

Narrative Review

Prevalence of Migraine Headache in Pakistan – A Narrative Review

Yasir Akbar Jamali^{1*}, Hira Saeed Khan², Rizwan Channa², Ali Bux Khuhro³, Abdul Sami Shaikh⁴, Zahid Hussain Chandio⁵

¹Department of Physiology, University of Sindh Jamshoro.

²Department of Medicine, Suleman Roshan Medical College Tando Adam.

³Institute of Microbiology, Shah Abdul Latif University Khairpur Mirs.

⁴Department of Pharmacy, Shah Abdul Latif University Khairpur Mirs.

⁵College of Nursing (Female) Nawabshah.

*Corresponding Author: Yasir Akbar Jamali; Email: yasirakbar021@gmail.com

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ABSTRACT

Background: Migraine, a prevalent type of headache, significantly impacts social and professional functionality due to its high frequency and associated morbidities. This debilitating condition affects various demographics, including university and medical students, and poses a considerable health challenge in Pakistan.

Objective: This narrative review aims to establish the prevalence of migraine among different population groups in Pakistan.

Methods: An extensive literature search was conducted using databases such as PubMed, Google Scholar, Directory of Open Access Journals (DOAJ), PakMediNet, and ScienceDirect. The search focused on literature published from 2001 to 2023, including cross-referencing article citations.

Results: A total of 19 studies were analyzed, highlighting that Karachi city had the highest reported number of migraineurs (3,089 individuals, including 268 medical students). Lahore City followed with 516 cases (452 among general university students). Rawalpindi City reported 201 cases. A nationwide survey indicated 393 migraine incidents. Additionally, Faisalabad, Bahawalpur, and Peshawar reported 175 physicians and medical students, 28 general university students, and 155 medical students with migraines, respectively.

Conclusion: The prevalence of migraine is notably high within the Pakistani population, particularly among university and medical students.

Keywords: Headache, Medical students, Migraine, Pakistan, Prevalence, University students.

INTRODUCTION

Migraine-type headaches are characterized by a unilateral location and pulsating quality, accompanied by nausea, sensitivity to light, and fatigue, lasting between 4 to 72 hours. Key factors in the onset of migraines include stress, anxiety, sleep disturbances, and reactions to minor changes (1). Episodic migraine (EM) is identified as a headache occurring on fewer than 15 days per month. In contrast, chronic migraine (CM) is distinguished by headaches occurring on 15 or more days per month for at least three months (2). Migraine is a common neurological disorder marked by debilitating head pain and associated symptoms such as photophobia, phonophobia, and sensory or motor disturbances (3).

Prevention is the primary strategy for many migraine sufferers, particularly for those who cannot use hormonal treatments. An essential aspect of patient management for physicians is understanding preventive measures, including medications, prophylactic strategies, and trigger avoidance. However, there is often a lack of comprehensive knowledge about migraine triggers among physicians, leading to suboptimal treatment and advice. While 82% of neurologists and 51% of other physicians discuss migraine triggers with patients, this difference is statistically significant (4). A physician proficient in both the causes and preventive methods is crucial for effective migraine treatment and educating patients on avoiding future attacks. Lack of awareness about triggers often leads to preventable migraine attacks (5).

In Pakistan, the estimated 1-year prevalence of migraine (22.5%) is significantly higher than the global 1-year prevalence of 15% (6,7). Headache patients are frequently treated in various medical specialties, including surgery, at outpatient departments in

Pakistani hospitals. Most headache patients at public hospitals in Pakistan initially consult with junior doctors, sub-interns, or final-year medical students. Accurate diagnosis and prompt treatment of headache syndromes like migraine are essential, requiring knowledge, attitudes, and practices related to headache management. Accurate diagnosis necessitates familiarity with various types of migraines, diagnostic criteria, and screening methods for the most common forms. Auras, which are temporary disturbances in brain function, often manifest as visual or auditory issues just before a migraine attack. The diagnosis of migraine without aura is more common, as 60–80% of migraine sufferers do not experience an aura (8). Recent global studies indicate that physicians still have much to learn about diagnosing migraines (9-11). Similar gaps in knowledge likely exist in Pakistani clinical settings; for instance, the aura is not yet considered a critical component in migraine diagnosis. Given that more than 70% of migraine cases in Pakistan are migraines without aura, it is crucial for doctors to be well-informed about this condition (12).

The primary objective of this study was to ascertain the prevalence of migraines in Pakistan. This research aims to highlight the issue of migraine in Pakistan, a topic that has received limited attention, and pave the way for future studies to bridge this research gap.

