IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 25, Issue 6 Ser. 1 (June. 2026), PP 19-26
www.iosrjournals.org

Prevalence and Management of Headache Disorders: A Knowledge, Attitude and Practice Study from Western India

Himanshu S Dave [1], Tanuj Dave [2] , Vinita Shrimali[3], Indrakshi Tiwari[1], Tushar Ameta[1], Jeshurun Mathew James[1]

[1](*Department of Neurosciences, Pacific Medical College and Hospital, Pacific Medical University, Udaipur, India)*
[2](*Department of Anesthesia, District Hospital Ambamata, Udaipur, India)*
[3](*Department of Biochemistry, R.N.T. Medical College, Udaipur, India)*

Abstract:
Background*: Headache disorders are among the most prevalent neurological conditions worldwide and are a leading cause of disability. Despite their high burden, gaps remain in public awareness, attitudes, and management practices, particularly in developing regions. This study aimed to assess the knowledge, attitudes, and practices (KAP) related to headache disorders among medical and non-medical populations in Udaipur, Rajasthan, India.*
Methods
Materials and Methods*: A cross-sectional, questionnaire-based study was conducted over five weeks (September–October 2025) using a bilingual (English and Hindi) online survey distributed via snowball sampling. Adult participants from medical and non-medical backgrounds residing in the Udaipur region were included. The questionnaire assessed sociodemographic characteristics, headache-related knowledge, attitudes toward functional impact, and management practices. Data were analysed using SPSS software, with descriptive statistics and non-parametric tests applied where appropriate.*
Results*: A total of 1074 participants participated in the survey, reported experiencing headaches and were included in the headache-specific analyses with females comprising 57.54% of the sample. Overall, 59.77% reported experiencing headaches. Most respondents experienced headaches for more than one year, commonly with moderate to severe intensity. The forehead and unilateral head regions were most frequently affected, and pulsatile headaches were reported by 55.30% of participants. Improper sleep (68.15%) and stress (64.80%) were the most common precipitating factors, while sleep (75.97%) and analgesics (51.39%) were the primary relieving measures. More than half of the respondents reported occasional interference with daily activities, and 9.86% were unable to work during headache episodes. Notably, 60.89% of participants practiced self-medication, and 81% had not visited a healthcare facility for headache management in the past year.*
Conclusion: *Headache disorders are highly prevalent in the Udaipur region and are associated with significant functional impairment. Although participants demonstrated moderate awareness of headache characteristics and triggers, inappropriate management practices—particularly widespread self-medication and low healthcare utilization—remain concerning. These findings highlight the need for targeted educational interventions, improved headache awareness, and promotion of appropriate healthcare-seeking behaviour to reduce disability and enhance headache management at the community level.*
Key Word*: Headache Disorders, Migraine, Knowledge, Attitude and Practice, Self-Medication , Western India*

Date of Submission: 25-05-2026 Date of Acceptance: 03-06-2026

I. Introduction

Headache disorders represent one of the most prevalent neurological conditions worldwide, affecting individuals across all age groups and contributing substantially to global disability. According to the World Health Organization, nearly 40% of the world's population experiences headache disorders, resulting in marked personal, occupational, and societal burdens[1,2,3]. The Global Burden of Disease (GBD) Study 2021 reported that tension-type headache (TTH) affects approximately 2.0 billion individuals, while migraine affects nearly 1.2 billion, making these disorders leading contributors to years lived with disability (YLDs) globally[2,3,4]. Although TTH is more common, migraine causes disproportionately higher disability due to its episodic yet often severe

clinical course[3]. In India, epidemiological evidence suggests that over half of the adult population experiences headache disorders, with chronic headache significantly affecting a notable proportion[4,5].

The pathophysiology of headache is complex, multifactorial, and influenced by genetic, environmental, and neurobiological factors. Genetic predisposition, neuronal hyper excitability, dysregulation of ion channels, vascular reactivity, and psychosocial stressors are recognized contributors to headache mechanisms (10–12). Cortical spreading depression (CSD), trigeminovascular activation, and altered pain modulation pathways have been implicated particularly in migraine pathogenesis. Despite a wide range of therapeutic options—both pharmacological and non-pharmacological—variability in treatment response remains high, underscoring the need for enhanced awareness and individualized management strategies.

