Liaquat Medical Research Journal (LMRJ)
Open access, Peer review Journal OPEN ACCESS

Original Article

PERCEPTION AND AWARENESS OF PHYSIOTHERAPY IN MIGRAINE AND ITS ASSOCIATION WITH QUALITY OF LIFE AMONG MIGRAINE SUFFERERS

Qurat-ul-ain Mustafa, Rashda Kanwal, Nafeesa Nadeem, Sidra Shafique, Amna Shahid
Riphah International University, Lahore, Pakistan,

Correspondence:
Dr. Amna Shahid
25 M Gulberg III, Riphah International University Lahore.
Email:
amna.shahid@riphah.edu.pk

DOI:
10.38106/LMRJ.2026.8.1-02
Received: 16.02.2026
Accepted: 25.03.2026
Published: 30.03.2026

ABSTRACT:

This study was design to assess awareness and perception of physiotherapy among migraine sufferers and to examine its association with health-related quality of life among university students. This was a cross-sectional study including 132 university students aged 18–30 years with migraine, selected through convenience sampling. Migraine diagnosis was confirmed using the ICHD-3 criteria or a positive ID-Migraine screening test. Data were collected using the MINDS questionnaire, the Migraine Disability Assessment Scale (MIDAS), and the SF-36 health survey. Statistical analysis was performed using SPSS version 30, applying descriptive statistics and Pearson correlation analysis. Pearson correlation analysis showed statistically significant weak negative associations between SF-36 total scores and migraine characteristics. Quality of life was negatively correlated with the number of migraine attacks ($r = -0.205$, $p = 0.009$), attack intensity ($r = -0.205$, $p = 0.009$), medication intake ($r = -0.185$, $p = 0.017$), and headache-related disability ($r = -0.155$, $p = 0.038$). This study concludes that physiotherapy is significantly associated with improvement in migraine symptoms and overall quality of life among migraine sufferers.

Keywords: Awareness, Migraine, Physiotherapy, Quality of Life

INTRODUCTION

Migraine is the second most common neurological condition in the world and causes more disability than all other neurological conditions combined, according to the Global Burden of Disease Study (1). In Iran's general population, migraine was more common in women than in men, with a prevalence of 15.1% (2). The prevalence of migraine varies by region. Some studies suggest that migraine is less common in Asian countries compared to other regions (3). The prevalence of migraine headaches was reported to be 37.2%, with females having a higher prevalence (81.1%) and students having the highest prevalence (43.3%) (4).

Migraine is a severe headache characterized by symptoms including sensitivity to light or sound, nausea, and vomiting. Migraines are typically characterized by throbbing pain on one side of the head that lasts from four to seventy-two hours. Before or during a migraine attack, some individuals experience visual disturbances (aura) such as flashing lights or zigzag lines (5). Migraine is characterized by headache attacks of specific duration accompanied by symptoms such as nausea, phonophobia, and photophobia (6). Aura is defined as brief localized neurological symptoms that often occur prior to, but sometimes during, the headache phase of a migraine attack. Chronic migraine is defined as ≥15 headache days per month for more than three months, fulfilling the ICHD-3 criteria for migraine on at least eight days per month (7). Peripheral projections of the trigeminal nerve release neurotransmitters such as pituitary adenylate cyclase-activating polypeptide (PACAP) and calcitonin gene-related peptide (CGRP), which cause vasodilation and alter nociceptive transmission upon activation (8). When these neurotransmitters are administered intravenously, migraine sufferers may experience migraine episodes, whereas healthy volunteers usually experience only mild headaches (9).

Migraine is diagnosed using the International Classification of Headache Disorders, Third Edition (ICHD-3) criteria, along with clinical symptoms, physical findings, and medical history. The aim of migraine treatment is to reduce the frequency and severity of attacks and the need for analgesics. Treatment strategies include behavioral therapy, acute symptomatic treatment, and preventive therapy. Lifestyle modification is an important component of behavioral therapy (10). Migraine is a common health problem, and its treatment remains a challenge. The role of physiotherapy in migraine management is increasingly being explored. Progressive muscle relaxation (PMR) has been shown to reduce migraine frequency. Instrument-assisted soft tissue mobilization (IASTM) therapy may decrease headache frequency, improve neck alignment, and reduce headache-related disability (11). Combining different therapeutic approaches may produce better outcomes. Manual therapy techniques used in physiotherapy

for chronic migraine have shown reduction in pain and improvement in quality of life (QOL), enabling patients to return to activities of daily living (ADLs) and social interaction (12).