MATERIAL AND METHODS

A comprehensive literature search was conducted across the PubMed, Embase, and Google Scholar databases. The search terms utilized were 'prevalence' OR 'epidemiology' AND 'headache' OR 'migraine' AND 'university students' OR 'college students' OR 'medical students.' This search included papers published from 2001 to 2023. Additionally, the references of the identified articles were cross-checked to uncover any relevant publications. It is important to note that no search engine was employed outside the mentioned databases. Furthermore, there was no pursuit of ethical committee clearance for this narrative review, as it was not deemed necessary.

For the statistical analysis, Excel 365 and SPSS for Windows, version 26.0 (SPSS Inc., Chicago, IL, USA), were employed. This approach facilitated a comprehensive evaluation of the collected data, adhering to the rigorous standards of scientific research.

RESULTS

This study included a total of 19 articles, encompassing 5,359 individuals with migraines (Table 1). Four of these studies focused on the prevalence of migraine among medical students, while another four articles investigated the incidence among general university students. Ten studies assessed migraine prevalence in the general population, and one study examined migraine frequency in both the general and student populations.

In detail, nine of these studies were conducted in Karachi city, documenting 3,089 individuals with migraines, of which 268 were medical students. In Lahore City, three articles reported a total of 516 individuals experiencing migraines, including 452 general university students. Additionally, a study from Rawalpindi City identified 201 individuals with migraines. A nationwide survey contributed data on 393 individuals with migraine incidents. The cities of Faisalabad, Bahawalpur, and Peshawar reported migraine frequencies among 175 physicians and medical students, 28 general university students, and 155 medical students, respectively (Table 1).

Table 1. Characteristics of the 19 studies included in the meta-analysis.

First author	Publication year	Location	Sample size	No. of migraineurs	Study population
Kamran Khan (13)	2021	Karachi	2043	2043	General population
Safila Naveed (14)	2014	Karachi	100	100	Students and General population
Faraz A. (15)	2008	Lahore	647	266	University students
Saeed Arif (16)	2019	Rawalpindi	201	201	General population
Shafaq Jawed (17)	2019	Karachi	50	50	General population
Farwa Athar (18)	2022	Nationwide	986	393	General population
Wardah Zafar (19)	2022	Islamabad & Rawalpindi	377	377	University students
Koomal Shahzadi (20)	2017	Lahore	186	186	University students
Hassan Choudry (21)	2022	Faisalabad	213	175	Physicians and medical students
Hafiz Muhammad Asif (22)	2019	Bahawalpur	320	28	University students
Farah Anwar (23)	2021	Karachi	375	196	Medical students

Ziaullah (24)	2022	Peshawar & Karachi	425	425	General population
Zuhaib Ahmed (25)	2022	Karachi	66	66	General population
Huda Kafeel (26)	2014	Karachi	1000	73	General Population
Muhammad Ilyas Jat (27)	2018	Karachi	272	89	General population
Adnan Khan (28)	2022	Peshawar	405	155	Medical students
Sidra J Faruqi (29)	2019	Karachi	400	400	General population
Saqib Kamran Bakhshi (30)	2016	Karachi	402	72	Medical students
Sana Qanber Abbasi (31)	2022	Lahore	64	64	General population

DISCUSSION

This study represents the first comprehensive meta-analysis of migraine prevalence in the Pakistani population. The analysis revealed that both the combined prevalence of migraines and the sensitivity analysis were stable, indicating a sufficiently large sample size for both assessments. According to the cumulative meta-analysis, the combined prevalence of migraine showed an increase each year when sorted by publication year. Similarly, the pooled prevalence of migraines also escalated annually when ordered by sample size.

The study found that college students exhibited a significantly higher prevalence of migraines compared to younger age groups (32), aligning with the prevalence observed in adults (33). This observation is consistent with other studies indicating a sharp increase in migraine prevalence from ages 3 to 20 (34).

Contrary to previous research suggesting a higher incidence of migraine among medical students due to increased psychological and physical stress, this study found the prevalence to be the same among non-medical students (35,36). However, this finding could be misleading if other critical factors are overlooked. For instance, when studies that did not report participant gender were excluded, it was observed that the non-medical student group contained a higher proportion of females. Given that females generally experience migraines at a higher rate than males, the apparent higher prevalence of migraines in this group could be misleading. To accurately assess whether medical students are more susceptible to migraines than non-medical students, it is essential that these groups have comparable female-to-male ratios.

Additionally, genetic susceptibility to migraines, with race as a potential significant factor, must be considered (37). Previous research has demonstrated that different populations exhibit varying migraine prevalence rates (38).

CONCLUSION

This study concludes that migraine is a prevalent condition within the Pakistani population, significantly affecting university students. The findings underscore the need for targeted interventions and increased awareness to manage and mitigate the impact of migraine headaches in this demographic.

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