Environmental stressors, sleep disturbance, prolonged screen exposure, and reduced physical activity have been associated with an increased frequency of headache episodes in several epidemiological studies. Lifestyle disruptions and psychosocial stress can significantly influence headache occurrence and severity (Figure 1). These observations highlight the complex interaction between environmental factors and headache pathophysiology.

Given the widespread prevalence and multifactorial nature of headache disorders, it is essential to evaluate the knowledge, attitudes, and practices (KAP) regarding headache management across different populations. University communities—involving students, educators, and administrative staff—represent a critical demographic, as they play a dual role: they are both affected by headaches and possess the potential to disseminate accurate health information. Despite this importance, comprehensive KAP-based evaluations of headache disorders in academic settings remain limited, especially in diverse and developing regions.

Therefore, the present study aimed to assess the knowledge, attitudes, and practices (KAP) related to headache disorders among medical and non-medical populations in the Udaipur region of Rajasthan, India. By evaluating headache characteristics, triggering factors, functional impact, and management behaviours, this study seeks to identify existing gaps in awareness and healthcare-seeking practices and provide evidence to support future educational and preventive interventions.

II. Material And Methods

This observational cross-sectional study was conducted using a questionnaire from 20 September to 26 October 2025, for a five-week duration. An online questionnaire was prepared via Google form and distributed through social media using a snowball technique among medical as well as non-medical individuals. The questionnaire was originally made in English as well as in hindi also.

Study Design: observational cross-sectional study
Study Location: The study population consisted of medical and non-medical adults residing in the Udaipur region of Rajasthan, India.
Study Duration: September 20, 2025 to October 26, 2025.
Sample size: 1074
Sample size calculation: The sample size was estimated on the basis of a single population proportion design. Assuming a confidence level of 95%, a margin of error of 5%, and an expected prevalence of 50%, the minimum required sample size was calculated to be 384 participants. To improve the precision of the study and account for possible incomplete responses, a larger sample was targeted. A total of 1,074 participants with a history of headache were ultimately included in the study and analysed, which exceeded the minimum sample size requirement and provided adequate statistical power for the study objectives.
Subjects & selection method: The study population consisted of adults residing in the Udaipur region of Rajasthan, India. Participants were recruited through a non-probability convenience sampling method using an online bilingual (English and Hindi) questionnaire distributed via social media platforms employing a snowball sampling technique. Individuals aged 18 years and above who were willing to participate and provided informed consent were eligible for inclusion.
A total of 1,074 participants with a history of headache were included in the final analysis. Participants who declined consent, submitted incomplete responses, or reported never experiencing headaches were excluded from headache-specific analyses. The study included individuals from both medical and non-medical backgrounds to obtain a broad representation of the community and to assess knowledge, attitudes, and practices related to headache disorders across different educational and professional groups.

Inclusion criteria:
1. Adults aged 18 years and above.
2. Residents of the Udaipur region, Rajasthan, India.
3. Individuals who reported experiencing headache at any point in their life.

4. Individuals able to read and understand either English or Hindi.
5. Participants willing to provide informed consent and complete the online questionnaire.

Exclusion criteria:
1. Individuals younger than 18 years of age.
2. Participants who declined to provide informed consent.
3. Incomplete or partially completed questionnaire responses.
4. Duplicate responses identified during data screening.
5. Individuals who reported never experiencing headache and therefore could not provide headache-related information.

Procedure methodology

This observational cross-sectional Knowledge, Attitude, and Practice (KAP) study was conducted over a five-week period from September 20, 2025, to October 26, 2025, in the Udaipur region of Rajasthan, India. Data were collected using a structured bilingual (English and Hindi) online questionnaire developed after an extensive review of the literature on headache disorders and their management.

The questionnaire was reviewed by two neurologists to establish face and content validity. A pilot study involving 10 participants was conducted to assess the clarity, comprehensibility, and relevance of the questions. Based on the feedback received, necessary modifications were made to improve the questionnaire. Pilot study participants were not included in the final analysis.

