, who have high educational attainment but report low or unstable income, contributing to the inverse association observed with socioeconomic status.

Although nearly half of the study participants were single, no associations were observed between marital status or cohabitation and TTH prevalence [61].

Tension-type headaches are multifactorial disorders influenced by cultural and genetic predispositions (such as a family history), as well as environmental factors. Some of these remain poorly understood in our context because of underreporting, cultural misinterpretation, and differing pain thresholds across populations [25] [28]. Tension-type headaches affect individuals of all ages, races, income levels, and regions [36].

4.3. Study Strengths and Limitations

This population-based study aimed to enhance the knowledge of TTH in Brazzaville. A proportional stratified sampling method was used, with the city's nine districts serving as strata to capture its sociocultural and economic diversity. This approach reduces selection bias by ensuring representative sample.

A 3-month prevalence timeframe was chosen to reduce recall bias and reporting inaccuracies often associated with longer periods. This strategy limits memory bias while acknowledging the potential overlap between TTH and migraine without aura.

The 1-year prevalence of TTH was estimated using an extrapolation formula accounting for episodic recurrence and chronic persistence. Although this approach has been used in prior epidemiological models, it remains an approximation. Direct assessment of 1-year prevalence through recall would reduce the need for adjustment factors and should be considered in future studies. Moreover, the use of a fixed correction factor may not fully capture individual variation in episodic recurrence.

A longitudinal design would have allowed for more accurate incidence estimates but was not feasible in this setting. Lastly, some participants were reluctant to answer questions perceived as too personal, potentially introducing information bias.

5. Conclusion

Tension-type headaches are prevalent in Brazzaville, mostly among young, single, well-educated women of moderate socioeconomic status who are employed and reside in the Central-Northern districts. Often episodic and frequent, these headaches constitute a significant public health issue and underscoring the need for targeted public health interventions and improved management strategies.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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