

Spectrum of Headache Disorder: Patient Attending Eye OPD in A Tertiary Teaching Hospital

*Islam M N¹

Abstract

Background: Headache disorders are one of the most common reasons for patients seeking medical attention, with varying underlying causes that can significantly affect a person's quality of life. This study aimed to assess the spectrum of headache disorders to alert ophthalmologists and general physicians to distinguish urgent headaches (those that may be life as well as vision-threatening) from less urgent headaches. **Materials and Methods:** This was a cross-sectional observational study conducted at the Eye Outpatient Department (OPD) in Ad-din Sakina Medical College Hospital, Pulerhat, Jashore, from December 2023 to November 2024, to assess the spectrum of headache disorders among patients attending the Eye OPD. **Results:** The results of this study revealed that among 500 patients attending the Eye OPD, the highest incidence of headaches was observed in the 21-30 years age group (30%), with a notable female predominance (80%). The most common headache condition was migraine (30%), followed by anxiety and tension headaches (20%), and eye strain due to mobile and laptop use (15%). Urgent symptoms, such as headaches related to intracranial space-occupying lesions (ICSOL), were rare, affecting only 0.5% of patients. **Conclusion:** This study highlights the diverse spectrum of headache disorders with a predominance of migraines, anxiety-related headaches, and eye strain due to prolonged screen time. The findings emphasize the critical importance of distinguishing between urgent and non-urgent headache conditions among patients attending the Eye OPD. Although the urgent conditions, such as headaches related to intracranial space-occupying lesions (ICSOL) are rare (0.5%), necessitating immediate attention from ophthalmologists and general physicians.

Keywords: Ophthalmology, Migraine, Tension headache, Eye strain

Received: 27.10.2025, **Accepted:** 01.11.2025.

Introduction

Headache is a common cause of suffering. Although headaches are painful and annoying, the vast majority do not indicate a serious disorder. Its nature is said to be dull, aching, boring, superficial, deep-seated, or migrainous; its time of occurrence is constant, intermittent, related or unrelated to the use of eyes. In the majority of patients, the cause is trivial and reversible. Headache may present as serious in intracranial diseases and it must be distinguished from those of more common forms of headache.¹ The relationship between headaches and ocular health is multifaceted, as various headache types, including primary and secondary headaches, can manifest in conjunction with visual symptoms. Primary headache disorders, such as migraine and tension-type headaches (TTH), are frequently reported among individuals who seek care in Eye OPDs. Migraine, characterized by recurrent, severe, and often

Ad-din Sakina Women's Medical College Journal. 2026; 7 (1) : 09-16

unilateral pain, is commonly associated with visual symptoms like aura, photophobia, and blurred vision. The connection between migraines and visual disturbances is well-documented, as migraines can lead to cortical spreading depression, which disrupts visual processing pathways in the brain.²

Additionally, patients with migraines often report increased sensitivity to light, making them more likely to visit an Eye OPD for evaluation and symptom management.³ In this context, the role of the ophthalmologist is crucial, as they can help differentiate between visual aura associated with migraines and other ophthalmological conditions that may present with similar symptoms. Tension-type headaches, which are typically bilateral and characterized by a dull, pressing pain, also commonly affect individuals with Eye OPDs. These headaches are often linked to stress, anxiety, and poor posture, which may contribute to visual strain. Prolonged screen use, poor lighting, and uncorrected refractive errors can exacerbate the

1. Dr. Md. Nazrul Islam, Assistant Professor, Department of Ophthalmology, Ad-din Sakina Women's Medical College, Jashore.

*Correspondence: E-mail: nazrulislam170964@gmail.com

symptoms of TTH. Therefore, patients with TTH frequently seek care in Eye OPDs, not only for headache management but also for evaluation of their visual function. The interplay between visual factors, such as uncorrected refractive errors, and headache development is a critical area of investigation for clinicians working in these settings.⁴ Secondary headaches, particularly those related to ocular conditions, are another prominent aspect of the headache spectrum in Eye OPDs. Glaucoma, a condition characterized by elevated intraocular pressure, is often associated with headache symptoms. Patients with glaucoma may experience a dull, aching headache that worsens with prolonged visual activity or at night.

