

Evaluating Complementary and Alternative Treatment in Patients with Chronic Headaches

Hayley Anderson, Rena Divine, Taylor Hayes, Lauren Johnson, Katie Rigdon, Nichole Rodes

Auburn University School of Nursing

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

### **PICO Question and Significance**

A PICO question plays a vital role for researchers in organizing thoughts. Our PICO question is as follows: Among adults with chronic headaches, does non-pharmacological therapy and complementary and alternative treatments better improve headache management compared to conventional drug therapy? A chronic headache is defined as the “persistent experience of head pain for at least 4 hours’ duration for more than 15 days per month” (Saper, Lake, Cantrell, Winner, & White, 2002). These headaches can clearly intrude on a person’s daily living illustrating the importance of positive treatment therapies.

PICO involves four parts that include: population, intervention, comparison, and outcome. The populations of interest for these studies were adult patients with chronic headaches that used non-pharmacological therapies, complementary and alternative drug therapy versus those who use medications to treat their chronic headaches. For this paper chronic headaches include migraines, tension headaches, and transformed migraines. As nurses it is important to be advocates for our patients. In this case, providing options on alternative therapies for chronic headache management. Several articles in our grid did agree that non-pharmacological therapies decreased chronic headache events, though one article did mention that complementary and alternative medicine therapies have, often, an insufficient efficacy and are accompanied with a numerous side effects (D’Andrea, Cevoli, Cologno, 2014). One article included the combination of pharmacological and non-pharmacological therapies is beneficial to treat chronic headaches.

The non-pharmacological, complementary and alternative therapies included were herbal, acupuncture, sham acupuncture, relaxation training, physical training, infrared laser therapy, and transcutaneous electrical nerve stimulation. For conventional treatments various drug therapies were examined. Each of the articles included compared such therapies to each other. As nurses

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

we can encourage the chronic headache patient to research these various treatments along with nurse education to help them come to an educated decision on what treatment is best for them. It may take trial and error to figure out which treatment is best suited for each individual patient because no one patient is the same.

Finally, the expected outcome of these studies was that patients would experience less chronic headaches using complementary and alternative drug therapies. Acupuncture proved to have the most supporting evidence in the treatment of chronic headaches. The lack of funding to perform these studies will continue to decrease the progress in this area as well, but hopefully the future will bring more concentrated efforts. There is a growing body of evidence supporting the efficacy of various complementary and alternative medicine approaches in the management of headache disorders. Many of these complementary modes are inexpensive, less harmful, and can be more effective than pharmacological therapies.

### **Review of Evidence**

We searched through the following databases in order to gather research about management of chronic headaches through complementary and alternative medicine: MEDLINE, CINAHL, PubMed, Cochrane Library, and Academic Premiere. At times it became difficult to find articles related to our topic. In order to find valuable and applicable articles the keywords needed to be altered at times. We used keywords such as “chronic headaches”, “migraine”, “complementary and alternative therapies”, “acupuncture”, “adult”, etc. To narrow down the search we looked for articles after the year 2000, academic journals, and peer-reviewed. Lastly we used Google scholar to help find a systematic review. Through Google Scholar we were then able to find a review that connected back through the Auburn University Library database. Under all of these considerations we were able to successfully find our articles.

EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

Evidence Analysis Grid

<b>Evidence Grid: Chronic Headaches</b>				
<b>Authors of Article, YR</b>  <b>Level of Evidence of article (I – VI)</b>  <b>(person who completed this row on grid)</b>	<b>Purpose of study/review and research questions</b>	<b>Research elements:</b> <b>A) Design B)Population</b> <b>C) Sampling method/size</b> <b>D) description of methods/ interventions (if any)</b> <b>E) instruments used</b> <b>F) outcomes measured (not the findings – just what variables were measured as outcomes)</b>	<b>Major findings relevant to project</b>	<b>Give strengths and weaknesses of this article for your project related to validity, bias and applicability</b>
Saper, J., Lake, A., Cantrell, D., Winner, P., & White, J., (2002).  <b>Level of Evidence: I</b>  (Katie Rigdon)	<b>Purpose:</b> The objective of this review is to assess the efficacy of tizanidine hydrochloride versus placebo as adjunctive prophylactic therapy for chronic daily headache (chronic migraine, migrainous headache, or tension type headache).	<b>Design:</b> Systematic Review <b>Population:</b> This research had a population of men and women in between the ages of 18-65 that had chronic daily headaches (chronic migraine, migrainous headache, or tension type headache). <b>Sampling Method:</b> In this research a simple random sampling was performed using tizanidine and a placebo drug. <b>Description of Method:</b> This research used a double blind, placebo controlled research design with a 4 week single-blind period of placebo treatment followed by 12 weeks of scheduled treatment	<ul style="list-style-type: none"> <li>• Tizanidine emerged as more effective than placebo on all headache measures</li> <li>• There was no statistically significant difference in outcome for tizanidine treated patients with migraine versus tizanidine treated patients with CTTH or migrainous headaches.</li> <li>• Tizanidine was more successful in preventing severe headaches (most likely those with more migraine features) than in reducing the overall frequency of headache.</li> <li>• Tizanidine is a centrally</li> </ul>	<b>Weaknesses:</b> <ul style="list-style-type: none"> <li>• Adverse effects reported by more than 10% of the patients included somnolence, dizziness, dry mouth, and asthenia.</li> <li>• Dropouts due to adverse events did not differ significantly between tizanidine and placebo.</li> <li>• This research only included samples that were ages 18-65, male/female, and that had specific headaches.</li> </ul>

