

# KNOW Homoeopathy Journal

Bi-Annual, Indexed, Double-Blind, Peer-Reviewed, Research Scholarly, Online Journal in Field of Homoeopathy

KNOW Homoeopathy Journal Vol-4 & Issue-2, 18 October 2024, Published at

<https://www.knowhomoeopathyjournal.com/2024/10/volume-4-issue-2.html>, Pages: 21-31, Title: Prevalence of migraine among undergraduate students of homoeopathic medical colleges in rajasthan: A cross- sectional study, Authored By: Dr. Nitiksha Sharma (M.D. Scholar, Department of Materia Medica, Swasthya Kalyan Homoeopathic Medical College & Research Centre, Jaipur, Rajasthan, India.) & Co-Authored By: Prof. DR.Yogeshwari Gupta (Principal, HOD Department of Materia Medica, Swasthya Kalyan Homoeopathic Medical College & Research Centre, Jaipur, Rajasthan, India.), Dr. Shuchita Chattree (Associate Professor, Department of Materia Medica, Swasthya Kalyan Homoeopathic Medical College & Research Centre, Jaipur, Rajasthan, India.), Dr. Swarupananda Sarkar (Associate Professor, Department of Psychiatry, Swasthya Kalyan Homoeopathic Medical College & Research Centre, Jaipur, Rajasthan, India.)



VOLUME-4 ISSUE-2  
OCTOBER 2024

## RESEARCH

### Title: Prevalence of migraine among undergraduate students of homoeopathic medical colleges in rajasthan: A cross- sectional study

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## ABSTRACT

**Background:** This study aims to investigate the prevalence of migraine among undergraduate students enrolled in homoeopathic medical colleges in Rajasthan, shedding light on an often- overlooked aspect of student's health. This survey will provide valuable insights into the scope of the impact on student's daily lives. This study was conducted among undergraduate students in homoeopathic medical colleges in Rajasthan due to an unexplored area, despite its potential on health and academic performance. The survey aims to inform to alleviate the burden of migraine and enhance the overall well- being of undergraduate students in homoeopathic medical colleges in Rajasthan.

**Methodology:** An online form of ID Migraine TM questionnaire was administered via link to the

students. For analysis, we used STATA version 15.1 and MS Excel for data management. Descriptive statistics were reported using frequency and percentages. Students who answered "yes" to at least three out of five questions in the questionnaire were classified as having a migraine.

**Results:** The Swasthya Kalyan Homoeopathic Medical College & Hospital in Jaipur had the highest number of participants in the study. The sample had a greater proportion of female participants (64%). Majority of the students (94%) were between the ages of 17 and 26. 1/4<sup>th</sup> of the individuals (117) reported experiencing migraine. The highest prevalence of migraine (60.7%) was reported among 22–26-year-old. Female students are more susceptible than males.

**Conclusion:** Our survey aimed to investigate the prevalence of migraine among undergraduate students from various homoeopathic medical institutions. Only 24.22% of the students reported experiencing migraines.

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**Keywords:** *Homoeopathic Undergraduate students, Homoeopathic medical colleges, Prevalence of migraine, Rajasthan.*

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Received: 23/07/2024

Accepted: 17/09/2024

Published: 18/10/2024

**How to cite this research paper:**

Sharma N, Gupta Y, Chattree S, Sarkar S. Prevalence of migraine among undergraduate students of homoeopathic medical colleges in rajasthan: A cross- sectional study, 2024; 4(2):21-31, available at <https://www.knowhomoeopathyjournal.com/2024/10/Prevalence-of-migraine-among-undergraduate-students-of-homoeopathic-medical-colleges-in-rajasthan-cross-sectional-studyv.html>

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## INTRODUCTION:

Over a billion people worldwide suffer from migraine each year, making it one of the most prevalent neurologic conditions with a high frequency and morbidity, particularly in young adults and women. Migraine is a debilitating illness that affects a person's employment and education, interpersonal relationships, and financial status. According to estimates, there will be 1.1 billion instances of migraine worldwide in 2019.<sup>[1]</sup>