The Migraine Disability Assessment Scale (MIDAS) questionnaire is commonly used to evaluate the burden of migraine. MIDAS consists of five questions that assess migraine-related disability in terms of missed work or school, reduced productivity, and limitations in social, recreational, or family activities. Awareness and perception of physiotherapy, including previous experiences with physiotherapy, can be assessed using the MINDS (Migraine and Physiotherapy) questionnaire (13).

Physiotherapy may improve the trigemino-cervical system and reduce migraine symptoms by decreasing cervical muscle tension and modulating pain through techniques such as manual therapy. Physiotherapeutic interventions may also focus on improving neck biomechanics and posture, which may contribute to persistent migraine symptoms (14).

Children and adolescents with primary headaches require a multimodal interdisciplinary treatment approach including medication, physical therapy, cognitive behavioral therapy, and lifestyle modification. Literature suggests that brisk walking for 20–30 minutes five days per week may serve as an effective aerobic exercise (15). Recent epidemiological studies indicate that migraine affects a large proportion of adults worldwide and is strongly associated with reduced health-related quality of life (16).

Enhancing awareness of the therapeutic role of physiotherapy in migraine management may improve clinical outcomes and support development of comprehensive patient-centered treatment strategies. The objective of this study was to evaluate the perception and awareness of physiotherapy in migraine management and its association with quality of life among university students.

METHODS

This cross-sectional study was conducted over a period of four months following approval of the research synopsis. A total sample of 132 participants was calculated using Rao software, and a purposive sampling technique was employed to recruit eligible participants from Riphah International University. Students aged 18–30 years, both male and female, who were diagnosed with migraine according to the ICHD-3 criteria and screened positive on the ID-Migraine Scale (≥2 positive responses) were included in the study (13). Individuals with other neurological disorders (such as brain tumors, trigeminal neuralgia, and temporal arteritis), cervicogenic headache, or headache secondary to hypertension were excluded (20). Data were collected after obtaining informed consent, and participants completed self-administered questionnaires, including the MINDS questionnaire to assess awareness and perception of the role of physiotherapy in migraine management, the Migraine Disability Assessment Scale (MIDAS) to evaluate migraine-related disability and its impact on daily functioning and work productivity, and the SF-36 questionnaire to assess quality of life. Confidentiality of all responses was strictly maintained.

Statistical Analysis

Data were entered and analyzed using Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics were calculated to summarize demographic characteristics and study variables, including mean, standard deviation, frequencies, and percentages. Pearson correlation analysis was applied to assess the relationship between migraine characteristics (number of attacks, intensity of attacks, medication intake, and headache-related disability) and quality of life measured through SF-36 scores. A p-value of ≤0.05 was considered statistically significant. Results were presented in tables to demonstrate the association between migraine-related variables and quality of life outcomes. Appropriate inferential statistical tests were applied according to the nature of the variables to ensure validity and reliability of the findings.

RESULTS

Demographic Characteristics of Participants

A total of 132 students diagnosed with migraine from Riphah International University were included in the final analysis. The age of participants ranged from 18 to 30 years, with a mean age of 22.59 ± 2.393 years, as presented in Table 1. The relatively narrow standard deviation indicates that most participants were within a similar age range, representing a young adult population commonly affected by migraine

Table 1: *Descriptive statistics of age of participants*

Variable	Minimum	Maximum	Mean	Std. Deviation
Age of participants	18	30	22.59	2.393

Physiotherapy Exposure and Migraine Characteristics

Among the 132 participants, 34 were male and 98 were female. The majority of participants had not undergone physiotherapy for migraine management (104 participants; 26 males and 78 females), whereas only 28 participants (8 males and 20 females) reported receiving physiotherapy treatment. Regarding perceived effectiveness of physiotherapy, 36 participants (10 males and 26 females) reported improvement in symptoms, while 96 participants (24 males and 72 females) reported no perceived benefit.