Furthermore, ocular inflammation, such as uveitis or retrobulbar neuritis, can present with headache as a secondary symptom, often accompanied by pain and discomfort in the eye.⁵ These conditions can present challenges for both diagnosis and management, as headaches may be perceived as a primary symptom by patients, while the underlying ophthalmological condition requires prompt treatment to prevent further complications. Moreover, visual strain from uncorrected refractive errors, such as myopia, hypermetropia, and astigmatism, can trigger or exacerbate headache symptoms. Patients with undiagnosed refractive errors may experience persistent headaches due to eye strain, particularly with prolonged reading or screen use. In Eye OPDs, refractive errors are frequently identified as a contributing factor to headaches, particularly in younger patients or those who engage in extensive visual tasks.⁶ Corrective measures, such as prescribing glasses or contact lenses, often provide significant relief, making the role of the ophthalmologist vital in these cases. In addition to primary and secondary causes, environmental factors, such as prolonged exposure to screens and poor lighting conditions, contribute to the development of headaches in patients attending the Eye OPD. The widespread use of digital devices has led to a surge in cases of

digital eye strain, characterized by symptoms like dry eyes, blurred vision, and headaches. These symptoms are particularly prevalent among younger individuals and those working in occupations that require extensive screen time. The management of digital eye strain is an emerging area of focus in the Eye OPD, with recommendations emphasizing proper ergonomics, frequent breaks, and the use of anti-reflective lenses to reduce strain on the eyes.⁷ Psychosocial factors, such as stress and anxiety, are also significant contributors to headache disorders. Tension headaches, which are closely linked to psychological stress, are often present in patients who report anxiety or emotional distress.

Moreover, emotional factors may exacerbate visual strain, leading to an increased frequency and intensity of headaches. Addressing these psychosocial aspects in a comprehensive treatment plan is important for improving both headache management and overall patient well-being.⁸ Sleep disturbances and irregular sleep patterns are also frequently reported among patients with headaches. A lack of restorative sleep or poor sleep quality can act as a trigger for both migraines and tension-type headaches. Studies have shown that individuals with chronic insomnia are more likely to experience frequent and severe headaches, which may be compounded by visual strain due to extended screen time or inadequate lighting. Thus, managing sleep hygiene and addressing underlying sleep disorders is a crucial part of a comprehensive headache management plan.⁹ The association between headache disorders and visual disturbances in Eye OPDs underscores the need for a multidisciplinary approach to treatment. Ophthalmologists, neurologists, and mental health professionals must collaborate to address the complex interplay of visual, neurological, and psychosocial factors in patients with headaches. Additionally, patient education plays a crucial role in managing headache disorders, as individuals need to be aware of the potential

triggers, including visual strain, stress, and sleep disturbances. Prevention strategies, such as the regular use of corrective eyewear, practicing stress reduction techniques, and adopting good sleep hygiene, can help to reduce the frequency and severity of headache episodes. This study aimed to assess the spectrum of headache disorders among patients attending eye OPD, to alert ophthalmologists and general physicians to distinguish urgent headaches (those that may be life as well as vision-threatening) from less urgent headaches.

Materials and Methods

This was a cross-sectional observational study conducted at the Eye Outpatient Department (OPD) in Ad-din Sakina Medical College Hospital, Pulerhat, Jashore, from December 2023 to November 2024. The study aimed to assess the spectrum of headache disorders among patients attending the Eye OPD, focusing on demographic characteristics, headache conditions, duration, and common triggers. A total of 500 consecutive patients who presented with headaches and sought care were included in the study. The patients were selected based on their willingness to participate and the presence of headache symptoms. Patients of all ages, both male and female who consented to participate were included in the study. Patients with pre-existing neurological disorders or systemic conditions affecting the head and neck region, patients with a history of trauma or surgery affecting the head or eyes and unable to provide informed consent were not included in this study.