In most cases, unilateral episodes of moderate-to-severe headaches accompanied by nausea and increased light and sound sensitivity are the hallmarks of migraine, a complicated illness impacted by genetics.<sup>2</sup> Complex brain events and migraine episodes can last for hours or even days and are a persistent problem.<sup>[2]</sup>

An idiopathic persistent headache disease, migraine without aura can cause bouts that last anywhere from four to seventy-two hours.<sup>[3]</sup>

Common migraine symptoms include unilateral pain, moderate to severe intensity, and throbbing or pulsing sensations, along with nausea, photophobia, or phonophobia.<sup>3</sup> Because migraine episodes may be so severe, they are among the most prevalent headache kinds. They are known to seriously interfere with an affected person's daily activities.<sup>[4]</sup>

Recurrent migraine episodes are linked to pre-migraine, inter-migraine, and post-migraine processes, which significantly affect brain function and related behaviors. Migraine substantially affects the quality of life and make the person irritable and frustrated towards daily work.<sup>[5]</sup>

Headache disorders are recognized as the most incapacitating neurological condition.<sup>[5]</sup>

Migraine is now considered to be more than just a vascular headache, but rather a complex and varied disease of nervous system function due to improved classification and identification of its clinical symptoms. Controlling a person's migraine bouts might be difficult due to the different causes and triggering factors of migraine. Due to accompanying symptoms and the headache patient finds his/ her day-to-day life very difficult and troublesome.<sup>[6]</sup>

Migraine prevalence often increases after adolescence and lasts into late middle age. The episodic nature of headaches is their most distinctive trait. Women often see an exacerbation of migraine symptoms who are on oral contraceptives or during their perimenstrual period. Migraine sufferers have a family who is impacted in around half of cases, which points to a hereditary tendency.<sup>7</sup> Recurrent bouts of this condition triggered by dietary risk variables like chocolate, cheese, and alcohol can lead to attacks.<sup>[7]</sup>

Bilateral pain is frequently experienced, even though the word "migraine" originates from the word "hemicrania," which describes the unilateral localization of pain. The diagnosis of migraine requires a complete clinical history and ruling out alternative headache causes, given its major psychological impact.<sup>[8]</sup>

Contrary to popular assumption, vasoconstriction is necessary for antimigraine medication to be effective; rather, vasodilation is only a subsequent event.<sup>[9]</sup> Although light is often cited as a trigger for migraines.<sup>[10]</sup> Photophobia symptoms in migraineurs are most commonly exacerbated by light and include an aberrant sensitivity to light. These symptoms likely depend on the continuous activity in the trigeminovascular system.<sup>[10]</sup>

Both preclinical and clinical data suggesting that faulty homeostatic systems are probably the cause of migraine.<sup>[11]</sup>

Chronic migraine and medication overuse headache, can now be diagnosed together according to a new change in the International Headache Society's classification system. When certain predisposing factors are combined with regular pain in head, it lowers the threshold for migraine episodes, increasing the likelihood of chronic migraine.<sup>[12]</sup>

The most significant modifiable risk factors for chronic migraine include obesity, depression, stressful life events, misuse of acute migraine medication, and inadequate acute therapy.<sup>[12]</sup>

Headache is typically, but not always, related to migraine, and it can also cause autonomic and systemic symptoms. The International Headache Society's criteria must be followed for diagnosis. The pathogenesis is thought to include processes related to the nervous system.<sup>[12]</sup>

The premonitory phase involves complex interactions between cortical and subcortical brain areas, such as brainstem nuclei that influence nociceptive transmission. It can start as early as three days before the headache phase.<sup>[13]</sup>

A patient's life is greatly impacted by chronic migraine, which has a particularly negative effect on socioeconomic functioning.<sup>[14]</sup>

### AIM OF THE STUDY:

The aim of this study was to assess the prevalence of migraine among Undergraduate students of Homoeopathic Medical Colleges located in Rajasthan.