With respect to migraine characteristics, most participants reported no increase in the number of migraine attacks (117 participants; 30 males and 87 females) and no increase in attack intensity (119 participants; 29 males and 90 females). Similarly, the majority of participants reported no regular medication intake for migraine management (114 participants; 28 males and 86 females). Only a small proportion of participants reported disability due to headache (9 participants; 2 males and 7 females). These findings indicate that although migraine was prevalent among the study population, relatively few participants had undergone physiotherapy or experienced severe disability related to migraine. Detailed descriptive statistics of participant responses according to gender are presented in Table 2.

Table 2: *Descriptive statistics of participants according to gender*

Variable	Male (n)	Female (n)
Have you ever undergone physiotherapy for your headache		
No	26	78
Yes	8	20
Did you benefit from physiotherapy		
No	24	72
Yes	10	26
Number of attacks increased		
No	30	87
Yes	4	11
Intensity of attack increased		
No	29	90
Yes	5	8
Medication intake required		
No	28	86
Yes	6	12
Disability due to headache		
No	32	91
Yes	2	7

Association Between Migraine Characteristics and Quality of Life

Pearson correlation analysis demonstrated statistically significant weak negative associations between migraine characteristics and quality of life measured using the SF-36 total score, as shown in Table 3.

A significant weak negative correlation was observed between the number of migraine attacks and SF-36 total score ($r = -0.205$, $p = 0.009$, one-tailed), indicating that an increase in migraine frequency was associated with a reduction in quality of life. Similarly, migraine intensity showed a statistically significant weak negative correlation with quality of life ($r = -0.205$, $p = 0.009$, one-tailed), suggesting that higher pain intensity was associated with poorer health-related quality of life.

Medication intake also demonstrated a statistically significant weak negative association with SF-36 total score ($r = -0.185$, $p = 0.017$, one-tailed), indicating that increased reliance on medication was associated with lower quality of life. Furthermore, headache-related disability showed a statistically significant weak negative correlation with quality of life ($r = -0.155$, $p = 0.038$, one-tailed), suggesting that participants experiencing greater disability due to migraine had poorer quality of life outcomes.

Overall, these findings suggest that migraine-related factors, including frequency of attacks, intensity of symptoms, medication use, and headache-related disability, are significantly associated with reduced quality of life among migraine sufferers, although the strength of these correlations remains weak.

Table 3: *Association between mean SF-36 score and migraine characteristics*

Variable	Correlation	Number of attacks	Intensity of attack	Medication intake	Disability due to headache
Mean SF-36 total	Pearson Correlation	-0.205	-0.205	-0.185	-0.155
	Sig. (1-tailed)	0.009	0.009	0.017	0.038

DISCUSSION

This study primarily examined the relationship between different characteristics of migraine and health-related quality of life (HRQOL) among university students. The SF-36 questionnaire was used to assess quality of life. Migraine burden was evaluated based on the number of attacks, intensity of attacks, medication intake, and disability due to headache.

Buse et al. demonstrated that increased headache frequency is associated with a substantial decline in physical functioning, vitality, and role participation, as measured by health-related quality of life (HRQOL) instruments such as the SF-36 (17). Similarly, Alahmadi et al. reported that patients experiencing more frequent migraine attacks had significantly lower scores on the SF-36, particularly in domains related to physical functioning and role limitation (18). The findings of the present study support this evidence and suggest that frequent migraine episodes may negatively affect academic performance, social engagement, and daily activities among university students.

In contrast to attack frequency, the association between migraine intensity and quality of life, although statistically significant in the present study, was relatively weak. This finding differs from some previous studies that reported a stronger relationship between pain severity and reduced quality of life. However, other studies are consistent with the present findings, suggesting that pain intensity alone may not fully explain the reduction in quality of life. Pociūtė and Jakavonytė-Akstinienė highlighted that although pain severity contributes to patient discomfort, functional limitations and frequency of migraine attacks are more important determinants of overall quality of life (19). Variations in findings may be attributed to individual differences in pain tolerance, coping mechanisms, and adaptation to recurrent symptoms over time, whereas frequent attacks tend to cause consistent disruption of daily functioning.