Data was collected using a structured questionnaire administered to each patient during their OPD visit. The questionnaire captured demographic information (age, sex), headache characteristics (duration, type, and frequency), associated ocular conditions (e.g. refractive errors, eye diseases), and common triggers (including stress, screen time, and sleep disturbances). Information

was gathered through patient interviews, clinical examination, and a review of medical records. Data were analyzed using descriptive statistics. The demographic characteristics, headache conditions, duration, and triggers were summarized as frequencies and percentages. Age and gender distributions were examined to identify trends and the prevalence of various headache conditions was calculated. Data analysis was performed using IBM SPSS 25. Ethical approval for the study was obtained from the institutional review board, and informed consent was obtained from all participants before data collection.

Results

Table 1: Distribution of patients according to age group (n=500)

Age (years)	Number	Percentage
0-10	55	11.0
11-20	125	25.0
21-30	150	30.0
31-40	100	20.0
41-50	40	8.0
51-60	20	4.0
61-70	10	2.0

In Table 1 the age distribution of 500 patients attending the Eye OPD with headaches shows that the highest number of cases (30%) were in the 21–30 years age group (150 patients), followed by the 11–20 years group, which accounted for 25% (125 patients). The 31–40 years age group comprised 20% (100 patients). Younger children aged 0–10 years represented 11% (55 patients). The frequency of headaches decreased with age, with 8% (40 patients) in the 41–50 years group, 4% (20 patients) in the 51–60 years group, and only 2% (10 patients) in the 61–70 years category.

Table 2: Distribution of patients according to gender (n=500)

Gender	Number	Percentage
Male	100	20.0
Female	400	80.0

Table 2 presents the gender distribution of 500 patients attending the Eye OPD with headaches, showing a significant female predominance. Out of the total patients, 80% (400 patients) were female, while only 20% (100 patients) were male.

Table 3: Distribution of Patients According to Different Conditions (n=500)

Condition	Number	Percentage
Migraine	150	30.0
Anxiety & Tension Headache (HAS, Student)	100	20.0
Eye Strain (Mobile & Laptop)	75	15.0
Uncorrected Refractive Errors	50	10.0
Diseases of the Eyes (Glaucoma, Iritis, Retrobulbar neuritis)	48	9.5
Insomnia & Depression	35	7.0
Sinus headache	25	5.0
Weak accommodation & convergence	15	3.0
Urgent headache (ICSOL)	2	0.5

HAS (Husband Abroad Syndrome)

Table 3 presents the distribution of patients according to different headache-related conditions among 500 individuals attending the Eye OPD. Migraine was the most common condition, affecting 30% (150 patients), followed by anxiety and tension headaches, including HAS (Husband Abroad Syndrome) and student-related stress, which accounted for 20% (100 patients). Eye strain due to mobile and laptop use was reported in 15% (75 patients), while uncorrected refractive errors contributed to 10% (50 patients). Various eye diseases, such as glaucoma, corneal disorders, iritis, and retrobulbar neuritis, were present in 9.5% (48 patients). Insomnia and depression were linked to 7% (35 patients) of cases, while sinus headaches accounted for 5% (25 patients). Weak accommodation and convergence issues were observed in 3% (15 patients). The least common but most urgent cases were intracranial space-occupying lesions (ICSOL), reported in 0.5% (2 patients).

Table 4: Headache with Duration (n=500)

Duration of Headache	Number	Percentage
< 1 month	120	24.0
1 – 6 months	180	36.0
7 – 12 months	90	18.0
> 1 year	110	22.0

Table 4 presents the distribution of patients according to the duration of their headache symptoms among 500 individuals attending the Eye OPD. The majority of patients experienced headaches for 1 to 6 months (36%, 180 patients), followed by those with headaches lasting for less than 1 month (24%, 120 patients). Headaches lasting between 7 to 12 months were reported by 18% (90 patients), while 22% (110 patients) of patients had been suffering from headaches for more than 1 year.