### RATIONALE OF THE STUDY:

This study was designed to find out more about the prevalence and effects of migraines among homoeopathic undergraduate students. We sought to provide insight into the diverse demographic distribution of migraineurs by gathering data via this survey. Questions are arranged in closed ended manner.

**Participants:** A survey was conducted in Rajasthan to gather information about the experiences of people suffering from migraines. The survey was sent via mail to all homeopathic medical institutions. To ensure a representative sample, people of 17-46 year of ages, genders, and geographic areas were included as participants, who had to self-report their migraine experiences. The survey questionnaire was created online based on the ID migraine™ questionnaire commonly known as Identify migraine Questionnaire.<sup>[15]</sup> The inclusion criteria were used to identify the participants.

The findings from the survey provide new insights on migraines and the challenges faced by sufferers. Understanding this aspect is crucial to better understand the management, prevalence and impact of migraine on undergraduate students. The data

collected from this survey will be used to develop targeted studies and programs aimed at reducing the impact of migraines on individuals and society

### METHODS:

This study was conducted among 1,500 undergraduate students of Homoeopathic medical colleges to find out the prevalence of migraine during July/25/23 to sept/25/23 through a self-administered online survey, ID Migraine™ Questionnaire (Identify migraine questionnaire).<sup>[15]</sup>

**Study-setting:** We conducted our study in Homoeopathic Medical Colleges located across Rajasthan.

**Study- duration:** 2 months

**Study- design:** Cross- sectional study.

**Selection of sample:** Multicentric Sampling.

**Population:** It is around 1500 Undergraduate students of Homoeopathic Medical Colleges located in Rajasthan.

**Sample- Size:** The total no. of participants required in order to complete this study as our data is categorical with 95% confidence level,  $t = 1.96$ , estimated sample size is 227 by using the formula:

$$n = \frac{N}{1 + Ne^2}$$

**Result:** The data was collected from a total of 482 students. Approximately two third were females (64%) and one third were males (36%). Students from 11 medical colleges participated in the survey. Maximum number of Students who participated were from Swasthya Kalyan Homoeopathic medical college and research centre (47%) given in Fig 1. Majority of the students were from 22-26 years of age group (63%) given in table 1.

TABLE 1: DISTRIBUTION OF AGE GROUPS BY GENDER

AGE GROUPS (N=482)	FEMALE (N=308)	MALE (N=174)
17-21 years	97 (31.5%)	51 (29.3%)
22-26 years	203 (65.9%)	102 (58.6%)
27-31 years	5 (1.6%)	15 (8.6%)
32-36 years	2 (0.6%)	3 (1.7%)
37-41 years	1 (0.3%)	1 (0.6%)
42-46 years	0 (0.0%)	2 (1.1%)

