

Natural Modality in the Treatment of Primary Headaches

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Abstract

Headaches are both a prevalent and disabling condition. Recent studies suggest a connection between the trigeminovascular system and the pain associated with headaches. Specifically, cervical muscles may be the root cause of headaches. Manual therapies prove effective in treating cervical muscle tension and a new orthopedic traction headrest (Headache Hammock[®]) provides such manual therapy without the aid of a physician or therapist. In a case study determining its effectiveness, 11 chronic headache patients used the device for six weeks. Patients evaluated their headaches both pre- and post-use. The average reduction in their Henry Ford Hospital Headache Disability Inventory was 32.9, a clinically significant finding. The data suggest that the Headache Hammock[®] is a viable treatment option that can improve the health and wellness of individuals who suffer with headaches and further warrants a larger scientific research study.

Introduction

Among the most prevalent disorders affecting mankind are the primary headaches, which include migraine and tension headaches (1). Primary headaches afflict an estimated 16% of the world population and approximately 45 million Americans suffer with chronic headaches (2)(3). Additionally, an estimated 35 million Americans suffer with neck pain at any given time (4). Of the primary headaches, migraine headaches affect more than 10% of the worldwide population (5). In a given year, one in twelve men and one in six women will experience migraine headache with a lifetime risk of 18% and 43%, respectively (6). With such a worldwide prevalence, headaches are classified as one of the top-20 causes of disability and are recognized by the World Health Organization (WHO) as a serious public health issue (7).

Currently there are several barriers to treatment for headache disorders: non-availability of appropriate medications, difficulty in diagnosis and recognition of the disorder, and poor medical funding for effective treatment options despite population prevalence of headache disorders (1). The implication of these barriers is that approximately 50% of people with headaches are thought to be self-treating with no contact with health care professionals. Even if health care access improves, this estimate is not predicted to change. It is of particular importance that patients receive proper education on how to treat headache disorders safely and effectively, particularly in respect to medication usage (1). One new tool in the treatment of headache disorders is the Orthopedic Traction Headrest (Headache Hammock[®]),

which seeks to improve the health and wellness of individuals that suffer from headaches and neck pain.

Cervical Muscle Tension and Headache

Chronic constant tension of the suboccipital muscles is present in many patients who experience headache and upper cervical neck pain (8)(9)(10). Neck pain and cervical muscle tenderness are present in 100% of patients with migraine headaches (11). This tenderness may not be secondary to the headache but rather the cause of the headache and may actually be the origin of the pain (12). Recent studies link headaches with the trigeminovascular system, which consists of neurons in the trigeminal nerve that innervate cerebral blood vessels (13). The dilation of these blood vessels in response to noxious stimuli and the subsequent stimulation of the surrounding sensory fibers of the trigeminal nerve activate the trigeminal nucleus caudalis (TNC), which projects to the thalamus and the cortical structures, resulting in the perception of pain (14). It is the activation of the TNC that subsequently leads to the nociception, pain development, and secondary symptoms associated with headaches (2). The pain receptors from tight and sore neck muscles connected to the upper cervical nerves may contribute to the creation of this neuroinflammatory response in the brain along the trigeminal nerve pathway (15). If the noxious stimulation radiating from the upper cervical nerves could be minimized, it is reasonable to conclude that the headache trigger could be dampened.

Treatment to Reduce Muscular Tension

Standard treatment options used to reduce upper cervical muscular tension include medication, heat or cold therapy, electric muscle stimulation, and manual therapies such as massage therapy, chiropractic care, and physical therapy. The occipital lift is a widely used manual therapy developed 15 to 20 years ago as a gentle but effective treatment for headaches and neck pain. It usually consist of the physician or therapist contacting the patient just below the back of the skull with their fingertips and gently lifting the entire skull straight up for 3 to 5 minutes while applying pressure with their fingertips to the suboccipital musculature. This is done to reduce upper cervical muscular tension.

The Headache Hammock[®] mimics the occipital lift maneuver without the need of a physician or therapist. The device lifts the occiput and supports the head, mobilizing it away from the upper cervical spine, allowing the entire head to float free in space. The Headache Hammock[®] applies pressure to the upper cervical spinal musculature, releasing tight muscles and myofascial trigger points and resetting muscle tone. The muscle tension is released by relieving the muscular dysfunction of the upper cervical spine.