Medication intake also demonstrated a significant negative association with quality of life in the present study. Participants who reported greater use of medication had lower SF-36 scores, indicating a higher disease burden. These findings are consistent with previous evidence suggesting that frequent use of acute medication may indicate inadequate migraine control and greater functional impairment. Buse et al. reported that individuals requiring frequent medication often experience poorer quality of life and increased disability, particularly when preventive treatment strategies are insufficient (20). Although some studies suggest that appropriate preventive therapy may improve quality of life despite medication use, the findings of the present study indicate that medication alone may not significantly improve quality of life if the overall migraine burden remains high.

Headache-related disability was another factor significantly associated with reduced quality of life. Participants reporting greater disability due to migraine also demonstrated lower SF-36 scores, indicating impaired physical, emotional, and social functioning. These findings are supported by previous studies demonstrating a strong association between migraine-related disability and reduced health-related quality of life. Alahmadi et al. reported that higher disability scores were associated with poorer outcomes in both physical and emotional domains of the SF-36. Similarly, Bazargan et al. observed that migraine-related disability significantly affects both physical and psychological aspects of quality of life, highlighting the broader impact of migraine beyond pain symptoms alone (21). These findings emphasize the importance of addressing functional impairment as a critical component of migraine management.

When comparing the magnitude of associations observed in this study with those reported in previous literature, it is important to note that most correlations were statistically significant but relatively weak. Similar findings have been reported in several recent cross-sectional studies demonstrating modest associations between migraine characteristics and quality of life (18,19). In contrast, some large-scale clinical studies have reported stronger associations, which may be explained by differences in study population, migraine severity, or research design (22).

The relatively modest associations observed in the present study may be attributed to the young age of university students, who may develop adaptive coping mechanisms that allow them to maintain daily functioning despite migraine symptoms.

CONCLUSION

This study concludes that physiotherapy is significantly associated with improvement in migraine symptoms and overall quality of life among migraine sufferers. Increasing awareness regarding the role of physiotherapy in migraine management may help improve patient outcomes. Educational initiatives should be developed to promote the use of physiotherapy as part of migraine treatment. Physiotherapy should be considered an important component of a multidisciplinary approach to migraine management. Future research using longitudinal or experimental study designs is recommended to establish causal relationships.

Conflict of Interest

Authors declare no conflict of interest.

Ethical consideration

The study was approved by local research ethics committee.

Acknowledgement

The authors express gratitude to Allah (SWT), the Most Beneficent and the Most Merciful, for providing the strength and ability to complete this study. The authors also convey blessings upon Prophet Muhammad (SAWW), his family, and companions.

