http://www.jhpr.ir
Hosp Pract Res. 2026 November;11(Special Issue 1):10-11
doi 10.30491/hpr.2026.256775
HPR
Hospital Practices and Research
Policy Brief

Comprehensive Migraine Management: Simultaneous Evaluation of Anxiety, Depression, and Sleep Quality to Design Integrated Treatment Protocols

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Received October 6, 2026; **Accepted** November 5, 2026; **Online Published** November 10, 2026

Abstract

Migraine is a complex neurological disorder often linked with comorbid conditions such as anxiety, depression, and sleep disturbances. These associated issues not only coexist with migraine but also exacerbate the overall symptom burden. Increased emotional distress or poor sleep quality can diminish patients' responses to standard treatments, complicating management. This relationship emphasizes the need to view migraine as a multifaceted health issue requiring comprehensive clinical attention. The current study aimed to explore mood disturbances and sleep quality in migraine patients within a clinical setting. By systematically observing these individuals, the research sought to identify how emotional difficulties like anxiety and depression correlate with sleep-related issues and how demographic and psychosocial factors influence these clusters. Findings indicated that poor sleep and emotional distress are prevalent in the migraine population, often overlapping and reinforcing each other, which intensifies migraine severity and complicates treatment. These patterns underscore the importance of integrated screening in routine migraine care. Early identification of mood and sleep issues allows clinicians to intervene before these factors worsen treatment outcomes. The study advocates for migraine management that extends beyond pharmacological strategies to include holistic health practices. Clinical policies should incorporate mental health assessments, sleep hygiene counseling, and multidisciplinary approaches involving neurologists, psychologists, and sleep specialists, significantly improving patient outcomes. In conclusion, the results advocate for holistic care models in migraine treatment. By acknowledging the interconnectedness of migraine, emotional health, and sleep quality, healthcare providers can implement strategies that address the full spectrum of patient needs, potentially reducing symptom burden and enhancing treatment responsiveness.

Keywords: Migraine, Anxiety, Depression, Sleep Quality, Mental Health, Policy Recommendations, Public Health

1. Background

Migraine is recognized as a primary neurological disorder that manifests through a constellation of characteristic symptoms, most notably unilateral pulsating pain, heightened sensory hypersensitivity, and significant functional impairment in daily life.[1] Unlike ordinary headaches, migraine represents a complex neurovascular condition that interferes with multiple aspects of physical and psychological functioning. It is considered one of the leading causes of disability worldwide, ranking among the most burdensome neurological disorders. Importantly, migraine disproportionately affects individuals under the age of 50, a demographic group that is typically in its most productive years of work and family life, thereby amplifying the social and economic consequences of the disease.[1]

Epidemiological data indicate that the global prevalence of migraine is approximately 14.4%, making it a highly common condition across diverse populations. Gender differences are consistently observed, with women experiencing migraine at substantially higher rates compared to men, a disparity that may be linked to hormonal influences, psychosocial stressors, and genetic predispositions.[1] Beyond the physical pain, comorbid psychiatric conditions such as anxiety and depression are frequently reported among migraine patients. These mental health challenges contribute to an elevated disease burden, further diminishing quality of life and complicating the clinical management of migraine.[2]

Sleep disturbances, including poor sleep quality, insomnia, and irregular sleep patterns, are also highly prevalent in this population. Such disturbances not only exacerbate the frequency of migraine attacks but also intensify the overall severity of symptoms, creating a vicious cycle in which poor sleep and migraine reinforce one another.[3] Despite the growing body of international evidence supporting these associations, integrated evaluations that simultaneously address mood disturbance and sleep

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quality remain limited in certain regions. Specifically, within the Iranian context, comprehensive studies examining these interrelated factors in migraine patients are scarce, leaving a gap in localized clinical knowledge.[2]

The present study therefore aims to provide a systematic assessment of anxiety, depression, and sleep quality among patients diagnosed with migraine. In addition, it seeks to explore how demographic variables—such as age, gender, marital status, and educational background—may influence these outcomes.[1] By investigating these dimensions, the study intends to generate evidence that can inform more holistic approaches to migraine care, emphasizing the importance of integrating mental health evaluation and sleep management into routine clinical practice.

2. Methods

This study was conducted among adult patients diagnosed with migraine who attended an outpatient neurology clinic. Standardized questionnaires were used to assess mood symptoms and sleep quality. Demographic characteristics were also recorded to explore broader psychosocial patterns. The aim of the methodological approach was to capture the overall burden of emotional distress and sleep disruption in real-world migraine patients without focusing on technical measurement details.

3. Results

Most patients experienced noticeable levels of anxiety and depression, accompanied by generally poor sleep quality. Women and certain demographic groups showed higher levels of emotional distress and disrupted sleep. Poor sleep consistently aligned with more severe mood symptoms.

These patterns collectively indicate that emotional and sleep disturbances are not secondary issues but core components of the migraine experience. As such, routine migraine care must integrate mental health and sleep assessments. Demographic differences observed in the sample also suggest the importance of tailoring interventions based on age, gender, education, and marital status.

4. Discussion and Conclusion

The strong coexistence of migraine with anxiety, depression, and poor sleep observed in this study aligns with existing evidence showing that these conditions commonly overlap and reinforce each other.[3] Poor sleep quality and emotional distress have been shown to worsen headache frequency, increase disability, and reduce the effectiveness of standard migraine treatments.[3] These relationships emphasize the necessity of integrating mental health and sleep assessment into routine clinical evaluation for migraine patients.[4] Implementing brief screening tools during neurology visits may allow earlier identification of high-risk individuals and promote more targeted management strategies.[4] Educational interventions that address sleep hygiene and stress reduction can provide meaningful improvements in patient quality of life.[5] Multidisciplinary care, incorporating neurology, psychology, and behavioral sleep medicine, has been recommended as a more effective model for managing the complex nature of migraine.[5] Given the demographic differences observed in vulnerability to distress and poor sleep, personalized care approaches may further enhance treatment outcomes.[2]

From a policy perspective, establishing standardized screening protocols and embedding mental health professionals within neurology clinics can improve early detection and comprehensive management of migraine-related complications.[4] Developing accessible, patient-centered educational programs may also support long-term self-management and reduce the societal burden of migraine.[5]

Acknowledgments

Researchers thank to guidance and advice from the "Clinical Research Development Unit of Baqiyatallah Hospital".

Author Contributions

Authors contributed equally to this work.

Conflict of Interest Disclosures

All authors declared that they have no conflict of interest.

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