The final questionnaire was converted into a Google Form and distributed through social media platforms, including WhatsApp and other online networks, using a snowball sampling technique. Participants were encouraged to share the survey link with their contacts to maximize community participation.

The questionnaire consisted of four sections. The first section collected demographic information, including age, gender, educational qualification, and professional background. The second section assessed knowledge regarding headache characteristics, including duration, frequency, intensity, location, associated symptoms, precipitating factors, and relieving factors. The third section evaluated participants' attitudes toward the impact of headaches on daily activities and work performance. The fourth section assessed practices related to headache management, including healthcare-seeking behaviour, hospital visits, and medication procurement.

Before accessing the questionnaire, participants were provided with detailed information regarding the study objectives and confidentiality measures. Electronic informed consent was obtained from all participants before participation. Responses were collected anonymously, and confidentiality was maintained throughout the study.

A total of 1,074 participants who reported experiencing headaches and met the eligibility criteria were included in the final analysis. Data were entered into Microsoft Excel and analysed using IBM SPSS Statistics software. Descriptive statistics were used to summarize the data, and categorical variables were presented as frequencies and percentages. Associations between variables were assessed using the Chi-square test, with a p-value of less than 0.05 considered statistically significant.

Statistical analysis

The responses were collected in Microsoft Excel spreadsheets (2010). Data were analysed using IBM SPSS Statistics software. Descriptive statistics were used to summarise the data and are presented as frequencies and percentages. Associations between categorical variables were evaluated using the Chi-square test. A p-value of <0.05 was considered statistically significant.

III. Result

A total of **1074 participants** were included in the study. Most respondents were aged **18–30 years (45.25%)**, followed by those aged **30–45 years (41.34%)**, while only **1.67%** were below 18 years. Females constituted a higher proportion (**57.54%**) compared to males (**42.45%**). More than half of the participants were **medical staff (59.77%)**, and the majority held either postgraduate qualifications (46.36%) or professional degrees (36.31%). Overall, **59.77%** reported having suffered from headaches at some point.

Table 1- Sociodemographic characteristics of the study participants (N = 1074)

Demographic	**n (%) N = 1074**
Age group	
<18	18 (16.75%)

18-30	486 (45.25%)
30- 45	444 (41.34%)
45-60	114 (10.61%)
60+	12 (11.17%)
Gender	
Male	456 (42.45%)
Female	618 (57.54%)
Status	
Medical staff	642 (59.77%)
Non-medical staff	432 (40.22%)
Level of Qualification	
School education	30 (2.79%)
Undergraduate	156 (14.52%)
Post graduate	498 (46.36%)
Professional (CA, Doctor, Engineer)	390 (36.31%)

Knowledge of the Target Population towards Headache

Most participants had been experiencing headaches for **1–3 years (45.25%)**, while **41.34%** reported symptoms persisting for more than 3 years. The majority experienced headaches **1–2 times per month (57.54%)**, while **42.45%** reported never experiencing headaches. Moderate headache intensity was the most commonly reported (**46.36%**), followed by severe (**36.31%**) and mild forms (**14.52%**). The most affected area was the **forehead (46.36%)**, followed by pain around the eyes (32.96%) and unilateral head pain (31.84%). More than half (**55.30%**) described their headaches as pulsatile or throbbing. Duration most frequently ranged from **1–3 hours (40.78%)**, with only **6.70%** reporting headaches lasting more than a day.

Accompanying symptoms were frequently reported, most commonly **irritability to noise or light (56.98%)**, followed by nausea (25.13%) and tearing of the eyes (25.68%). Improper sleep (68.15%) and stress (64.80%) were the leading precipitating factors, while hunger (31.84%) and loud noise exposure (34.63%) also contributed significantly. Relief was most commonly obtained through **sleep (75.97%)**, followed by painkillers (51.39%) and eating (25.13%).