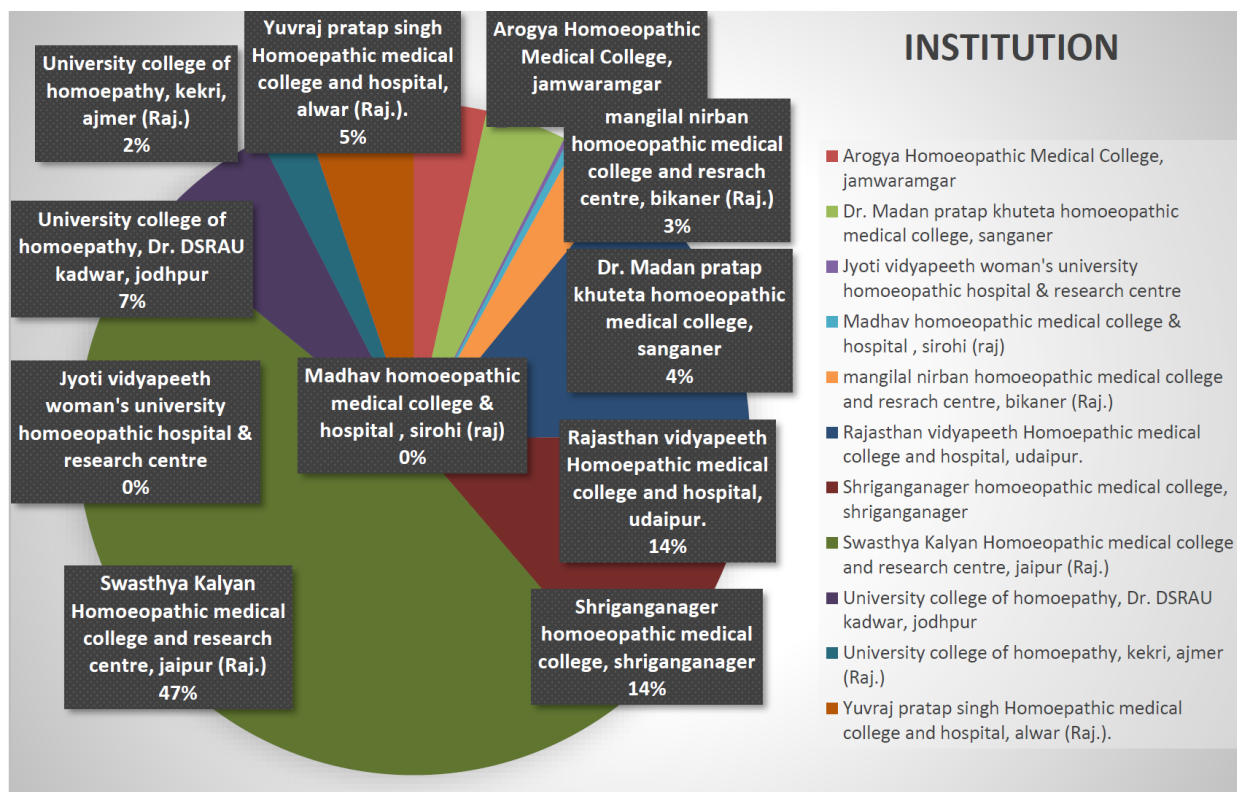


FIGURE 1: PIE DISTRIBUTION OF INSTITUTE

The ID-migraine Questionnaire (Identify migraine questionnaire) had a total of 5 questions and participants who answered yes for at least 3 out of the first 4 questions, were categorized as those who had migraine <sup>[15]</sup>

The overall prevalence of migraine was found to be 24.3%. Among the 117 participants who had migraine, 90 (77%) were females and 27 (23%) were males.