Table 5: Common Triggers of Headache Among Patients (n=500)

Trigger Factor	Number	Percentage
Stress & Anxiety	140	28.0
Prolonged screen time	120	24.0
Sleep disturbances	90	18.0
Bright light exposure	70	14.0
Noise sensitivity	50	10.0
Dietary factors (Caffeine, Skipping meals)	30	6.0

Table 5 presents the common triggers of headaches among 500 patients attending the Eye OPD. The most frequently reported trigger was stress and anxiety, affecting 28% (140 patients), followed by prolonged screen time, which contributed to 24% (120 patients) of cases. Sleep disturbances were identified as a trigger in 18% (90 patients), while bright light exposure triggered headaches in 14% (70 patients). Noise sensitivity was reported by 10% (50 patients) of patients, and dietary factors, such as caffeine consumption and skipping meals, triggered headaches in 6% (30 patients).

Table 6: Urgent and Non-Urgent Prevalent Eye Symptoms (n=500)

Symptom Category	Symptom	Number	Percentage
▪ Urgent symptoms	Urgent headache (ICSOL)	2	0.5
▪ Non-urgent symptoms	Migraine	150	30.0
	Anxiety & Tension headache	100	20.0
	Eye strain (Mobile & laptop)	75	15.0
	Uncorrected refractive errors	50	10.0
	Diseases of the eyes (Glaucoma, Cornea, Iritis, Retrobulbar neuritis)	48	9.5
	Insomnia & Depression	35	7.0
	Sinus headache	25	5.0
	Weak accommodation & Convergence	15	3.0

Urgent symptoms, such as headaches related to intracranial space-occupying lesions (ICSOL), were rare, affecting only 0.5% of patients, but they require immediate attention due to their potential threat to life and vision. In contrast, the majority of patients (99.5%) presented with non-urgent conditions (Table 6), including migraines (30%), anxiety and tension headaches (20%), and eye strain from prolonged screen use (15%). Other non-urgent conditions included uncorrected refractive errors, eye diseases like glaucoma and iritis, and issues such as insomnia and depression.

Discussion

In this study, the highest prevalence of headaches was found in the 21–30 years age group, which accounted for 30% (150 patients) of the total sample. This finding aligns with previous research, which indicates that headaches, particularly migraines, are most common in young adults, especially those in their productive years.¹⁰ The 11–20 years age group also represented a significant portion (25%, 125 patients), likely reflecting the stressors of adolescence, including academic pressure and the increasing use of digital devices, both of which can contribute to headache development.¹¹ The study also revealed a female predominance, with 80% of the patients being female. This gender disparity is consistent with previous studies, which have consistently reported that headaches, particularly migraines and

tension-type headaches, are more prevalent in women compared to men. The hormonal influences, including estrogen fluctuations during menstruation, pregnancy, and menopause, are thought to contribute to this increased vulnerability in females.¹² Migraine was the most common headache condition in this study, affecting 30% (150 patients) of the sample.

Migraines are known to be highly prevalent, particularly in younger adults, and are often accompanied by other symptoms, such as nausea, photophobia, and phonophobia. The association of migraine with visual symptoms, such as visual aura, photophobia, and blurred vision, makes these patients frequent attendees at Eye OPDs.¹³ Anxiety and tension headaches, including those associated with "Husband Abroad Syndrome" (HAS) and student-related stress, accounted for 20% (100 patients) of the cases. Tension-type headaches are the most common primary headache disorder, often linked to emotional stress, anxiety, and poor posture. This finding highlights the increasing role of psychosocial factors, particularly stress and anxiety, in the development of headaches. The prevalence of stress-induced headaches in the younger population, including students and individuals in stressful work environments, further reinforces the importance of addressing psychosocial triggers in headache management.¹⁴ Eye strain due to prolonged use of

digital devices, such as mobile phones and laptops, was reported by 15% (75 patients) of the study population which was somewhat similar to another study.¹⁵ This finding is increasingly relevant in the modern era of digitalization, where excessive screen time is linked to a variety of visual and neurological symptoms, including headaches. The symptoms of digital eye strain, including blurred vision, dry eyes, and headaches, are commonly observed in individuals who spend long hours on screens. The increasing use of digital devices for work and leisure is likely to exacerbate this condition, making it an important factor in the management of headaches, especially in younger adults.¹⁶