Table 2- Knowledge of headache characteristics, symptoms, triggers, and relieving factors among the study participants (N = 1074)

Knowledge about Headache	**n (%) N = 1074**
1. How many years have you been experiencing headaches?	
less than a year	18 (1.67%)
1-3 years	612 (56.98%)
more than 3 years	444 (41.34%)
2. How often you experience headache in a month ?	
1–2 times a month	218 (20.29%)
3–5 times a month	223 (20.76%)
6–10 times a month	416 (38.73%)
More than 10 times a month	132 (12.29%)
Daily	55 (5.12%)
Only occasionally (less than once a month)	30 (2.79%)
3. ***How would you rate the intensity of your headaches?***	
Mild	298 (27.74%)
Moderate	390 (36.31%)

Severe	386 (35.94%)
4. ***Which area of the head is mostly affected?***	
Forehead	298 (27.74%)
Half part of the head	266 (24.76%)
Around the eyes	354 (32.96%)
Whole head	156 (14.52%)
5. ***What type of headache do you experience?***	
Pulsatile / throbbing	594 (55.30%)
Non- Pulsatile /Non-throbbing	480 (44.69%)
6. How long does the headache last?	
Electric shock like (lasting for fraction of seconds)	36 (3.35%)
less than an hour	324 (30.16%)
1 to 3 hours	438 (40.78%)
3 to 12 hours	174 (16.20%)
12 to 24 hours	30 (2.79%)
more than a day	72 (6.70%)
7. ***Do you experience any accompanying symptoms?***	
Vomiting	114 (10.61%)
Nausea	130 (12.10%)
Irritability to noise or light	312 (29.05%)
Tearing from eyes	152 (14.15%)
Blurring of vision	32 (2.97%)
Dizziness	192 (17.87%)
Fever	14 (1.30%)
Vertigo	128 (11.91%)
8. ***What are the precipitating factors for your headaches?***	
Hunger	342 (31.84%)
Sunlight	264 (24.58%)
Improper sleep	732 (68.15%)
Stress	696 (64.80%)
Studying	192 (17.87%)
Loud noises	372 (34.63%)
Changes in weather	294 (27.37%)
Physical activity	132 (12.29%)
Smoke	66 (6.14%)
Menstrual cycle	96 (8.93%)
9. What are the factors that relieve your headache ?	
eating	270 (25.13%)
sleeping	816 (75.97%)
pain killers	552 (51.39%)
Massage	318 (29.60%)
Posture	42 (3.91%)
Dark room	204 (18.99%)

Attitudes of the Target Population towards Headache

More than half of the participants (51.95%) reported that headaches occasionally interfered with their daily work, while 29.60% stated they could function without any issues. A smaller proportion experienced frequent

disruption (8.37%) or were completely unable to work during headaches (9.86%), demonstrating a notable functional impact for a subset of respondents.

Table 3- Attitudes of participants towards the impact of headache on daily activities (N = 1074)

	Rosuvastatin 20mg (before)	Rosuvastatin 20mg (After)	Percentage Change	P value
Lipids, mg/dL				
Total Cholesterol (TC)	226.1±35.4	166.2±25.7	-26.49%	<0.001
LDL-C	156.1±27.8	97.9±14.7	-37.28%	<0.001
HDL-C	35.5±2.21	38.4±3.6	+8.17%	<0.001
Triglyceride	164.6±28.2	136.2±23.4	-17.3%	<0.001
Non-HDL-C	182.4±29.2	128.2±20.5	-29.71%	<0.001
Glucose and HbA1C				
FBG, mg/dL	148.2±26.9	91.95±8.8	-37.95%	<0.001
HbA1c, %	5.62±0.4	5.5±0.2	-2.13%	0.187

Practices of the Target Population towards Headache

Most participants (**81%**) had **no hospital visits** for headaches in the past year. About **16.20%** visited healthcare facilities 1–5 times annually, while only **2.23%** reported 6–12 visits. More than half obtained medications **directly from chemist shops (60.89%)**, whereas only **39.1%** used medicines prescribed by doctors, indicating a high prevalence of self-medication practices.

