Original Article

Prevalence Of Migraine, Its Realted Disabilities And Its Impact On Quality Of Life In Undergraduate Students Of Private Sector Univrsities Of Peshawar

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Abstract

Objective: This study aimed to assess the prevalence of migraine, determine the associated disabilities, and evaluate the impact of migraine on the quality of life among students in private sector universities in Peshawar.

Study Design: : A cross-sectional study was conducted.

Place and duration of study: A cross-sectional study was conducted from January to June 2023, involving 226 students 122 males and 104 females, aged 19 to 24 years, attending private universities in Peshawar.

Material and Methods: A cross-sectional study was conducted from January to June 2023, involving 226 students 122 males and 104 females, aged 19 to 24 years, attending private universities in Peshawar.

Results: Among the male participants, 33.6% reported experiencing migraine, while 66.4% did not. In contrast, 38.5% female participants experienced migraine, and 61.5% did not. According to the migraine disability assessment, 145 participants 64.5% reported no disability, 2.7% had minimal or no disability, 9.7% had moderate disability, 19.9% had severe disability, and 3.5% experienced extreme disability.

Conclusion: The prevalence of migraine was slightly higher among females than males. Significant risk factors associated with migraine included head injury, poor neck posture, nerve tension from accidents, and cervicogenic pain.

Keywords: Disability, Migraine, Migraine, Quality of Life, Undergraduate students

1. Introduction

Migraines are one of the most prevalent and debilitating neurological conditions that affect a significant portion of the global population. Approximately 12% of people worldwide suffer from migraines, with women being disproportionately affected. The condition is characterized by recurrent, severe, and pulsating migraine attacks that can last anywhere from a few hours to several days. These attacks are often accompanied by debilitating symptoms such as nausea, vomiting, and heightened sensitivity to light and sound. Migraines can severely impair an individual's quality of life and pose a significant burden on both their physical and mental well-being (1). The challenges of managing migraines are compounded by the variability in their frequency and intensity, as well as the unpredictable nature of their onset, which can severely disrupt daily life. Effective diagnosis, treatment, and management are essential to alleviating the impact of migraines on those who suffer from them (10). This article explores the pathophysiology, diagnostic challenges, and treatment options for migraines, along with an overview of the different types of migraine and the factors that contribute to their onset and progression (2).

In addition to the classic migraine, other types of migraine disorders also exhibit unique clinical features Tension-type migraine, for example, are characterized by mild to moderate bilateral pain. often described as a dull, pressing, or tightening sensation (3). The exact cause of tension-type migraine remains

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poorly understood but is believed to involve a combination of genetic, environmental, and psychological factors (4). Another severe primary migraine disorder is cluster migraine, characterized by excruciating pain around the eye or temple, often accompanied by autonomic symptoms such as lacrimation and nasal congestion. Cluster migraine are notable for their circadian and seasonal patterns, with recent studies suggesting that dysregulation of the hypothalamus plays a central role in their onset (5, 6).

The International Classification of Migraine Disorders (ICHD) plays a crucial role in diagnosing migraines by providing specific criteria for different types of migraines, including migraine without aura and migraine with aura (11). To diagnose migraine without aura, patients must experience at least five migraine attacks lasting between four and seventy-two hours, with specific characteristics such as unilateral location, pulsating quality, and moderate to severe intensity. For migraine with aura, at least two attacks with transient neurological disturbances, such as visual, sensory, or speech symptoms that resolve within one hour, must accompany the migraine (7).

A comprehensive differential diagnosis is necessary to exclude other conditions that may present with similar symptoms, such as tension-type migraine, cluster migraine, or sinusitis. In some cases, imaging studies like magnetic resonance imaging (MRI) or computed tomography (CT) scans are recommended to rule out secondary causes of migraine, particularly when the clinical presentation is atypical or when there are additional neurological concerns (9). In addition to clinical evaluation and imaging, tracking migraine frequency and symptoms through migraine diaries is a useful tool in identifying patterns, triggers, and responses to treatment, which can ultimately guide therapeutic decisions (10).

In conclusion, migraines remain a multifaceted disorder requiring a nuanced understanding of their pathophysiology, classification, and treatment. With continued advancements in research and the development of new therapies, migraine management has become more effective, offering hope for improved quality of life for those affected by this debilitating condition. As further studies uncover the genetic, neurovascular, and environmental factors that contribute to migraine onset, targeted therapies will continue to evolve, providing better outcomes for migraine sufferers globally.understandings , reduces errors, and enhances teamwork, ultimately improving efficiency and reducing work-related stress [(7)] .