Other conditions contributing to headaches included uncorrected refractive errors (10%, 50 patients) and ocular diseases such as glaucoma, corneal disorders, and uveitis (9.5%, 48 patients). These findings were similar to the findings of Serenje M et al.¹⁷ Refractive errors, such as myopia, hypermetropia, and astigmatism, are known to cause visual strain, which can result in headache symptoms. The majority of patients in this study reported experiencing headaches for 1 to 6 months (36%, 180 patients), followed by those with headaches lasting for less than 1 month (24%, 120 patients). The duration of headaches is an important factor in determining the underlying cause and guiding treatment strategies. Chronic headaches, particularly those lasting for more than a year, require careful evaluation for secondary causes, such as ocular diseases, neurological conditions, or systemic disorders.¹⁸ The fact that 22% (110 patients) of individuals reported headaches lasting more than 1 year suggests the chronic nature of some headache disorders, emphasizing the need for long-term management and monitoring in these patients. The most common triggers for headaches in this study were stress and anxiety (28%, 140 patients), followed by prolonged screen time (24%, 120 patients). How-

ever, a study conducted by Lampl et al. showed that the prevalence of stress and anxiety to cause headaches ranged from 5 to 10%.¹⁹ Sleep disturbances were also reported as a common trigger (18%, 90 patients), reinforcing the well-established relationship between poor sleep quality and increased headache frequency.²⁰ Bright light exposure (14%, 70 patients) and noise sensitivity (10%, 50 patients) were also reported as common triggers. These environmental factors can significantly exacerbate the symptoms of migraines and other headache types, highlighting the need for environmental modifications and patient education on managing these triggers.²¹

This study highlights the rarity of urgent cases and the predominance of non-urgent conditions. A similar study by Shenoy found that although most headache cases are benign, urgent conditions like intracranial space-occupying lesions (ICSOL) and severe ocular pathologies can present with headache as a primary symptom, requiring immediate intervention to prevent life-threatening complications.²² Our study similarly identified ICSOL as an urgent condition, but it was rare, accounting for just 0.5% of patients. This aligns with findings from the study of Wolf et al, who noted that severe and life-threatening headaches are less common but must be differentiated early in the clinical evaluation process to avoid delays in treatment.²³

Conflict of Interest: The authors declare no conflict of interest.

Conclusion

This study highlights the diverse spectrum of headache disorders among patients attending the Eye OPD, with a predominance of migraines, anxiety-related headaches, and eye strain due to prolonged screen time. The findings emphasize the critical importance of distinguishing between urgent and non-urgent headache conditions among patients. While urgent conditions, such as headaches related to intracranial space-occupying

lesions (ICSOL), are rare (0.5%), they pose significant risks to both life and vision, necessitating immediate attention from ophthalmologists and general physicians.

Recommendation

In light of the study's findings, it is recommended that ophthalmologists play a pivotal role in the management of headache disorders, particularly in identifying and addressing ocular-related causes such as uncorrected refractive errors and eye diseases, which contribute significantly to headache symptoms. Ophthalmologists should incorporate routine screenings for refractive errors, glaucoma, and other eye conditions that may manifest as headaches, ensuring timely interventions to alleviate symptoms.