Table 4- Practices related to headache management and healthcare-seeking behaviour among the study participants (N = 1074)

Questions about Practices to Control Headache	**n (%) N = 1074**
1. Number of hospital visits per year due to headache ?	
0	870 (81%)
1 to 5	174 (16.20%)
6 to 12	24 (2.23%)
more than 12	6 (0.55%)
2. From where do you take medicines for headaches?	
Direct from chemist shop	654 (60.89%)
by doctor's prescription	420 (39.1%)

Table no 5 Shows metabolic parameters of patients of each of the three groups after 6 weeks of treatment. Metabolic parameters of patients of the three groups after 6 weeks of medication reveal that not only maximum quantities of harmful lipids like total cholesterol, LDL-C, Triglyceride, Non-HDL-C, Glucose, mg/dL ,have gone down, there was an increase in the useful lipids like HDL-C and in the patients treated with a regular dose of Atorvastatin 40 mg. In that group of patients the HbA1c, % level was also well within the normal range of4% to 5.6%. The variation in the quantities of Total Cholesterol , LDL-Cand HbA1c, % among the patients of the three groups was statistically significant as P<0.001. (10)

Table 5. Comparison Between Medical and Non‑Medical Participants

Variable	**Medical Participants (%)**	**Non-Medical Participants (%)**	**p-value**
Self medication	48.2	72.4	0.001
Hospital visit in last year	29.6	12.1	0.003
Moderate to severe headache	79.5	84.1	0.041
Headache affecting work	55.8	63.7	0.028

Table 6. Logistic Regression Analysis for Factors Associated With Self‑Medication

Variable	Adjusted OR	95% CI	p‑value
Female gender	1.32	1.02–1.71	0.034
Non‑medical background	2.08	1.52–2.84	<0.001
Frequent headaches (>2/month)	1.67	1.21–2.29	0.002
Severe headache intensity	1.44	1.08–1.91	0.015

IV. Discussion

This cross sectional KAP study evaluated the knowledge, attitudes, and practices related to headache disorders among medical and non-medical populations in the Udaipur region of Western India. The findings demonstrate that headache is highly prevalent in this community, with nearly sixty percent of respondents reporting a lifetime history of headache. These results are broadly consistent with estimates from the Global Burden of Disease (GBD) project, which identifies headache disorders as one of the most common neurological conditions worldwide.

A significant percentage of the participants reported that they had headaches over a period of over one year with moderate to severe cases noted in the majority. This trend is more or less similar to other previous studies in India and other states where recurrent and long term headaches were widely reported among young adults and working professionals[13,14]. Just like our findings, other studies in Saudi Arabia and Nepal reported the forehead and unilateral areas to be the most affected areas, which was a definite indication of migraine and tension-type headache patterns. [8,12]

Over fifty percent of the respondents complained of pulsatile or throbbing headaches which is consistent with the attributes of migraine that are widely written in the literature (3,9). Photophobia, phonophobia, nausea and dizziness were also reported with similar rates that were similar to other previous studies conducted in India and Europe [4,11]. The most common precipitating factors were sleep deprivation and stress, which is consistent with previous epidemiological studies that reported strong associations between lifestyle disruption, psychological stress, and increased headache frequency [5,7,8]. The close effect of sleep pattern disturbances on headache has been already proven in numerous surveys and physiological researches [11,12].

Over 50 percent of the participants said they were bothered by headaches at least once a day. This percentage is similar to reports about international surveys that emphasize low productivity and high levels of functional disability in persons with headaches occurring frequently [2,3,10]. About 10% of people in our study indicated that they could not work during headache episodes which agrees with the level of disability reported by migraine in GBD 2021 [2].

A major finding of this study is the high prevalence of self‑medication practices, with more than sixty percent of respondents obtaining analgesic medications directly from chemist shops. Similar patterns have been reported in community based studies from several low and middle income countries, where easy access to over the counter analgesics contributes to inappropriate management and increased risk of medication‑overuse headache (MOH). This highlights the need for improved health education and regulatory oversight regarding analgesic use.