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

		<p>three times a day with tizanidine vs. placebo.  <b>Sample Size:</b> 200 patients/samples were used in this research.  <b>Instrument Used:</b> The MIDAS questionnaire was completed at initial enrollment and at the end of week 12 of treatment. Screening laboratory tests were performed as well. Patients also completed the visual analog scale.  <b>Outcomes Measured:</b> Patients returned at weeks 4, 8, and 12 for review of completed diaries, assessment of adverse events, recording of vital signs, assessment of concomitant medication, pill counts, and provision of study medication sufficient for the next 4-week dosing period. Telephone contacts to discuss headache status, adverse events, diary compliance, drug management, and concomitant medications were scheduled at 2-week intervals between each visit.</p>	<p>acting muscle relaxant, it has significant impact on noradrenergic alpha 2 receptors in the brain stem that reside in the general vicinity of the brain stem generator or modulator currently believed to play a key role in migraine pathophysiology.</p> <ul style="list-style-type: none"> <li>• Tizanidine was an effective prophylactic adjunct for chronic daily headache, including migraine, migrainous headache, and tension type headache.</li> </ul>	<ul style="list-style-type: none"> <li>• This research excluded samples that had any kind of debilitating health issue, mental issues, abnormal lab screenings, impaired speech function.</li> </ul> <p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Large sample size</li> <li>• The research had a good outcome.</li> <li>• The drop out portion did not affect the study.</li> <li>• Tizanidine emerged as more effective than placebo on all headache measures</li> </ul>
--	--	--	--	---

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

<p>G. D’Andrea, S. Cevoli, &amp; D. Cologno, (2014).</p> <p><b>Level of Evidence: VI</b> (Katie Rigdon)</p>	<p><b>Purpose:</b> The objective of this review is to determine whether or not herbal therapies (complementary and alternative medicine) will aid in migraines/chronic headaches.</p>	<ul style="list-style-type: none"> <li>• In these different clinical studies a simple random sampling was performed. Each herbal therapy study used a double-blind, randomized, placebo-controlled trial. No population or sample size was stated in the review. The clinical studies’ intentions were to measure the outcome of herbal therapies on migraine, whether or not the therapies truly work to decrease headaches.</li> </ul>	<ul style="list-style-type: none"> <li>• There were several studies in this review to determine if herbal therapies did in fact aid in migraines. Some did and some did not help. Complementary and alternative medicine therapies have, often, an insufficient efficacy and are accompanied with a numerous side effects.</li> </ul>	<p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• The lack of funding for studying these agents will continue to retard progress in this area as well, but hopefully the future will bring more concentrated efforts.</li> <li>• Some of the studies had withdrawal, which in return caused severe headaches and joint pain.</li> </ul> <p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• There is a growing body of evidence supporting the efficacy of various “complementary” and alternative medicine approaches in the management of headache disorders.</li> <li>• Many of these complementary modes are inexpensive, harmless, and</li> </ul>
---	---	--	---	---

EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

				possibly effective.
<p>Soderberg, E., Carlsson, J., &amp; Stener-Victorin, E. (2006).</p> <p><b>Level of Evidence: I</b></p> <p>(Rena Divine and Hayley Anderson)</p>	<p><b>Purpose:</b> To compare acupuncture, relaxation training, and physical training in the treatment of chronic-tension type headaches.</p>	<p><b>Design:</b> Randomized control trial</p> <p><b>Sampling method:</b> acupuncture, relaxation therapy, or physical training</p> <p><b>Sample size:</b> 90 patients with chronic tension type headache</p> <p><b>Brief description of interventions (if any):</b> Patients were registered using a visual analogue scale and a headache diary.</p> <p><b>Outcomes measured:</b> Outcome was to see if relaxation training induced the most pronounced effects directly after the treatment period, compared with acupuncture and physical training.</p>	<ul style="list-style-type: none"> <li>• To be classified as a chronic tension type headache, the headache must occur at least 15 days per month for at least 6 months.</li> <li>• Assessment of acupuncture, physical training and relaxation therapy were performed.</li> <li>• The study demonstrated the effectiveness of long-lasting reduction of headaches.</li> <li>• The study showed that the patients had more headache free days and headache free periods.</li> <li>• The study showed a significant and long-lasting effect for patients with chronic tension type headaches.</li> </ul>	<p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• There was a low number of patients who turned in there pain diaries and low number of patients in the study as a whole.</li> <li>• Of the 90 patients who were apart of the study, 17 were men and 73 were women.</li> <li>• Participation in the study and the attention from the physiotherapists may have affected the patients compliance</li> </ul> <p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• The article did find that acupuncture, physical training and relaxation therapy had a significant increase on long lasting effects to prevent migraines.</li> </ul> <p><b>Significance for our project:</b></p> <ul style="list-style-type: none"> <li>• This article emphasized on acupuncture, physical</li> </ul>

EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

				<p>training and relaxation therapy.</p> <ul style="list-style-type: none"> <li>• These three techniques are a big part of non-pharmaceutical treatments for headaches. It explains how each of these in their own way are effective and how they compare to each other.</li> </ul>
<p>Weeks, Randall E., (2013).</p> <p><b>Level of Evidence: I</b></p> <p>(Katie Rigdon)</p>	<p><b>Purpose:</b> The objective to this review was to do a behavioral assessment on the patients having chronic headaches then doing a behavioral treatment to see if in fact it would help these patients to know triggers or identify the early S&amp;S of migraines to help prevent the headaches from happening.</p>	<p><b>Design:</b> Meta-analysis</p> <p><b>Sampling methods:</b> Behavioral Assessments and Behavioral Treatments</p> <p><b>Description of Methods:</b> Patients had an Behavioral Assessment done on them and then went through Behavioral Treatment.</p> <p><b>Population:</b> Ranged from men to women, low to high income families, all ages, some disorders/diseases, and disabilities.</p> <p><b>Sample size was not included in this review.</b></p> <p><b>Outcomes Measured:</b> Measured outcomes of non-pharmacological treatment</p>	<ul style="list-style-type: none"> <li>• Some triggers to migraines/chronic headaches are medication overuse, stressful life events, sleep patterns, eating habits, caffeine overuse, and obesity.</li> <li>• Thermal biofeedback combined with relaxation training, EMG bio-feedback, and cognitive behavior therapy were effective treatment options for migraines.</li> <li>• Meta-analytic reviews have shown that such non-pharmacological treatments have been effective for both migraine and tension-type</li> </ul>	<p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• Non-pharmacological treatments can not treat alone.</li> <li>• It needs to be emphasized more that behavioral and other non-pharmacological treatments are not anti-pharmacological.</li> <li>• In the treatment of migraines both behavioral and non-pharmacological treatment must be used.</li> </ul> <p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• These studies included all ages, men and women,</li> </ul>

EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

		<p>included: reduced frequency/severity of headache, reduced headache related disability, reduced reliance on poorly tolerated or unwanted □pharmacotherapy, enhanced personal control of pain, and reduced headache related distress and psychological □symptoms.</p>	<p>headaches.</p> <ul style="list-style-type: none"> <li>• Effective non-pharmacological strategies help to ensure pharmacological treatment compliance, which has been shown to be a significant problem with headache patients.</li> <li>• Patients benefit from a detailed educational program that highlights the complex nature of headache difficulties as well as the factors that appear to be related to the escalation of the frequency and severity of migraine headache.</li> </ul>	<p>people with health issues, disabilities, disorders, and even low/high income families.</p> <ul style="list-style-type: none"> <li>• It also included the triggers to migraines/chronic headaches, which are medication overuse, stressful life events, sleep patterns, eating habits, caffeine, overuse, and obesity.</li> </ul>
<p>Sun, Y. &amp; Gan, T. J. (2008)</p> <p>Level of Evidence: I (Nichole Rodes)</p>	<p>The purpose of this review was to assess the value of acupuncture for the treatment of chronic headaches.</p>	<p><b>Design:</b> Systematic Review  <b>Population:</b> The population included adult patients &gt;18 years old consisting a total of 3916 patients.  <b>Sampling Method/Size:</b> Databases used were Medline, CINAHL, Cochrane, and Scopus. Research was searched for in any language, free text, and MeSH terms. Two independent reviewers were tasked with screening</p>	<ul style="list-style-type: none"> <li>• Acupuncture is an effective treatment for chronic headaches.</li> <li>• It has been proven to significantly reduce the intensity of the headaches.</li> <li>• Subgroup analysis found that sham for migraines proved more effective than acupuncture.</li> <li>• Acupuncture has also been shown to provide a better quality of life for patients</li> </ul>	<p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• “Heterogeneity of study results is often considered a limitation in a systematic review”.</li> <li>• In this case, there were a wide variety of acupuncture treatment, types of headaches, and sham control designs.</li> <li>• Outcomes proved to</li> </ul>

EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

		<p>abstracts of matching studies. Used only randomized controlled trials up until the year 2007. “Observation periods of less than 4 weeks were excluded”. Thirty-one trials were included in this review.</p> <p><b>Description of Methods/Interventions:</b> The review of the trials showed needle acupuncture efficacy being compared to sham therapy, medication, and non-pharmacological controls.</p> <p><b>Instruments used:</b> “The modified Oxford Scale was used to assess the internal quality of the included reports” while the criteria of Juni et al. was used to assess the quality of the trials.</p> <p><b>Outcomes measured:</b> Outcomes for this study included comparing needle acupuncture to other treatment therapies.</p>	<p>with headaches</p> <ul style="list-style-type: none"> <li>• Lower incidences of side effects were found in those that used acupuncture for treatment rather than common pharmacological therapies.</li> </ul>	<p>not be consistent, with only 12 of the included studies reporting consistency.</p> <ul style="list-style-type: none"> <li>• Publication bias was included.</li> </ul> <p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• “An objective scoring system was used to further validate the quality of the included trials”.</li> <li>• A criteria of Juni et al. was used to assess the trials used.</li> <li>• Reliability was regarded by including trials with better designs and larger sample sizes than a previous review.</li> <li>• More recent studies were used because of their better quality.</li> <li>• Subgroup and sensitivity analyses were conducted when possible to allow for further strengthening to the data.</li> </ul>
<p>Vijayalakshmi, I., Shankar, N., Saxena, A.,</p>	<p>The purpose of this study was to</p>	<p><b>Design:</b> Randomized interventional study</p>	<ul style="list-style-type: none"> <li>• The study found among the acupuncture group that</li> </ul>	<p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• The study only</li> </ul>

EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

<p>&amp; Bhatia, M. S. (2014). Level of Evidence: II (Nichole Rodes)</p>	<p>“compare the effectiveness of electro acupuncture therapy” and “conventional drug therapy on the psychological profile of” migraine sufferers “based on the assessment of quality of life and disability parameters”.</p>	<p>(Randomized Controlled Trial) <b>Population:</b> The population consisted of 60 subjects. They were then randomly assigned to groups of 30. <b>Sampling method/size:</b> The 60 subjects were randomly assigned to either the acupuncture group (Group A) or the drug group (Group D). <b>Description of Methods/Interventions:</b> The MIDAS questionnaire was used to “assess the disability due to migraine headache” while the WHO QOL BREF questionnaire was used “to score the 26 questions regarding their QOL”. Group A “underwent electro acupuncture therapy for 10 sittings over 30 days” while Group D received “flunarizine 20 mg OD and paracetamol 500 mg” for 30 days <b>Instruments used:</b> “Psychological parameters were assessed by using WHO Quality of Life BREF questionnaire and MIDAS questionnaire”. Group A underwent electro</p>	<p>after “one month of treatment with acupuncture” it “significantly improved the physical and psychological domains of quality of life though there was no statistically significant difference found in the social and environmental domains”.</p> <ul style="list-style-type: none"> <li>• Among the drug group it was found that “the drug therapy in migraneurs had significantly improved the physical and psychological domains and thus the QOL”.</li> <li>• “The QOL had significantly improved more in the acupuncture therapy group as compared to the drug therapy group”.</li> <li>• “The MIDAS scores remained significantly higher in migraneurs on drug therapy than in migraneurs on acupuncture therapy”.</li> </ul>	<p>include ages ranging from 20-40.</p> <ul style="list-style-type: none"> <li>• The outcome may have been altered due to the participants being allowed to familiarize themselves with the experimental and environmental conditions of the lab.</li> </ul> <p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Of the sixty subjects, “when age, height, and weight of both the groups were compared” it was found “that there was no statistically significant difference between” the groups meaning these parameters did not influence the outcome of the study.</li> <li>• Several studies support the findings of this study.</li> <li>• Patients were assessed twice, before and after the completion of the treatment they</li> </ul>
--	--	---	--	--

EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

		<p>acupuncture at the pain clinic. Group D were give the medications.</p> <p><b>Outcomes measured:</b> Outcomes for this study included assessing the effectiveness of acupuncture and drug therapy on the psychological parameters of migraine patients.</p>		<p>underwent.</p> <ul style="list-style-type: none"> <li>No subjects dropped out.</li> </ul>
<p>Allais, G., De Lorenzo, C., Quirico, P.E., Lupi, G., Airola, G., Mana, O., &amp; Benedetto, C. (2003).</p> <p>Level of Evidence: II</p> <p>(Nichole Rodes)</p>	<p>The purpose of this study was to evaluate the effectiveness of transcutaneous electrical nerve stimulation, infrared laser therapy and acupuncture for the treatment of transformed migraines.</p>	<p><b>Design:</b> Open Randomized Trial (Randomized Controlled Trial)</p> <p><b>Population:</b> 60 women suffering from transformed migraines with a mean age of 41.4 years.</p> <p><b>Sampling method/size:</b> The 60 women were then assigned to three different treatments: TENS, infrared laser therapy, or acupuncture.</p> <p><b>Description of Methods/Interventions:</b> Each subject had an equal chance of being assigned to each of the three groups. “In each group the patients received ten sessions of the treatment”. Treatments included transcutaneous electrical nerve stimulation, infrared lasertherapy, or acupuncture.</p>	<ul style="list-style-type: none"> <li>Each technique proved to improve and help treat transformed migraines.</li> <li>During the first month it was shown that TENS and laser therapy are more effective than acupuncture.</li> <li>Acupuncture though proved to be the most effective of the three, “showing the best long-lasting beneficial effects”.</li> </ul>	<p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>There were different timings of the applications leading to different responses in the groups over time.</li> <li>Seven participants did not complete the prescribed treatment or did not complete their headache diaries.</li> </ul> <p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>“Until now, no study has compared the results obtained by” the three treatments.</li> <li>All three groups had an equal range of age, systolic and diastolic blood pressures, age at onset of the</li> </ul>

EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

		<p><b>Instruments used:</b> “An ANOVA test for repeated measures was used; in order to localize the source of the variance a post hoc Bonferroni <i>t</i> test was then applied”. A one-way ANOVA test was also performed “in order to evaluate the difference among groups.</p> <p><b>Outcomes measured:</b> Outcomes measured for this study included assessing the effectiveness of TENS, laser therapy, and acupuncture on transformed migraines. “Days with headache per month were recorded on a headache diary”. Their variations were calculated every month.</p>		<p>migraines and clinical characteristics of the disease.</p>
<p>Holland, S., Silberstein, S.D., Freitag, F., Dodick D.W., Argoff, C., Ashman, E. (2012).</p> <p>Level of Evidence: I  (Lauren Johnson and Taylor Hayes )</p>	<p>The purpose of this study was to provide updated evidence-based recommendations for the preventive treatment of migraine headaches by studying whether NSAIDs or other complementary treatments are an effective treatment for migraine</p>	<p><b>Design:</b> Systematic review  <b>Population:</b> Clinical studies limited to assessing efficacy of NSAIDs and complementary treatments for prevention of episodic migraine in adults.  <b>Sampling method/size:</b> 15 articles  <b>Interventions:</b> NSAIDs or complimentary treatments  <b>Instruments:</b> none  <b>Outcomes Measured:</b> Whether NSAIDs or</p>	<ul style="list-style-type: none"> <li>• Study used 179 articles and included pharmacologic and complementary treatments and NSAIDs.</li> <li>• The supplemental search yielded an additional 105 articles. Of the total 284 articles, 15 were classified as Class I or Class II and identified as relating to NSAIDs and complementary treatments.</li> </ul>	<p><b>Weakness:</b></p> <ul style="list-style-type: none"> <li>• Limited weaknesses; this study represents current practice guidelines</li> </ul> <p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Strong external validity, large panel sample size decreases bias and increases validity.</li> <li>• Strong internal validity, cross analysis systematic</li> </ul>

