

Yogic Meditation in Tension Headache

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Abstract

Seven tension headache cases were subjected to yogic Meditation for 30 sessions. Single group design with multiple assessment was adopted. The pre, mid and post, assessments were carried out using Psychophysiological measures viz. EMG and GSR and Psychobehavioural measures viz. Visual Analogue Scale. Results indicate no statistically significant reduction in the frontalis muscle tension and skin conductance in the group, although clinically there have been a decline in these measures. Statistically significant reduction in pain perception was observed on the Visual Analogue Scale. Yogic meditation was effective in reducing tension headache.

Key words -

**Yogic meditation,
Psychophysiological and Psychobehavioural measures,
Tension headache**

Headache is one of the common pain conditions. Nearly 80 per cent of headaches are muscle contraction or tension headaches [1]. Headache research has not concentrated much on the subjective component of the disorder viz., estimates of pain intensity, its sensory qualities, the emotional feelings experienced and the evaluation of pain.

Various modes of treatment have been carried out to relieve tension headache. Drug therapy along with psychotherapy and behaviour therapy either alone or in combination have been carried out [2]. Zitman [3] reported that EMG biofeedback and relaxation training have been found to be equally effective in tension headache. EEG alpha feedback and relaxation training have been found to reduce headache [4]. Brunda [5], however found inconsistency in changes occurring in EMG and GSR measures with tension headache cases while subjected to relaxation procedures.

The effectiveness of yoga in tension headache was mentioned by Iyengar [6]. According to Patanjali (h) 200 A.D. resistance to stress disorders could be achieved by the practice of yoga [7]. Among the eight limbs of yogic discipline, posture (Asanas), breath regulating exercise (Pranayama) and meditation (Dhyana) are considered most important in the management of stress related disorders [8]. Patel [9] found that yogic relaxation and biofeedback techniques showed reduction in blood pressure in patients with hypertension. Yogic techniques like Asana, Pranayama, Prathyahara, Dharana and Dhyana helped in reducing various psychoneurotic and psychosomatic disorders [10]. Sridhara [11] subjected tension headache patients to a combination of yogic techniques and found significant improvement.

Meditation as a therapeutic technique has been applied to various pain conditions or disorders related to stress or anxiety [12]. Relaxation is the most widely studied aspect of meditation in literature [13]. Researches associated with yogic meditation, transcendental meditation and zen meditation has not yielded conclusive findings regarding physiological changes [14].

Benson and Wallace [15] found that meditation was effective in reducing the blood pressure of hypertensive patients.

Vipassana meditation is reportedly effective in reducing somatic disturbances, tension and insomnia [16]. Effectiveness of Vipassana meditation in reducing tension headache was found by Sharma et al [17]. Carruthers [18] has reported the importance of autogenic training and siddha meditation in the treatment of migraine headache.

A few investigators reported decrease in electrodermal activity following meditation [19]. A review of experimental research on the influence of meditation on somatic arousal by Holmes [20] did not reveal any evidence that mediating subjects attained lower levels of somatic arousal than did resting subjects.

Kabat-Zinn et al [21] have concluded that mindfulness meditation training for stress reduction provides significant longterm improvement in pain and psychological status. Effectiveness of meditation in the management of tension headache have been reported by Mishra [22] and Sharma [23].

Studies on yogic meditation using psycho-physiological and psychobehavioural assessments with clinical populations are few. The present study is an attempt to verify the effects of yogic meditation in the reduction of tension headache.

Method

Sample:

Seven tension headache cases were taken from clients attending Neurology and Psychiatry Outpatient Departments of NIMHANS. The selection was made as per the following criteria.

Inclusion criteria

- a) Diagnosis based on ICD-9 diagnostic criteria for tension headache (307.8).
- b) Age between 18 years and 40 years
- c) Duration of headache more than 3 months.
- d) diffuse, dull, aching band like headache.
- e) headache clinically declared non-neurological
- f) those who will express acceptance for undergoing yogic technique.

Exclusion criteria

- a) Headache associated with vomiting.
- b) Uncorrected refractory errors of the eye or any other detected organic cause that can explain the headache.
- c) Clients who have undergone Behaviour Therapy, Biofeedback or yoga.