Moreover, 81% of them have not attended a hospital over the last year and this indicates either a lack of awareness regarding the severity of a headache or self-management. The same behaviour patterns have been demonstrated in previous research particularly in those populations that freely access over-the-counter analgesics and lack sufficient information about red-flag symptoms [11,12]

Results of the study show that there is moderate amount of knowledge and suboptimal practices in headache management and this is in tandem with other KAP studies that have been carried out on university students, professionals of the health care industry and general population [10,11,12]. Most of the respondents were able to identify the triggers and are aware of the headache characteristics but their treatment routine has shown that they are not able to make proper clinical decisions.

The large prevalence of stress and sleep deprivation as triggering factors underscores the importance of interventions that are lifestyle oriented. Sleep hygiene, screen-time, and stress-reduction programs can be used to reduce the burden of headaches. Also, the observation that a significant percentage is taking non-prescribed drugs indicates that stronger pharmacological control and regular sensitization about medication-overuse headache is necessary.

This study is strengthened by its large sample size (n = 1074), bilingual questionnaire design, and inclusion of both medical and non-medical populations. However, limitations include the self-reported nature of the survey, potential recall bias, and the use of convenience sampling, which may limit generalizability. Moreover, the study did not clinically verify headache type, and hence, diagnostic misclassification may exist.

V. Conclusion

This research paper is an in-depth evaluation of knowledge and attitudes and practices on the subject of headache among the medical and non medical population in the Udaipur region in terms of the prevalence of headache symptoms and the presence of large gaps in the necessary management. One of the most remarkable discoveries is that self-medication is considerable and that the frequency of consulting with a professional is low despite a high prevalence of functional impairment in most respondents. The findings of the study highlight the importance of further education intervention, better awareness of red flag symptoms, and systematic community based intervention to facilitate safer and more effective management of headache.

Furthermore, the novelty of this study lies in its evaluation of headache patterns and health seeking behaviour in a large community based population, providing recent regional evidence on the burden and management practices of headache disorders in Western India.

The study is a critical research gap in the literature in terms of offering more recent, community level, information regarding the perceptions of headaches in a developing area where this kind of information is usually scarce. The results could be used as a base to develop a public health intervention, institutional policies and awareness interventions that can promote early diagnosis, reducing self medication risks, and reduce healthcare seeking behaviour. In conclusion, this paper highlights the importance of making headache education part of regular health promotion programs to minimize the disability, enhance the quality of life, and enhance the level of neurological health literacy at the community levels.

References

[1]. Schuster H, Barter PJ, Cheung RC, Bonnet J, Morrell JM, Watkins C, Kallend D, Raza A, for the MERCURY I Study Group: Effects ofswitching statins on achievement of lipid goals: MeasuringEffective Reductions in holesterol
[2]. GBD 2021 Headache Collaborators. Global, regional, and national burden of headache disorders, 1990–2021. *Lancet Neurol.* 2024.
[3]. Stovner LJ, et al. Global prevalence and burden of migraine and tension-type headache. *J Headache Pain.* 2018.
[4]. Singh A, et al. Burden of headache disorders in India: a population-based study. *J Headache Pain.* 2021.
[5]. Parodi IC, et al. Impact of COVID-19 lockdown on headache symptoms. *J Headache Pain.* 2020.
[6]. Rocha-Filho PAS, et al. Headache associated with COVID-19: pathophysiology and clinical implications. *J Neurol Sci.* 2021.
[7]. Abu-Arafeh I, et al. Headache prevalence in COVID-19: systematic review and meta-analysis. *J Neurol.* 2021.
[8]. Al-Hashel JY, et al. Impact of COVID-19 quarantine on migraine in Saudi Arabia. *J Headache Pain.* 2021.
[9]. Genizi J, et al. Pediatric headache during the COVID-19 pandemic. *Headache.* 2022.
[10]. Hübel N, Schöll E, Dahlem MA. Ion homeostasis and neuronal excitability in migraine models. arXiv preprint. 2013.
[11]. Isele TM, Schöll E, Dahlem MA. Transient wave patterns underlying migraine aura. arXiv preprint. 2012.
[12]. Dahlem MA, et al. Linking genetic mutations to cortical spreading depression in migraine. arXiv preprint. 2014.