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

	prevention.	complimentary treatments were more effective in treating migraines.	<ul style="list-style-type: none"> <li>• Petasites is effective for migraine prevention (Level A). Fenoprofen, ibuprofen, ketoprofen, naproxen, naproxen sodium, MIG-99 (feverfew), magnesium, riboflavin, and subcutaneous histamine are probably effective for migraine prevention (Level B).</li> <li>• Treatments considered possibly effective are cyproheptadine, Co-Q10, estrogen, mefenamic acid, and flurbiprofen (Level C).</li> <li>• Data are conflicting or inadequate to support or refute use of aspirin, indomethacin, omega-3, or hyperbaric oxygen for migraine prevention.</li> <li>• Montelukast is established as probably ineffective for migraine prevention (Level B).</li> </ul>	<p>review conducted in clear manner, no researcher bias or conflict of validity.</p> <ul style="list-style-type: none"> <li>• This review is highly applicable to current best practice guidelines.</li> </ul>
--	-------------	---	---	--

### **Synthesis of Evidence**

Chronic headaches and migraines are very debilitating conditions affecting the lives of many patients worldwide. It has been ranked among the top twenty causes of disability worldwide, and is the most According to the International Headache Society (IHS), chronic daily headache is the “persistent experience of head pain for at least 4 hours’ duration for more than 15 days per month” (Saper, Lake, Cantrell, Winner, & White, 2002). Additionally, the IHS defines chronic tension-type headaches as a headache that occurs” at least 15 days per month for at least 6 months” (Soderberg, Carlsson, & Stener-Victorin, 2006). Clearly these headaches have a large affect on a patient’s activities of daily living. Prescription drugs treating these headaches depress the central nervous system, and as a result have many negative side effects. This leads many patients to look for alternative methods of headache control (D’Andrea, Cevoli, & Cologno, 2014). The purpose of this paper is to compare the effectiveness of non-pharmacological therapy and complementary and alternative treatments to standard prescription treatment of chronic headaches in adults.

A common alternative therapy for both tension headaches and migraines is acupuncture. According to a systematic review of thirty-one studies, acupuncture is an excellent treatment for chronic headache, and showed better results than traditional medication therapy in decreasing headache intensity and frequency, and increasing the response rate of participants. The systematic review discovered that in the early and one year follow-up reports more participants responded to acupuncture treatment than medication treatment. Additionally, more patients in the early follow-up had better physical function, and therefore an increased quality of life (Sun & Gan, 2008). Another study focused on the difference between acupuncture and traditional drug therapy in quality of life of migraine patients. The study used the World Health Organization

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

Quality of Life Biomedical Research and Education Foundation questionnaire and the Migraine Disability Assessment questionnaire to gather data. Results suggested that acupuncture was a better treatment than drug therapy for improving quality of life and relieving disability (Vijayalakshmi, Shankar, Saxena, & Bhatia, 2014). Less-commonly studied techniques include transcutaneous electrical nerve stimulation (TENS) and infrared laser therapy. One randomized trial study found that participants responded positively to these techniques, as there was a decrease in headache days per month. Though these methods were effective, the study noted that acupuncture provided better long-term relief than TENS and infrared laser therapy (Allais et al., 2003).

The American Academy of Neurology distinguished reasons why patients seek alternative behavioral and physical therapies instead of prescription medications. Some of these reasons are that patients had life altering side effects, pregnancy or planning a pregnancy, overuse or medical contraindications, or it was a patient preference. More than a hundred studies regarding the effects of behavioral therapies on patients with headaches have determined that they are clinically effective (Weeks, 2013). A study that observed the effects of relaxation therapy and physical training on chronic tension type headaches demonstrated that it notably reduced the intensity of headaches. They also increased the number of headache free days in chronic tension-type headache patients. The study showed that six months after the treatments the patients had a positive and significant long lasting effect. These techniques include stress coping, breathing techniques, and relaxation exercises that can be performed throughout daily activities (Soderberg, Carlsson, & Stener-Victorin, 2006).

A study done by the American Academy of Neurology and the American Headache Society recommended the use of herbal therapies as an effective treatment and prevention of

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

migraines. Some herbal therapies that were effective were feverfew, magnesium, and riboflavin (Holland et. al., 2012). Along with feverfew's pain reducing and anti-inflammatory effects, it has also been used for nausea and vomiting, which are common symptoms in migraine patients (D'Andrea, Cevoli, & Cologno, 2014). The study concluded that petasites, also known as butterbur, was the most effective herbal therapy for migraine prevention. Petasites has been used for many centuries as a treatment for headaches, and can also be used for spasms and wound healing. Herbal therapy is an effective and inexpensive treatment for people who are searching for an alternative therapy to prescription medicines that cause side effects (D'Andrea, Cevoli, & Cologno, 2014).

