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Association between migraine/headache and mental disorders in children, adolescents, and adults: a systematic review

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Introduction
Migraine and other recurrent headache disorders are major causes of disability and reduced quality of life across all age groups. In addition to neurological symptoms, evidence suggests a strong association between headache disorders and mental health conditions, including anxiety, depression, bipolar disorder, and attention-deficit/hyperactivity disorder (ADHD), highlighting their clinical and public health relevance.

Objective
To analyze the association between recurrent migraine/headache and mental disorders, as well as the potential neurobiological mechanisms involved.

Methods
This systematic review was conducted according to PRISMA guidelines. The research question was structured using the PICO framework: individuals with recurrent headache or migraine (P), associated mental disorders (I), comparison with individuals without headache or psychiatric disorders (C), and the association between migraine/headache and mental disorders, including anxiety, depression, behavioral disorders, and ADHD (O). Searches were performed in PubMed, SciELO, and MEDLINE using the strategy ("headache" [title] OR "migraine" [title]) AND "mental disorders". Studies published within the last five years in English, Portuguese, and Spanish were included. Eligible studies comprised observational, population-based, genetic, neuroimaging, and clinical trial designs. Duplicate records, editorials, narrative reviews, letters, and studies unrelated to the research question were excluded.

Results
Thirty-three studies demonstrated a significant association between recurrent migraine/headache and mental disorders. Anxiety and depression were more prevalent among individuals with migraine, particularly migraine with aura, which was also associated with behavioral disorders. Among adolescents, recurrent headache was linked to anxiety, depressive symptoms, and attention difficulties, while children and adolescents with ADHD showed higher rates of migraine. Population-based studies identified increased risks of mood, anxiety, eating, and disruptive behavioral disorders among individuals with headache disorders. Genetic studies suggested a higher risk of bipolar disorder, depression, ADHD, and schizophrenia in the offspring of parents with migraine. Functional neuroimaging studies revealed altered brain connectivity patterns involving emotional regulation, cognitive processing, and pain-related networks, supporting shared neurobiological mechanisms. Furthermore, migraine comorbid with depression was associated with greater disability, poorer quality of life, and increased healthcare utilization. Clinical trials involving fremanezumab reported simultaneous improvements in migraine attacks and depressive symptoms.

Conclusion
This review demonstrated a consistent association between recurrent migraine/headache and mental disorders across all age groups. The findings support shared neurobiological and genetic mechanisms, highlighting the need for multidisciplinary care, early screening, and longitudinal studies.

Keywords:
Migraine
Mental disorders
Attention-Deficit/
Hyperactivity Disorder (ADHD)

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