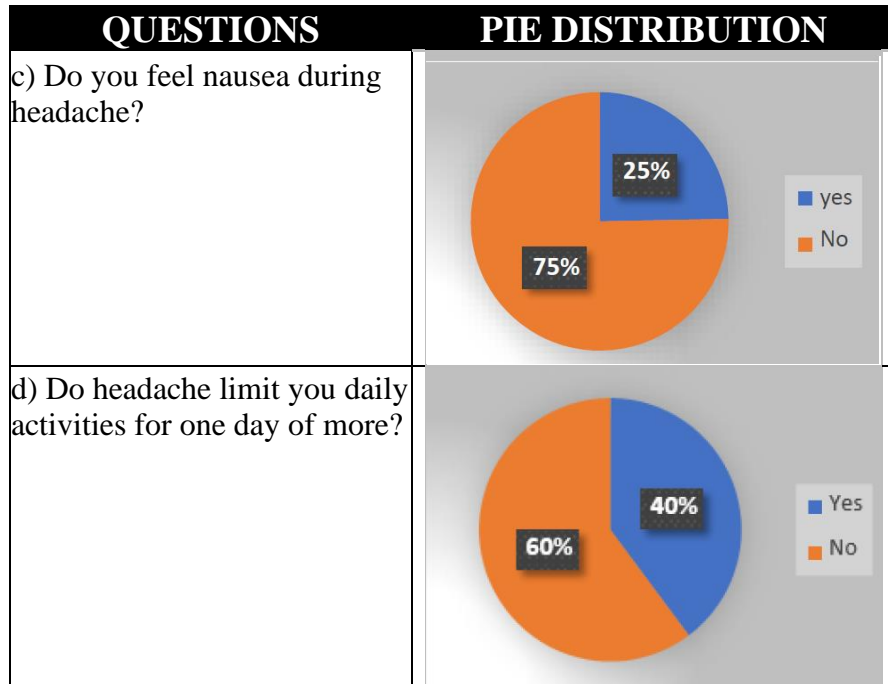
**TABLE 2: PREVALENCE OF MIGRAINE – OVERALL AND BY AGE GROUPS**

MIGRAINE	FREQUENCY (%)
Yes	117 (24.3)
No	366 (75.7)
BY AGE GROUPS	FREQUENCY (%)
17-21 years	39 (33.3)
22-26 years	71 (60.7)
27-31 years	6 (5.1)
32-36 years	1 (0.9)
37-41 years	0 (0)
42-46 years	0 (0)

The last question of the questionnaire recorded 2 possible cause of headache which can be confused as migraine. A few symptoms related to migraine were also recorded as part of the last question. Approximately one-fifth of the participants were found to have experienced pain at the front of the head and 22.4% participants said that they experience pain around eyes, cheeks, and forehead. Poor sleep was prevalent in 27% of the participating students.

**TABLE 3: RESPONSE DISTRIBUTION OF THE PARTICIPANTS FOR QUESTIONS 1-4 OF THE ID MIGRAINE™ QUESTIONNAIRE (IDENTIFY MIGRAINE QUESTIONNAIRE)**

QUESTIONS	PIE DISTRIBUTION
a) Have you ever experienced pain in head?	<p>A pie chart showing the distribution of responses for question a). The 'Yes' response is 31% (blue slice) and the 'No' response is 69% (orange slice). A legend on the right indicates blue for 'Yes' and orange for 'No'.</p>
b) Does light bother you when you have a headache?	<p>A pie chart showing the distribution of responses for question b). The 'Yes' response is 47% (blue slice) and the 'No' response is 53% (orange slice). A legend on the right indicates blue for 'Yes' and orange for 'No'.</p>