Materials and Methods

A random sample of 11 chronic headache patients was given the Headache Hammock[®] for prophylactic use over a 6-week period. Patients were instructed to complete the Henry Ford Hospital Headache Disability Inventory (HDI) both before the start of and at the conclusion of treatment. Patients were instructed to use the headrest once a day for the duration of 10 to 15 minutes for six weeks.

The HDI is a survey of 25 questions that is used to evaluate a patient with headache and can be used to determine treatment strategy effectiveness over time. The questions evaluate both an emotional and functional subscale of headache disability. The maximum value for the emotional subscale is 52. The maximum value for the functional subscale is 48. The maximum possible score is 100. The higher the calculated score, the higher the disability caused by the headache. A decrease in the total HDI of ≥ 29 as the result of a management strategy is considered a significant improvement (16). The HDI is a reliable measure of relief from pain associated with headaches.

Results

The average emotional score of the HDI pre-treatment (n=11) was 19.8 out of a maximum possible 52. The average pre-treatment functional score was 28.7 out of a possible 48. The average total score pre-treatment was 48.5. Following six weeks of treatment, the average emotional score dropped to 5.6 and the average functional score dropped to 10. The total average post-treatment score was 15.6. The average emotional score dropped 14.2 points and the average functional score dropped 18.7 points. The total average dropped by 32.9 points. These findings are considered clinically significant.

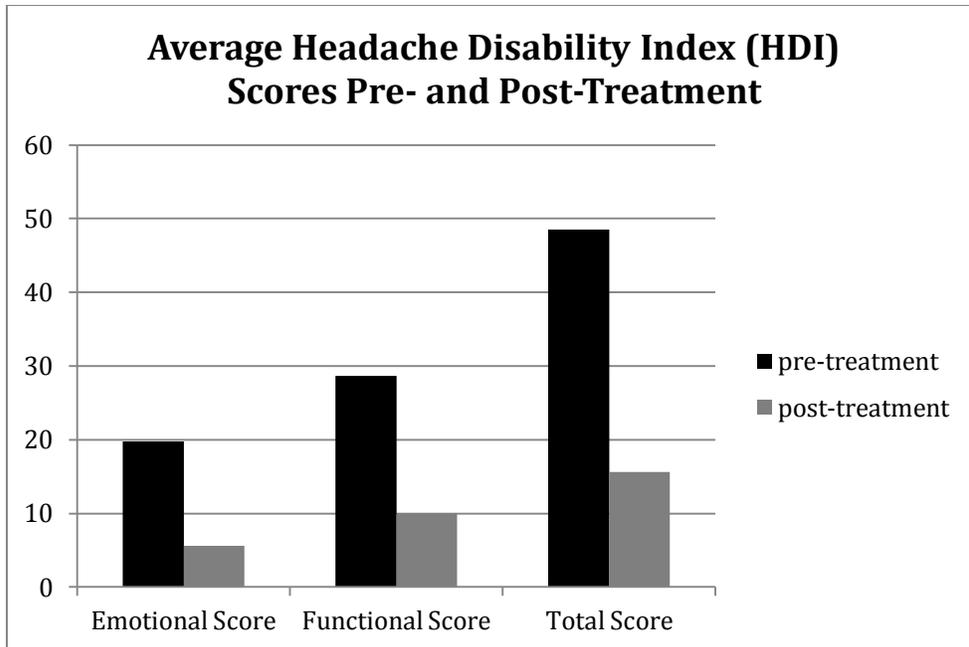


Figure 1: Average Headache Disability Index (HDI) scores both pre- and post-treatment using the Headache Hammock for 10-15 minutes daily for 6 weeks. The total average score decreased by 32.9 points, a clinically significant finding.

Conclusion

Current research suggests that headaches may originate with neck pain and cervical muscle tenderness, initiating a neuroinflammatory cascade resulting in headache pain. Manual therapies, such as the occipital lift, have proven to be effective in alleviating this pain by relieving the muscular dysfunction of the upper cervical spine. The orthopedic traction headrest, or Headache Hammock[®], performs this occipital lift maneuver without the need of a physician or therapist and has been shown to significantly decrease both the emotional and functional aspects of headaches. These results further warrant a larger scientific research study.

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