Traditional prescription drug therapy for chronic headaches and migraines often leave patients with uncomfortable side effects that impact their daily lives. One of the main advantages of alternative therapy is the decreased amount of side effects as compared to prescription drugs. The systematic review found that there were a significantly lower number of side effects in the acupuncture groups compared to the medication groups. There were only minor side effects associated with acupuncture, mainly "redness, spot bleeding, and local discomfort." Acupuncture is reported to be safe, but must be performed by a qualified acupuncturist (Sun & Gan, 2008). There were no serious side effects reported in the TENS and laser therapy study (Allais et al., 2003). Herbal therapies were "well tolerated" by participants, and only few mild side effects were reported (D'Andrea, Cevoli, & Cologno, 2014).

Based on current research, non-prescription and complementary and alternative therapies are viable alternatives to common prescription drug therapies. Acupuncture had the most supporting evidence of all the therapies researched. Additionally, herbal, behavioral and physical training, TENS, and laser therapy all resulted in positive effects in study subjects. All therapies

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

researched had significantly fewer side effects than prescription medication. Since the most common reason for patients seeking alternative therapy to prescription was the inability to handle the side effects, these are all viable alternatives to prescription medication.

### **Appraisal of Evidence**

1. The levels of evidence for our articles include five level Is, two level IIs, and one level VI.
2. Our compilation of evidence shows five articles in support of acupuncture, relaxation techniques, and other forms of complementary medicinal options as at least equally effective in the treatment and prevention of chronic headache episodes as pharmacological management. One study showed that among a variety of herbal treatment options, some herbs were effective while others were not effective in managing chronic headache pain. These research articles' conclusions are sufficient to safely promote acupuncture, relaxation techniques, or other forms of complementary medicine as adjunct or stand alone therapy as new recommendation additions to evidence based clinical guidelines.
3. Identified benefits to the patient for applying evidence-based practice recommendations include fewer and shorter migraines, increased manageability, and increased treatment options. For example, relaxation therapy may help a patient that does not have quick access to medicinal therapy. In addition, herbal remedies allow patients the option of growing plant treatment options near their home or are beneficial to patients seeking a more natural treatment plan. Identified benefits to the provider include the ability to provide patients with more options. Relaxation therapy may be beneficial for nurses in remote locations when no primary health care provider is available to prescribe

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

medication. Therapies such as relaxation, exercise techniques, and herbal products require less training of the health care provider, as these techniques are less invasive and therefore primarily require a simple patient education. Identified risks associated with applying evidence-based practice recommendations for acupuncture include increased risk of infection with needle sticks and increased accountability of the health care provider who must undergo specialty training to ensure quality care.

4. Only one of the studies evaluated cost effectiveness associated with implementation of acupuncture therapy for chronic migraine prevention and treatment and identified that this complementary method may be cheaper and more cost effective than current pharmacological interventions. No negative cost correlations have been identified in implementing new evidence based practice techniques.

### **Recommendations for Evidence-Based Practice**

- Acupuncture is a suitable complementary treatment for both tension headaches and migraines
  - Grade: A
  - Sun, Y., & Gan, T. J. (2008). Acupuncture for the management of chronic headache: a systematic review. *Anesthesia And Analgesia*, 107(6), 2038-2047. doi:10.1213/ane.0b013e318187c76a
  - Vijayalakshmi, I., Shankar, N., Saxena, A., & Bhatia, M. S. (2014). Comparison of effectiveness of acupuncture therapy and conventional drug therapy on psychological profile of migraine patients. *Indian Journal Of Physiology And Pharmacology*, 58(1), 69-76.