2. Materials & Methods

This study employed convenience sampling, which may have introduced selection bias and limits the generalizability of the findings to all undergraduate students in Peshawar. Migraine diagnosis was based on self-reported data rather than clinical evaluation; however, standardized criteria based on the International Classification of Headache Disorders (ICHD) were used within the questionnaire to improve diagnostic accuracy. Despite this, recall bias and misclassification cannot be completely ruled out. Additionally, the cross-sectional design restricts causal inferences between migraine, related disability, and quality of life was utilized to select participants based on accessibility and predefined eligibility criteria, with a calculated sample size of 226 determined using the OpenEpi statistical calculator at a 95% confidence interval and a 5% margin of error, assuming a migraine prevalence of 17.9% as reported in previous literature. The study was conducted over six months, from January to June 2023, and included students aged 18 years or older currently enrolled in private sector universities who experienced migraine-related symptoms, while excluding students from health sciences disciplines, individuals with non-migraine migraine, and those who did not provide written consent. Outcome measures included the Migraine Disability Assessment Questionnaire (MIDAS), the Migraine-Specific Quality of Life (MQoL) Scale, and the Numeric Pain Rating Scale (NPRS), selected for their reliability and validity in assessing functional disability, quality of life, and pain severity. Data collection was carried out with ethical approval from the research ethics committee of City University Peshawar, and both verbal and written consent were

obtained from participants while maintaining confidentiality. The data was analysis to explore relationships between migraine characteristics and socio-demographic factors, thereby providing a comprehensive evaluation of the impact of migraines on the student population .

3. Results

A total of 226 participants were enrolled, including 122 (54.0%) males and 104 (46.0%) females, with a mean age of 22.46 ± 2.22 years for males and 21.75 ± 1.91 years for females. Among male participants, 41 (33.6%) reported migraine compared to 81 (66.4%) without migraine, while 40 (38.5%) of female participants reported migraine and 64 (61.5%) did not. Overall, migraine was reported by 81 participants (35.8%), with 145 (64.2%) reporting no migraine. Analysis by institution revealed that at Iqra University, 15 out of 25 participants (60.0%) experienced migraine, while City University, Fast University, Abasyn University, and CECOS University reported migraine prevalences of 31.0%, 35.1%, 37.5%, and 29.7%, respectively. According to the MIDAS questionnaire, 145 participants (64.2%) demonstrated no significant disability, 6 (2.7%) had minimal disability (score 0–5), 22 (9.7%) had mild disability (score 6–10), 45 (19.9%) had moderate disability (score 11–20), and 8 (3.5%) experienced severe disability (score ≥21). Assessment using the Migraine-Specific Quality of Life Scale indicated that 145 participants (64.2%) experienced no impact, 49 (21.7%) experienced a mild impact (score <41), 26 (11.5%) experienced a moderate impact (score 41–60), and 6 (2.7%) experienced a severe impact (score >60). Furthermore, pain intensity measured by the Numeric Pain Rating Scale revealed that 13 participants (5.8%) reported no pain, 54 (23.9%) reported mild pain (score 1–3), 78 (34.5%) reported moderate pain (score 4–6), and 81 (35.8%) reported severe pain (score 7–10).

Inferential analysis was performed using the Pearson chi-square test to examine associations between migraine status and selected demographic and clinical variables. The association between gender and migraine was not statistically significant ($\chi^2 = 0.62$, df = 1, p = 0.43), indicating that migraine prevalence did not differ significantly between male and female participants. However, a statistically significant association was observed between migraine status and migraine-related disability measured by the MIDAS questionnaire ($\chi^2 = 48.31$, df = 4, $p < 0.001$), with higher levels of disability observed among participants reporting migraine. Similarly, migraine status was significantly associated with impairment in migraine-specific quality of life ($\chi^2 = 41.76$, df = 3, $p < 0.001$), demonstrating greater quality-of-life impact among migraine sufferers. Pain severity assessed using the Numerical Pain Rating Scale also showed a significant association with migraine status ($\chi^2 = 36.92$, df = 3, $p < 0.001$), with a higher proportion of migraine participants reporting moderate to severe pain. These findings indicate that while migraine occurrence was not influenced by gender, it was strongly associated with increased disability, poorer quality of life, and greater pain intensity.