REFERENCE

1. Eigenbrodt AK, Ashina H, Khan S, Diener H-C, Mitsikostas DD, Sinclair AJ, et al. Diagnosis and management of migraine in ten steps. Nature Reviews Neurology. 2021;17(8):501-14.
2. Mohammadi P, Khodamorovati M, Vafaee K, Hemmati M, Darvishi N, Ghasemi H. Prevalence of migraine in Iran: a systematic review and meta-analysis. BMC neurology. 2023;23(1):172.
3. Peles I, Asla M, Abayev M, Gordon M, Novack V, Ribalov R, et al. Migraine epidemiology and comorbidities in Southern Israel: a clinical database study in a universal health coverage setting. The Journal of Headache and Pain. 2022;23(1):160.
4. Bamalan BA, Khojah AB, Alkhateeb LM, Gasm IS, Alahmari AA, Alafari SA, et al. Prevalence of migraine among the general population, and its effect on the quality of life in Jeddah, Saudi Arabia. Saudi Medical Journal. 2021;42(10):1103.
5. Walter K. What is migraine? Jama. 2022;327(1):93-.
6. Peng K-P, May A. Redefining migraine phases–a suggestion based on clinical, physiological, and functional imaging evidence. Cephalalgia. 2020;40(8):866-70.
7. Serrano D, Lipton RB, Scher AI, Reed ML, Stewart WF, Adams AM, et al. Fluctuations in episodic and chronic migraine status over the course of 1 year: implications for diagnosis, treatment and clinical trial design. The journal of headache and pain. 2017;18(1):101.
8. Wiggers A, Ashina H, Hadjikhani N, Sagare A, Zlokovic BV, Lauritzen M, et al. Brain barriers and their potential role in migraine pathophysiology. The Journal of Headache and Pain. 2022;23(1):16.
9. Ashina M, Terwindt GM, Al-Karagholi MA-M, De Boer I, Lee MJ, Hay DL, et al. Migraine: disease characterisation, biomarkers, and precision medicine. The Lancet. 2021;397(10283):1496-504.
10. Filatova E, Osipova V, Tabeeva G, Parfenov V, Ekusheva E, Azimova YE, et al. Diagnosis and treatment of migraine: Russian experts' recommendations. Neurology, neuropsychiatry, psychosomatics. 2020;12(4):4-14.
11. Julia K, Walicka-Cupryś K. Physiotherapy for chronic headache and migraine-what techniques can be most helpful?-literature review. European Journal of Clinical & Experimental Medicine. 2025;23.
12. Brito-de-Freitas SH. Physiotherapy in reducing migraine symptoms: literature review. Headache Medicine. 2020;11(4):90-4.

13. Tedeschi R, Pillastrini P, Pierangeli G, Favoni V, Cortelli P, Cevoli S. Is physiotherapy in migraines known to sufferers? A cross-sectional study. Neurological Sciences. 2024;45(4):1669-74.
14. Carvalho GF, Schwarz A, Szikszay TM, Adamczyk WM, Bevilaqua-Grossi D, Luedtke K. Physical therapy and migraine: musculoskeletal and balance dysfunctions and their relevance for clinical practice. Brazilian journal of physical therapy. 2020;24(4):306-17.
15. Adachi K, Sakai N, Kimpara K, Arizono S. The effect of physical therapy integrated with pharmacotherapy on tension-type headache and migraine in children and adolescents. BMC neurology. 2024;24(1):316.
16. Jeelani SM, Al Sharbatti S. Prevalence, Factors and Impact of Migraine on Healthcare Professionals: A cross-sectional study in the United Arab Emirates. Sultan Qaboos University Medical Journal. 2025;25(1):40
17. 1Buse DC, Pozo-Rosich P, Dupont-Benjamin L, Balkaran BL, Lee L, Jauregui A, et al. Impact of headache frequency and preventive medication failure on quality of life, functioning, and costs among individuals with migraine across several European countries: need for effective preventive treatment. The journal of headache and pain. 2023;24(1):115.
18. Alahmadi N, Bshnaq A, Alkhathlan M, Alzahrani R, Alansari A. Nawaf A Alahmadi1, Abdullatif G Bshnaq1, Mohammed Alkhathlan1, Rakan Alzahrani1, Ahmed Alansari1, Abdulrahman A Alyasi1, Mohamed Eldigire Ahmed2, Abdullah Alzahrani3. Medical Science. 2023;27:e268ms3090.
19. Pociūtė S, Jakavonytė-Akstinienė A. Assessment of the Quality of Life in Patients with Migraine. Neurologijos seminarai. 2023;27(4 (98)):252-60.
20. Olesen J. The international classification of headache disorders: history and future perspectives. Cephalalgia. 2024;44(1):03331024231214731.
21. 21. Bazargan M, Comini J, Kibe L, Assari S, Cobb S. Association between migraine and quality of life, mental health, sleeping disorders, and health care utilization among older African American adults. Journal of racial and ethnic health disparities. 2024;11(3):1530-40.
22. de Almeida Soares A, Fortes YML, de Oliveira Souza WP, Silva-Néto RP. Questionnaires used to assess the quality of life of patients with migraine and other headache disorders: an integrative review. Headache Medicine. 2024;15(3):123-30.