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

- Transcutaneous electrical nerve stimulation and laser therapy are effective treatments for chronic headache and migraines, but acupuncture has longer-lasting results
  - Grade: B
  - Allais, G., De Lorenzo, C., Quirico, P.E., Lupi, G., Airola, G., Mana, O., & Benedetto, C. (2003). Non-pharmacological approaches to chronic headaches: transcutaneous electrical nerve stimulation, laser therapy and acupuncture in transformed migraine treatment. *Neurological Science*, 24, S138-S142.
- Physical training and relaxation therapy can be used reduce the symptoms of chronic tension type headaches, but relaxation therapy has the best long-lasting effect after the treatment period
  - Grade: B
  - Weeks, R. E. (2013). Application of behavioral therapies in adult and adolescent patients with chronic migraine. *Neurological Sciences*, 34 (Suppl 1), S11-S17. doi: 10.1007/s10072-013-1360-6.
  - Soderberg, E., Carlsson, J., & Stener-Victorin, E. (2006). Chronic tension-type headache treated with acupuncture, physical training and relaxation therapy. Between group differences. *Cephalgia*, 26 (11), 1320-1329. doi: 10.1111/j.1468-2982.2006.01209.x
- Acupuncture therapy better improves the quality of life for migraine sufferers compared to the improvement of drug therapy alone.
  - Grade: A
  - Vijayalakshmi, I., Shankar, N., Saxena, A., & Bhatia, M. S. (2014). Comparison of effectiveness of acupuncture therapy and conventional drug therapy on

## EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

psychological profile of migraine patients. *Indian Journal Of Physiology And Pharmacology*, 58(1), 69-76.

- Feverfew, magnesium, riboflavin, and petasites (butterbur) are all effective herbal therapies for treatment and prevention of migraines and chronic headaches
  - Grade: A
  - Holland, S., Silberstein, S.D., Freitag, F., Dodick, D.W., Argoff, C., & Ashman, E. (2012). Evidence-based guideline update: NSAIDs and other complementary treatments for episodic migraine prevention in adults. *American Academy of Neurology*, 78, 1346-1353.
  - D'Andrea, G., Cevoli, S., & Cologno, D. (2014) Herbal therapy in migraine. *Neurological Sciences*, 35(Suppl 1), S135-S140, doi: 10.1007/s10072-014-1757
- Acupuncture, physical training, relaxation therapy, and herbal therapies have fewer side effects affecting activities of daily living for patients.
  - Grade: A
  - D'Andrea, G., Cevoli, S., & Cologno, D. (2014) Herbal therapy in migraine. *Neurological Sciences*, 35(Suppl 1), S135-S140, doi: 10.1007/s10072-014-1757-x
  - Sun, Y., & Gan, T. J. (2008). Acupuncture for the management of chronic headache: a systematic review. *Anesthesia And Analgesia*, 107(6), 2038-2047. doi:10.1213/ane.0b013e318187c76a

**References**

- Allais, G., De Lorenzo, C., Quirico, P.E., Lupi, G., Airola, G., Mana, O., & Benedetto, C. (2003). Non-pharmacological approaches to chronic headaches: transcutaneous electrical nerve stimulation, laser therapy and acupuncture in transformed migraine treatment. *Neurological Science*, 24, S138-S142
- D'Andrea, G., Cevoli, S., & Cologno, D. (2014) Herbal therapy in migraine. *Neurological Sciences*, 35(Suppl 1), S135-S140, doi: 10.1007/s10072-014-1757-x
- Holland, S., Silberstein, S.D., Freitag, F., Dodick, D.W., Argoff, C., & Ashman, E. (2012). Evidence-based guideline update: NSAIDs and other complementary treatments for episodic migraine prevention in adults. *American Academy of Neurology*, 78, 1346-1353
- Saper, J., Lake, A., Cantrell, D., Winner, P., & White, J. (2002). Chronic Daily Headache Prophylaxis With Tizanidine: A Double-Blind, Placebo-Controlled, Multicenter Outcome Study. *Headache: The Journal Of Head & Face Pain*, 42(6), 470-482
- Soderberg, E., Carlsson, J., & Stener-Victorin, E. (2006). Chronic tension-type headache treated with acupuncture, physical training and relaxation therapy. Between group differences. *Cephalgia*, 26 (11), 1320-1329. doi: 10.1111/j.1468-2982.2006.01209.x
- Sun, Y., & Gan, T. J. (2008). Acupuncture for the management of chronic headache: a systematic review. *Anesthesia And Analgesia*, 107(6), 2038-2047.  
doi:10.1213/ane.0b013e318187c76a
- Vijayalakshmi, I., Shankar, N., Saxena, A., & Bhatia, M. S. (2014). Comparison of effectiveness of acupuncture therapy and conventional drug therapy on psychological profile of migraine patients. *Indian Journal Of Physiology And Pharmacology*, 58(1), 69-76
- Weeks, R. E. (2013). Application of behavioral therapies in adult and adolescent

EVALUATING COMPLEMENTARY AND ALTERNATIVE TREATMENT

patients with chronic migraine. *Neurological Sciences*, 34 (Suppl 1), S11-S17. doi:

10.1007/s10072-013-1360-6