**FIG 2: BAR GRAPH REPRESENTING THE RESPONSE DISTRIBUTION OF QUESTION 5 OF THE QUESTIONNAIRE**

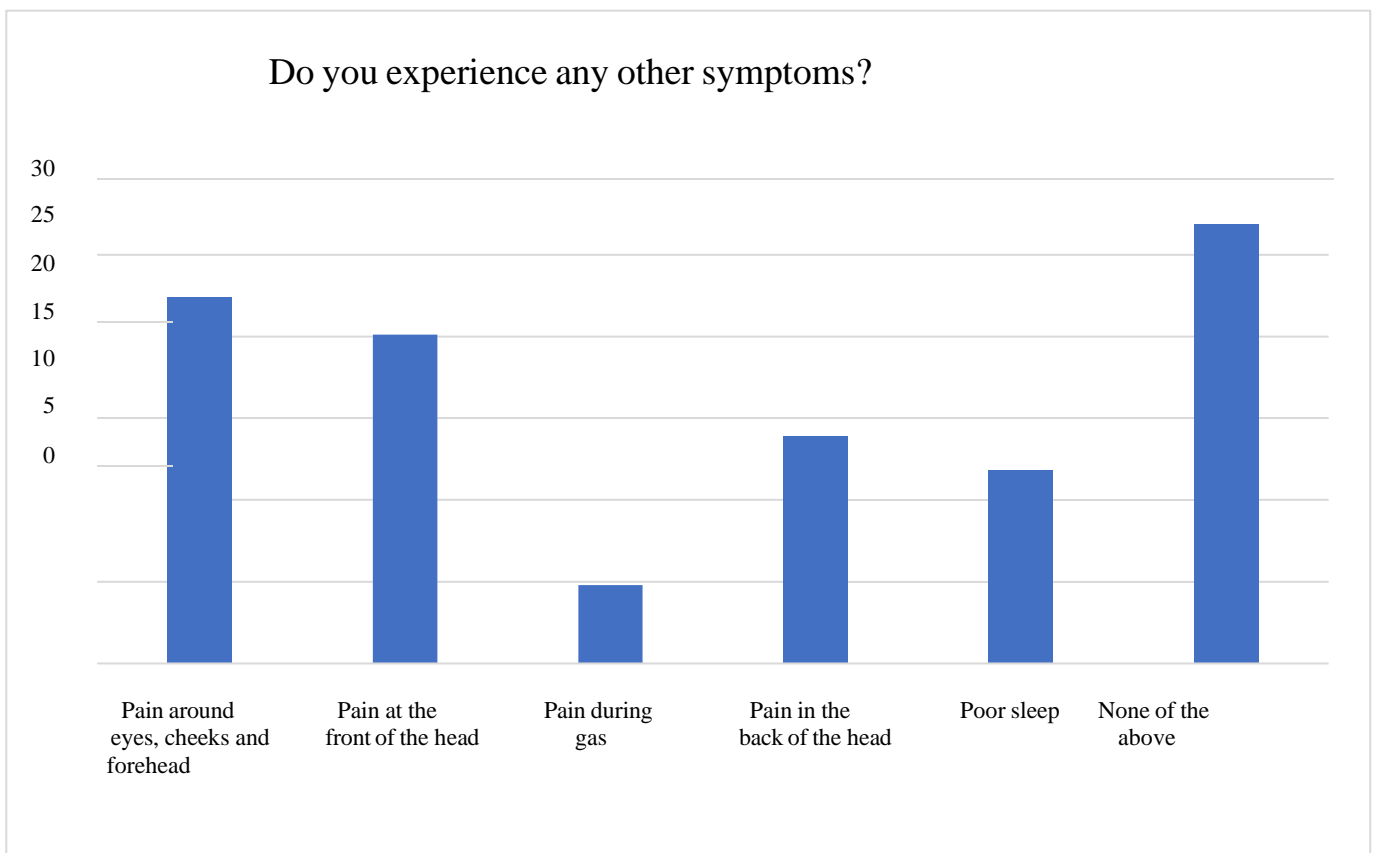


TABLE 4: RESPONSE DISTRIBUTION OF THE QUESTIONS BY GENDER

ID Migraine™ Questionnaire (N=482)	Female(n=308)	Male (n=174)
<b>1. Have you ever experience pain inhead?</b>		
Occasionally	198 (64.3%)	133 (76.4%)
Often	110 (35.7%)	41 (23.6%)
<b>2. Does light bother you when you have a headache?</b>		
No	128 (41.6%)	97 (55.7%)
Yes	180 (58.4%)	77 (44.3%)
<b>3. Do you feel nausea duringheadache?</b>		
No	220 (71.4%)	143 (82.2%)
Yes	88 (28.6%)	31 (17.8%)
<b>4. Do headache limit your daily activities for one day or more?</b>		
No	170 (55.2%)	120 (69.0%)
Yes	138 (44.8%)	54 (31.0%)
<b>5. Do you experience any other symptoms?</b>		
Pain around eyes, cheeks and forehead	81 (26.3%)	27 (15.5%)
Pain at the front of the head	61 (19.8%)	36 (20.7%)
Pain during gas	11 (3.6%)	12 (6.9%)
Pain in the back of the head	46 (14.9%)	21 (12.1%)
Poor sleep	34 (11.0%)	23 (13.2%)
None of the above	75 (24.4%)	55 (31.6%)



## DISCUSSION

This study aims to rule out the prevalence of migraine, a self-administered questionnaire was used to complete the study. This study interpreting the prevalence of migraine among undergraduate students in Homoeopathic medical colleges. 24.22% students were diagnosed with the migraine. Females are more prone for migraine condition. In our study most of students were selected none of the above in the last question (eliminating question), which helps us to rule out or exclude the non-migraine students from our study. This was a multicentric study among the undergraduate students residing in Rajasthan. Despite the challenges, our study underscores the importance of continued research in this area to inform effective data in the future.

