

Effect Of Yoga Postures In Children With Migraine Headache

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Abstract:

Aim: The aim of the study was to evaluate the effect of Yoga posture in reducing the symptoms of migraine headache in children.

Materials and Methods: A randomized clinical control trial was conducted by recruiting sixty children who showed symptoms of migraine for at least three months and were randomly divided into control and experimental groups. Experimental group were provided with training on yoga postures for 15 days after which the subjects practiced postures for three months.

Results: The results indicated a significant reduction in the pain and symptoms of migraine in experimental group compared to control group. The impact of headaches was improved with ($p < 0.0001$). Pain intensity was calculated by PS ($p < .008$) compared with control group.

Conclusions: The results of the present study indicate that regular practice of yoga posture can be an effective means of complementary and alternative medicine to overcome the symptoms of migraine in children.

Introduction

Headache is a common disabling disorder among which migraine is the primary one, (Lipton RB 2015) which affects the quality of life, social activities and family life. (Mathew MT2005) Migraine affects about 30% of female and 17% of male aged 21 to 34 years (Lipton RB, 2007 & R. Allan purdy2007). Migraines have been estimated to affect 8.7 million female and 2.6 million male in the United States, (Chad Osterhaus JT 1991) to account for 2.0% years of life lost due to a disability in women of all ages. Migraine is responsible for 1.4% of total 12 years of life lost due to a disability in both sexes of all ages (HCCIH 2004). Migraine is highly prevalent in India, and associated with substantial disability with the Prevalence of 25.2% with age range of 35-45 years in both genders. The overall mean total was 3.7 ± 6.1 days/3 months, representing a loss

of 6.1% of productive days, of which 2.1 ± 4.0 days/3 months were lost at home and 1.4 ± 4.1 Days/months were lost in the work place. (G Kulkarni et al G Rao 2014). B-Blockers are used as first line of medicines to reduce the frequency of migraine attacks) in conventional medicine. (Dikran Parsekryan, 2000) Produce several side effects, Epidemiological studies show that 42% of general population in the United States, 48% in Australia, and 20% in the United Kingdom had used CAM. Massage (42%); exercise (30%); acupuncture (19%); chiropractic (15%); and herbs (15%) are the most used CAM therapies for headache. (John PJ 2007) Survey conducted on 481 migraine patients reported that 89.3% migraineurs' recourse to CAM was specifically for their headache. (John PJ 2007) Yoga being an ancient Indian, mind-body approach which has components comprising of

meditation, breathing, and activity or postures. (Nagarathna R 1985) Stress management through breathing and relaxation techniques bringing greater balance into the body and the systems of the body, primarily in calming the nervous system.(John PJ 2007).The integrated approach of yoga therapy like yogic Asana, Pranayama, Kriyas and relaxation technique has a significant role in the reduction of headache frequency and associated clinical features. Yoga is been used to bring down the physical symptoms of chronic pain; it also helps individuals to deal with the emotional aspects of chronic pain, reducing anxiety and depression. Being an Ancient Indian therapy, it consists of three different aspects such as Asana, Pranayama and Meditation. Among these, postures in yoga use a combination of isometric exercise and relaxation methods to provide the body with steadiness and lightness that optimizes tissue functioning, body reconditioning, realignment of the skeleton, and improving blood and lymph flow through underlying tissues (Vallath, 2010). It is believed that postures open up the flow of energy and helps to strengthen the muscles (Vallath, 2010). Studies have shown that yoga postures also decrease cortisol and cholinesterase levels, which leads to a decreased stress and anti-inflammatory response (Vallath, 2010).The use of yoga as CAM has not been widely investigated for migraine, especially in children. Hence, the present study aims to systematically evaluate the ability of yoga in relieving the symptoms of headache.

Methods and materials:

The study was a randomized controlled clinical trial conducted at the Division of Yoga, CIMR MAHE Manipal, and Karnataka

Study population

A total of 60 subjects aged between 8-16 years were screened, of which individuals satisfying the inclusion criteria were recruited randomly to either of the two groups.

Inclusion and Exclusion criteria:

Inclusion Criteria:

The diagnosis of migraine was classified based on ICHD-3 classification.

