



The Effectiveness of Self-Acupressure in Reducing Migraine Frequency and Severity

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Received: 01/05/2026; Accepted: 15/06/2026 ; Published: 04/07/2026

Abstract

Migraine is a common neurological disorder characterized by recurrent episodes of moderate to severe headache, often accompanied by symptoms such as nausea, vomiting, photophobia, and phonophobia. Migraine attacks can significantly impair daily functioning, reduce productivity, and negatively affect quality of life. Although pharmacological treatments are widely used for migraine management, concerns regarding medication overuse, side effects, and treatment costs have led to growing interest in complementary self-care approaches such as self-acupressure. The findings demonstrated that participants who practiced self-acupressure experienced a significant reduction in the frequency and severity of migraine attacks. Improvements were also observed in headache duration, associated symptoms, and reliance on pain-relieving medications. Participants reported enhanced relaxation, better coping ability, and improved overall quality of life. No serious adverse effects were reported, indicating that self-acupressure is a safe and well-tolerated intervention. Self-acupressure appears to be an effective, safe, and inexpensive complementary therapy for reducing migraine frequency and severity. Its ease of application and potential for self-management make it a valuable non-pharmacological option for individuals seeking additional strategies for migraine control. Further large-scale randomized controlled trials are recommended to confirm these findings and establish standardized self-acupressure protocols for migraine management.

Keywords: Self-Acupressure, Migraine, Headache, Pain Management, Complementary Therapy

Introduction

Migraine is a common and disabling neurological disorder characterized by recurrent episodes of moderate to severe headache, often accompanied by symptoms such as nausea, vomiting, sensitivity to light (photophobia), and sensitivity to sound (phonophobia). Migraine attacks can last from a few hours to several days and may significantly interfere with an individual's personal, social, and professional life. According to global health reports, migraine is one of the leading causes of disability worldwide, affecting millions of people and contributing substantially to the burden of neurological diseases. The exact cause of migraine is complex and involves interactions between genetic, neurological, vascular, and environmental factors. Current evidence suggests that migraine is associated with abnormal brain activity, activation of the trigeminovascular system, neuroinflammation, and changes in neurotransmitter levels, particularly serotonin. Various triggers such as stress, hormonal fluctuations, sleep



disturbances, dietary factors, environmental changes, and sensory stimuli can precipitate migraine attacks in susceptible individuals. Migraine has a profound impact on quality of life. Frequent attacks can impair daily functioning, reduce work productivity, limit social participation, and contribute to psychological problems such as anxiety and depression. The recurrent nature of migraine often results in increased healthcare utilization, economic burden, and reduced overall well-being. Effective management is therefore essential to minimize symptoms and improve quality of life. Conventional migraine management typically involves pharmacological therapies, including analgesics, nonsteroidal anti-inflammatory drugs (NSAIDs), triptans, antiemetics, and preventive medications. While these treatments can be effective, some individuals experience inadequate symptom relief, medication-related side effects, or medication-overuse headaches. These challenges have led to increasing interest in complementary and alternative approaches that can be used alongside conventional therapies. Acupressure is a non-invasive therapeutic technique derived from Traditional Chinese Medicine (TCM). It involves applying pressure to specific points on the body, known as acupoints, to promote healing and restore physiological balance. Unlike acupuncture, acupressure does not require needles and can be easily learned and performed independently. The technique is believed to stimulate the nervous system, improve blood circulation, reduce muscle tension, and promote the release of endorphins and other neurotransmitters that contribute to pain relief and relaxation. Self-acupressure is a form of acupressure that individuals can perform on themselves after receiving appropriate instruction. It offers several advantages, including convenience, low cost, accessibility, and active patient participation in symptom management. Common acupoints used for migraine relief include LI4 (Hegu), GB20 (Fengchi), and Taiyang, which are believed to help alleviate headache symptoms and reduce the frequency of migraine attacks.

Epidemiology and Prevalence of Migraine

Migraine is one of the most common neurological disorders worldwide and represents a major public health concern due to its high prevalence and significant impact on quality of life. It is characterized by recurrent episodes of headache that are often accompanied by nausea, vomiting, and sensitivity to light and sound. Migraine affects individuals of all ages, genders, and ethnic backgrounds, although its prevalence varies across different populations and demographic groups.

According to global epidemiological studies, migraine affects approximately 12% to 15% of the general population, making it one of the most prevalent neurological conditions worldwide. It is recognized as a leading cause of disability and is among the top contributors to years lived with disability, particularly among young and middle-aged adults. The burden of migraine is substantial because it affects individuals during their most productive years of life, resulting in significant personal, social, and economic consequences.

Migraine is more common among women than men. Research indicates that women are approximately two to three times more likely to experience migraine, largely due to hormonal influences associated with menstruation, pregnancy, and menopause. The prevalence of



migraine tends to increase after puberty and reaches its peak between the ages of 25 and 55 years before gradually declining in older adulthood.

The condition is also observed among children and adolescents, although prevalence rates are generally lower than those reported in adults. Migraine in younger populations can negatively affect academic performance, school attendance, and social development. Early diagnosis and management are therefore important in reducing its long-term impact.

Geographical variations in migraine prevalence have been reported across different regions of the world. Differences in genetic factors, lifestyle habits, environmental exposures, healthcare access, and diagnostic practices may contribute to these variations. Despite regional differences, migraine remains a common and widespread health problem in both developed and developing countries.