References

1. Peatfield R. Headache. London: Springer Science & Business Media; 2012.
2. Goadsby PJ, Sprenger T. Current practice and future directions in the prevention and acute management of migraine. *The Lancet Neurology*. 2010 Mar 1;9(3):285-298.
3. Silberstein SD. Preventive migraine treatment. *Continuum: Lifelong Learning in Neurology*. 2015 Aug 1;21(4):973-989.
4. Lajmi H, Choura R, Achour BB, et al. Headache associated with refractive errors: Characteristics and risk factors. *Revue neurologique*. 2021 Oct 1;177(8):947-954.
5. Friedman DI. The eye and headache. *CONTINUUM: Lifelong Learning in Neurology*. 2015 Aug 1;21(4):1109-1117.
6. Mohammed Dhaiban TS, Ummer FP, Khudadad H, Veetttil ST. Types and Presentation of Refractive Error among Individuals Aged 0–30 Years: Hospital-Based Cross-Sectional Study, Yemen. *Advances in Medicine*. 2021;2021(1):5557761.
7. Sheppard AL, Wolffsohn JS. Digital eye strain: prevalence, measurement and amelioration. *BMJ Open Ophthalmol*. 2018 Apr 16;3(1):e000146.
8. Nicholson RA, Houle TT, Rhudy JL, Norton PJ. Psychological risk factors in headache. *Headache*. 2007 Mar;47(3):413-426.
9. Rains JC, Poceta JS. Headache and sleep disorders: review and clinical implications for headache management. *Headache*. 2006 Oct;46(9):1344-1363.
10. Lipton RB, Sollars CM, Buse DC. Epidemiology, progression, prognosis, and comorbidity of migraine. *Headache*. 2013;64–87.
11. Schramm SH, Moebus S, Lehmann N, et al. The association between stress and headache: A longitudinal population-based study. *Cephalalgia*. 2015 Sep;35(10):853-863.
12. Burch R. Migraine and Tension-Type Headache: Diagnosis and Treatment. *Med Clin North Am*. 2019 Mar;103(2):215-233.
13. Hayne DP, Martin PR. Relating Photophobia, Visual Aura, and Visual Triggers of Headache and Migraine. *Headache*. 2019 Mar;59(3):430-442.
14. Nash JM, Thebarg RW. Understanding psychological stress, its biological processes, and impact on primary headache. *Headache*. 2006 Oct;46(9):1377-1386.
15. Sheppard AL, Wolffsohn JS. Digital eye strain: prevalence, measurement and amelioration. *BMJ Open Ophthalmol*. 2018 Apr 16;3(1):e000146.
16. Kaur K, Gurnani B, Nayak S, et al. Digital Eye Strain- A Comprehensive Review. *Ophthalmol Ther*. 2022 Oct;11(5):1655-1680.
17. Serenje M, Muma KI, Mutoloki EM. Patterns of refractive errors among medical students at the University of Zambia School of medicine. *Ophthalmol Res: Int J*. 2023;18(2):1-3.

18. Buse DC, Manack AN, Fanning KM, et al. Chronic migraine prevalence, disability, and sociodemographic factors: results from the American Migraine Prevalence and Prevention Study. *Headache: The Journal of Head and Face Pain.* 2012 Nov;52(10):1456-1470.
19. Lampl C, Thomas H, Tassorelli C, et al. Headache, depression and anxiety: associations in the Eurolight project. *J Headache Pain.* 2016;17:59.
20. Fernández-de-Las-Peñas C, Fernández-Muñoz JJ, Palacios-Ceña M, et al. Sleep disturbances in tension-type headache and migraine. *Ther Adv Neurol Disord.* 2017 Dec 6;11:1756285617745444.
21. Artemenko AR, Filatova E, Vorobyeva YD, et al. Migraine and light: A narrative review. *Headache.* 2022 Jan;62(1):4-10.
22. Shenoy D. Neuro-ophthalmic manifestations of intracranial tumors: a descriptive study [master's thesis]. Bengaluru (India): Rajiv Gandhi University of Health Sciences.
23. American College of Emergency Physicians Clinical Policies Subcommittee (Writing Committee) on Acute Headache;; Godwin SA, Cherkas DS, Panagos PD, et al. Clinical Policy: Critical Issues in the Evaluation and Management of Adult Patients Presenting to the Emergency Department With Acute Headache. *Ann Emerg Med.* 2019 Oct;74(4):e41-e74.