**Migraines are a prevalent health issue that has been studied in two comprehensive surveys in the past. Understanding the prevalence of migraines is crucial to taking proactive steps towards prevention and treatment. Studies are given below:**

a) Several studies have been conducted in India on prevalence and character of headaches. In March 2020, a cross-sectional study was conducted among 2,352 students from Rajshahi University and Jahangirnagar University. The study used a self-administered online survey to evaluate the effect of migraine, using the HIT-6 scale and the ID Migraine™ scale. Statistical tools such as frequency distribution, t-test, Chi-square test, and multiple logistic regression model were employed to identify the parameters associated with migraine prevalence and incidence.<sup>[16]</sup>

b) A study was conducted in a South Indian tertiary care medical college and hospital to determine the prevalence of migraine among medical students. The study aimed to help prevent and effectively treat this illness, by also evaluating how migraine affected the daily lives of the students, the intensity of their migraines, and their behavior in seeking therapeutic options. The study aimed to assess

the impact of migraines on the daily lives of students, the severity of their attacks, and their approach to treatment in order to prevent and treat this condition effectively. The ID migraine questionnaire was used to diagnose migraines. The research found that 60% of the participants (n = 366) reported experiencing headaches. The study also revealed that migraines are quite common among medical students, with half of them reporting only minor impairment from these headaches.<sup>[17]</sup>

The prevalence of migraine observed in these two studies compared with our study. Our study using online survey questionnaire facilitated efficient data collection. Demographic analysis revealed potential associations between migraine and the given factors: age, gender etc. Similarly, a cross-sectional studies where we utilize an online questionnaire to gather data to evaluate the effect of migraine on the students of medical colleges & university. Despite the limitations posed by a smaller dataset compared to similar studies vice versa, our investigation/survey into migraine prevalence offers preliminary insights.

## CONCLUSION

The study provides the most comprehensive data on migraine prevalence among Homoeopathic college undergraduate students located in Rajasthan. Improving identification of migraines at homoeopathic medical colleges could enhance learning outcomes. The prevalence of migraine among undergraduate students of homoeopathic medical colleges located in Rajasthan is very low. Students having less frequent headache, there is a little impact of migraine upon lifestyle of undergraduate students.

## SIGNIFICANCE OF STUDY

Study were used to collect data for prevalence of migraine among undergraduate students. Study was significant for knowing the 1) age distribution suffer from migraine ie; (22-27 years) & 2) sex distribution was 90 (77%) were females and 27 (23%) males.

## LIMITATIONS OF THE STUDY

The migraine diagnosis was not confirmed by neurologist. Data was not collected in detail answers in yes or no (Closed ended questions). Less students were participated in the study.

## ACKNOWLEDGEMENT

We want to extend our sincere gratitude to the **Institutional Ethical Committee (IEC)** for their support and approval of our project. Their commitment to upholding ethical standards has been instrumental in ensuring the smooth and the effective execution of our survey within the established guidelines. We want to express our heartfelt appreciation to **Dr. Meetushi Jain (Senior Research Assistant, Public Health Foundation of India)** for her invaluable assistance as the statistical analyst for our migraine survey. **Dr. Meetushi Jain's** expertise and dedication enormously helped us in ensuring the accuracy and reliability of the data analysis. We want to express our deep appreciation to all those who participated in our survey. Your thoughtful responses and insightful comments have greatly enhanced our understanding. Moreover, we would like to extend our appreciation to the organizations that supported the survey's dissemination, enabling us to reach a diverse and representative group of respondents. Thank you again for your valuable contribution.

## CONFLICT OF INTEREST

There are no conflict of interest.

## FINANCIAL SUPPORT AND SPONSORSHIP: Nil.

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