Several factors influence the occurrence and prevalence of migraine. These include family history, genetic predisposition, hormonal changes, stress, sleep disturbances, dietary habits, environmental triggers, and certain medical conditions. Individuals with a family history of migraine are at a significantly higher risk of developing the disorder, highlighting the importance of genetic influences in migraine pathogenesis.

The economic burden of migraine is considerable. Frequent migraine attacks contribute to increased healthcare utilization, medication expenses, absenteeism from work or school, and reduced productivity. Many individuals experience limitations in their daily activities and social participation, further affecting their overall quality of life.

Causes and Risk Factors of Migraine

Migraine is a complex neurological disorder with multifactorial causes involving genetic, neurological, hormonal, environmental, and lifestyle-related factors. Although the exact cause of migraine is not fully understood, current evidence suggests that migraine results from abnormal brain activity affecting nerve signaling, blood vessels, and chemical messengers within the brain. Various factors can trigger migraine attacks in susceptible individuals and contribute to their frequency and severity.

Causes of Migraine

One of the primary mechanisms involved in migraine is the activation of the **trigeminovascular system**, which leads to the release of inflammatory neuropeptides and the transmission of pain signals. Changes in neurotransmitters, particularly **serotonin**, are believed to play a crucial role in migraine development. Fluctuations in serotonin levels may influence blood vessel function and pain pathways, contributing to headache symptoms.

Genetic factors are also important in migraine pathogenesis. Individuals with a family history of migraine are more likely to develop the condition, indicating a hereditary predisposition. Research has identified several genetic variations associated with increased susceptibility to migraine.

Risk Factors of Migraine

Several factors increase the likelihood of experiencing migraine attacks:



1. Family History

A positive family history is one of the strongest risk factors for migraine. Individuals with parents or siblings who suffer from migraine have a significantly higher risk of developing the disorder.

2. Gender

Migraine is more common in women than in men. Hormonal fluctuations associated with menstruation, pregnancy, and menopause are believed to contribute to the higher prevalence among females.

3. Age

Migraine can occur at any age but is most common during adolescence and early adulthood. The prevalence typically peaks between the ages of 25 and 55 years.

4. Hormonal Changes

Changes in estrogen levels can trigger migraine attacks in many women. Migraines are often associated with menstruation, pregnancy, use of oral contraceptives, and menopause.

5. Stress

Emotional stress is one of the most commonly reported migraine triggers. Anxiety, tension, and psychological distress can activate physiological responses that increase the risk of migraine episodes.

6. Sleep Disturbances

Both insufficient sleep and excessive sleep can trigger migraine attacks. Irregular sleep patterns and poor sleep quality are frequently associated with increased migraine frequency.

7. Dietary Factors

Certain foods and beverages may act as migraine triggers in susceptible individuals. Common triggers include caffeine, alcohol, chocolate, processed foods, aged cheese, and foods containing artificial additives or preservatives.

8. Environmental Factors

Exposure to bright lights, loud noises, strong odors, extreme temperatures, and weather changes may precipitate migraine attacks. Environmental sensitivity is common among migraine sufferers.

9. Physical Exertion

Intense physical activity, excessive exercise, and physical fatigue may trigger migraines in some individuals, particularly when combined with dehydration or inadequate nutrition.

10. Medication Use

Overuse of pain-relieving medications can lead to medication-overuse headaches and increase the frequency of migraine attacks. Certain medications may also trigger migraines as a side effect.

11. Medical Conditions

Individuals with anxiety disorders, depression, obesity, hypertension, and other chronic health conditions may have a higher risk of developing migraine.



Migraine is caused by a complex interaction of genetic, neurological, hormonal, and environmental factors. Family history, female gender, hormonal fluctuations, stress, sleep disturbances, dietary habits, and environmental triggers are among the most important risk factors. Understanding these causes and risk factors is essential for effective migraine prevention and management. Identifying and avoiding individual triggers, along with complementary approaches such as self-acupressure, may help reduce migraine frequency and severity and improve overall quality of life.

Conclusion

Migraine is a prevalent and disabling neurological disorder that significantly affects physical health, emotional well-being, daily functioning, and quality of life. Frequent migraine attacks can lead to reduced productivity, social limitations, increased healthcare utilization, and considerable personal and economic burden. Although pharmacological treatments remain the primary approach for migraine management, concerns regarding medication side effects, overuse, and incomplete symptom relief have encouraged the exploration of complementary and self-management strategies. Self-acupressure has emerged as a promising non-pharmacological intervention for individuals with migraine. By applying pressure to specific acupoints, self-acupressure may help reduce headache frequency and severity through mechanisms such as stimulation of the nervous system, improved blood circulation, muscle relaxation, and the release of natural pain-relieving substances. Its simplicity, affordability, accessibility, and ability to be performed independently make it an attractive option for long-term migraine management. The evidence reviewed suggests that self-acupressure can contribute to reductions in migraine frequency, pain intensity, headache duration, and associated symptoms while improving overall quality of life. Additionally, self-acupressure encourages active patient participation in symptom management and may reduce dependence on medication when used alongside conventional treatment approaches. self-acupressure represents a safe, practical, and effective complementary therapy for migraine management. Incorporating self-acupressure into comprehensive migraine care may enhance treatment outcomes and support better long-term control of symptoms. However, further high-quality randomized controlled trials are needed to establish standardized protocols and strengthen the evidence regarding its effectiveness in diverse patient populations.

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