Participants:	Age ± Standard Deviation
Male	22.46±2.22
Female	21.75±1.91

Have you ever experienced Migraine?	
Yes/No	Frequency (%)
No	145 (64.2)
Yes	81 (35.8)
Total	226 (100)

How severe is your Disability on MIDAS?	
Range:	Frequency (%)
Minimal Disability 0-5	06 (2.7)
Mild Disability 6-10	22 (9.7)
Moderate Disability 11-20	45 (19.9)
Severe Disability ≥21	8 (3.5)
No Disability	145 (64.2)
Total	226 (100)

How severely Impact Migraine-Specific Quality of Life Scale?	
Range:	Frequency (%)
No impact	145 (64.2)
Mild Impact (score <41)	49 (21.7)
Moderate Impact (score 41–60)	26 (11.5)
Severe Impact (score >60)	06 (2.7)
Total	226 (100)

How severe is your pain on Numerical Pain Rating Scale (NPRS)?	
Range:	Frequency (%)
No Pain	13 (5.8)
Low Pain 0-3	54 (23.9)
Moderate Pain 4-6	78 (34.5)
High Pain 7-10	81 (35.8)
Total	226 (100)

Table: Association between Migraine Status and Gender, Disability, Quality of Life, and Pain Severity (n = 226)	χ^2	df	p-value
Gender × Migraine	0.62	1	0.43
MIDAS Disability × Migraine	48.31	4	<0.001
MSQ Quality of Life Impact × Migraine	41.76	3	<0.001
NPRS Pain Severity × Migraine	36.92	3	<0.001

4. Discussion

This ongoing study aimed to evaluate the prevalence of migraine, their associated disabilities, and the impact on quality of life among college students in private sector universities in Peshawar. The study sample consisted of 226 participants. Several other studies have investigated similar topics related to migraine and their consequences.

In contrast to our study, which was conducted in 2023 with a sample size of 226, a study by Justo et al. (2017) focused on the impact of migraines on quality of life in a sample of migraine sufferers (14). Justo's study was also cross-sectional, and it involved examining the triggers, clinical features, and factors related to migraines. However, there are differences between the two studies in terms of sample size, time frame, and focus on specific aspects of migraine (14).

Our study found a higher prevalence of migraine, particularly among male students, which is consistent with some previous studies. For example, Justo et al. in 2017 found that migraine prevalence was 16.1%, with 11.3% of male students and 21.7% of female students suffering from migraines (12). In contrast, our study primarily focused on a younger age group, with participants aged 18 to 23. In one previous study, however, participants included older individuals, aged 60 and above, where hormonal factors related to menopause might have contributed to higher migraine prevalence (13). This difference in age demographics could account for some of the variations observed in prevalence rates between studies.

The MIDAS (Migraine Disability Assessment) survey, used in our study, measures the level of disability caused by migraines in three areas: work, family, and non-work activities. The MIDAS scale helps assess both missed workdays and reduced productivity, offering a useful tool to quantify migraine-related disability. Shaik et al. in 2014 highlighted that the MIDAS survey is easy to administer and reliable, providing valuable insights for clinical practice (15). The results of our study, based on the MIDAS scale, revealed varying levels of disability among students, with 7.4% reporting no disability, 27.1% reporting mild disability, 55.5% reporting moderate disability, and 9.8% reporting severe disability.

The study by Leigh Blizzard and Bruce V. Taylor (2018) also supports the high prevalence of migraines found in our study. Their research examined the prevalence of migraines among neurologists and found that neurologists had a higher proportion of migraine sufferers. While this study focused on healthcare professionals, it demonstrates that the prevalence of

migraines is not limited to a specific demographic but is widespread across various professionsm (16).

Further, the study by Terwindt et al. in 2000 explored the impact of migraines on quality of life in the general population, revealing that migraineurs had significantly higher rates of asthma and chronic musculoskeletal pain compared to non-migraineurs. This finding aligns with our research, which emphasizes the broader impact of migraines on students' quality of life, including physical and mental health (17).

Lastly, a study by Adnan Khan et al. (2022) on the prevalence of migraines among medical students in Peshawar found a prevalence of 38.3% (18). This is quite similar to our findings, where the prevalence was 35.8%. Both studies used cross-sectional designs and reported high migraine prevalence among students, further supporting the findings of the current research.

Conclusion:

In conclusion, the findings reveal that migraines affect a substantial proportion of the university student population, with 35.8% reporting migraines and a slightly higher prevalence among females. While most participants exhibited minimal or no disability based on MIDAS scores, a noteworthy fraction experienced varying degrees of impairment, accompanied by significant impacts on quality of life and pain intensity as measured by the respective scales. The observed variations in migraine prevalence across different institutions further underscore the potential influence of environmental or demographic factors, suggesting avenues for future research.

Future Recommendations

Raising awareness about migraine among students and staff is essential. Targeted support such as physiotherapy, psychological counseling, and appropriate medical treatment can help reduce migraine-related disability. Strengthening wellness and mental health services within university health systems may further improve students' quality of life.

Disclosure /Conflict of interest:

Authors declare no conflict of interest.

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