Children aged between 8-16 years

Children suffering from migraine for at least 3 months

willing to visit the study site for follow-up

Exclusion criteria

Above 16years of age and below 8 years

Receiving other treatment.

Migraine with other co-morbid medical conditions

Subject allocation

The subjects were randomized by computer generated random number table into either of the below mentioned groups. There are equal numbers of subjects in each group (n=30) and the study duration was 90 days.

Intervention:

After the baseline parameters are assessed after the recruitment of subjects, following intervention has been prescribed for the experimental group.

Group 1 Intervention:

S.No	Yoga Postures	Duration(25min)
1	Swastikasana	2/min
2	Vajrasana	2/min
3	Suptavajrasana	2/min
4	Simhasana	2/min
5	Trikonasana	2/min
6	Paschimottanasana	2/min
7	Purvottanasana	2/min
8	makarasana	2/min
9	Bhujangasana	2/min
10	Shalabhasana	2/min
11	Dhanurasana	2/min
12	Shavasana	3/min

All the participants were trained to perform the above Postures by an expert for 15 days. Pre-assessment tests were done prior to the training and participants were advised to practice the prescribed postures for 25 minutes once every day for entire duration of the study. Subjects were also provided with handouts explaining the method of performing postures for reference. All the subjects were assessed at the end of 12 weeks of study period.

Group 2 interventions:

Subjects recruited for yoga training but on waitlist were included in the control group. Besides, handouts that emphasized self-

care strategies such as avoiding triggering factors, life style modifications in diet and sleep were provided to the subjects.

Results:

The data for normal distribution was analysed .The data of HIT and PS at baseline were not normally distributed. Within the group changes for normally distributed variables were assessed using paired t test and data between groups using independent-t test. The data that were not normally distributed, within group were assessed Wilcoxon signed rank test.

Table 1: Table comparing the mean score of Experimental an Control groups for Headache Impact Test. Values is mentioned as Mean ± Standard Deviation.

Variable	Group 1: Experimental		Group 2: Control	
	pre	Post	pre	post
HIT	58.53±9.64	41.77±5.49***	60.73±7.72	48.67±8.54*

Within group analysis suggest a significant reduction in pain (p=0.001) in the experimental group. There were also reductions in pain (0.01) in the control group. Between group analyses indicate that there was a significant improvement in pain in the experimental as compared to the control group.

Table 2: Represents mean score of Group 1 and Group 2 on Pain scale. Values are Mean ± Standard Deviation.

Variable	Group 1:Experimental		Group 2:Control	
	pre	post	pre	post
PS	6.49±2.54	3.34±1.71**	6.55±1.95	5.03±1.91*

Within group analysis suggest a significant reduction in pain ($p=0.001$) in the experimental group. There were also reductions in pain (0.01) in the control group. Between group analyses indicate that there was a significant improvement in pain in the experimental as compared to the control group.

Discussion:

The aim of the present study was to evaluate the effect of Yogic postures on Migraine headache also to evaluate its effectiveness in reducing intensity of pain and severity of symptoms of migraine thereby improving the health status of children. The results of the present study indicate that there is a significant reduction in the pain in experimental group practicing yogic posture. Pain scale is widely used for assessing the clinical features of migraine. . In the present study, both yogic posture and wait listed control self-care group showed a significant improvement with respect to pain severity. A systematic review on the effectiveness of physical and rehabilitation interventions for migraine showed significant evidence for the effectiveness of a yoga when compared to no treatment and other active treatments at reducing pain.

The results of the present study seem to support the findings of the earlier investigations and indicate that interventions involving yogic posture help in reducing migraine symptoms. Similarly, results of the present study also indicate that a significant reduction in migraine headache frequency and associated clinical features, in children treated with yoga over a period of 3 months as was reported in an earlier study (John PJ 2007). In this study the main mechanism contributing in the yogic treatment of migraine is a state of relaxed alertness, which includes increased parasympathic activity, calming of stress response systems and involvement of neuroendocrine system by releasing of hormones also a positive coordination with thalamic generators (Desai BP 1990).

Conclusion:

Within the limitations of the present study, it is concluded that yogic postures in children with migraine are effective in reducing the severity of symptoms and can be used as complimentary therapy to reduce intensity of pain. However further studies may be required to standardize the duration and establish possible mechanisms behind these effects.

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