The mean age of the subjects was 29 years with a S.D. of 7.72 years.

Design:

Single group design with multiple assessments was adopted.

Tools

Psychophysiological measures

- a) Electromyogram EMG [24].
- b) Galvanic Skin Response GSR [25].

Psycho-behavioural measures:

Visual Analogue Scale [26].

Procedure

All clients were assessed on psychophysiological and psychobehavioural measures. The pre-assessment on psychophysiological and psychobehavioural measures was done for three days. Following the pre-assessment the clients practised Yogic Meditation [7] for 30 days. Mid-assessments were done on the 19th, 20th and 21st day while meditation was continuing. After 30 sessions of meditation the clients were subjected to post-assessment for 3 days.

Instructions

"Sit in a comfortable posture keeping your spine and neck erect without stiffening your body. Now focus your attention on the object 'OM' and concentrate on it. Go on gazing at the object till the picture of 'OM' is imprinted in your mind. Now close your eyes. Recall the picture of 'OM' in your mind's eye and retain it.

When I instruct, open your eyes and again intensely observe the 'OM'. Close your eyes and form the picture of 'OM' in your mind and retain it till you find the image fading away. When the image fades, start chanting OM audibly according to the speed of mind (Instructor initiates the Japa).

Please remember, if you get any thoughts intruding your mind during meditation do not get involved or deliberately reject the thoughts, but just allow them to come and go. Continue chanting 'OM' in your mind. Feel the vibration of 'OM' spreading throughout the body. At the end, chant 'OM' loudly and slowly open your eyes".

Results

It has been found that the mean value for the EMG measure in the pre-assessment is 2.45 (± 0.94) and that in the post-assessment is 1.93 (± 0.94) and that in the post-assessment is 1.93 (± 0.65). However, the differences are not statistically significant as shown in Table I.

Table I - Pre-mid, mid-post and pre-post assessments for psychophysiological measures

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The mean value for the GSR measure in the pre-assessment is 6.78 (± 3.97). The mean of the mid-assessment is 5.54 (± 3.24) and that of the post-assessment is 5.05 (± 1.94). No statistically significant reduction in the readings were noted as shown in Table I.

The mean score on Visual Analogue Scale for the pre-assessment is 2.9 (± 1.46). The mean for mid-assessment is 1.88 (± 1.33) and that for the post-assessment is 0.82 (± 1.10). Table II shows that the difference in the mean values of the Visual Analogue Scale from pre to mid assessment is not statistically significant whereas the difference in means from mid to post assessment is significant at 0.05 level ($t=3.44$) and the mean difference from pre to post-assessment is significant at 0.01 level ($t=3.73$).

Table II - Pre-mid, mid-post and pre-post assessments for VAS

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Discussion

Results indicate that as yogic meditation progressed, EMG measure has decreased from the pre-assessment to mid-assessment to post-assessment indicating decreased frontalis muscle tension. Decreased frontalis EMG level has been found to indicate reduction in headache [27]. Studies of Malec and Sipprelle [28] and Morse et al [29] showed that meditating subjects experienced less muscle tension than did resting subjects. The results of the present study also show that subjects experienced less muscle tension after yogic meditation, though not statistically significant.

The findings on the GSR measure are similar to that of Malec and Sipprelle [28] and Morse et al [29] and Holmes et al [30] who did not find significant evidence of meditating subjects experiencing lower electrodermal activity than resting subjects.

Though the decrease in psychophysiological measures viz., the GSR and EMG levels were not statistically significant, decrease in the mean values indicated a positive trend in the group.

The psychobehavioural measure viz., the Visual Analogue Scale indicates that 30 sessions of yogic meditation produced significant decrease in pain perception. Kabat Zinn et al [21] have reported similar findings.

The results of the present study suggest that no statistically significant reduction in frontalis muscle tension and skin conductance were observed after yogic meditation. However, a decline in these measures indicate a positive trend of improvement. Significant reduction in pain perception was observed on the Visual Analogue Scale. hence, yogic meditation can be adopted as an effective tool in the management of tension headache.

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