

ORIGINAL ARTICLE

AUTOGENIC RELAXATION RESPONSE TO STRESS

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Background: Psychosocial stress is an important risk factor for psychiatric disorders such as depression and anxiety. Men and women report different reactions to stress, both physically and mentally. **Introduction:** The aim of this study was to evaluate the difference in gender response to the effect of Rajyoga meditation on chronic tension headache (CTH) and related co morbidities like anxiety and depression. **Methods:** Fifty-eight patients (35 females and 23 males) patients diagnosed to have CTH according to the International Headache Society Criteria- II were included in this study. Patients were taught Rajyoga meditation, which they practised 20 minutes a day for 8 weeks. Headache intensity was assessed by Visual Analogue Scale (VAS), while Anxiety and Depression were assessed by Hamilton anxiety and depression scale, before and after 8 weeks of meditation. **Results:** There was a highly significant reduction in anxiety, depression and headache parameters after Rajyoga meditation both in males and females but the percentage relief was more in females as compared to males. **Conclusion:** The management of CTH, anxiety and depression by tradition methods can become more effective by the adjunct practice of Rajyoga meditation techniques, which have a simple and potential benefit in both genders, more so in females as it potentiates the calmness effect of inner self.

Keywords: Rajyoga meditation, chronic tension headache, anxiety, depression

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INTRODUCTION

Nowadays stress is an absolutely inevitable part of life. Stress causes hormonal changes, biochemical changes, various illnesses and psychosomatic diseases.¹ Stress is an important trigger for tension headache.² Clinical evidence suggests that there is a strong association between CTH and a number of comorbid mental disorders, especially depression and anxiety.^{3,4} Various modalities like diaphragmatic breathing, deep muscle relaxation, self-hypnosis and autogenic techniques like biofeedback, yoga and meditation are used for relaxation.⁵ A large gender imbalance was noted in the Survey among users of mind-body therapies, including meditation, with 23.8% of women and 14.4% of men reporting use in the preceding years.⁶ It is suggested that spiritual and/or religious individuals may experience a protective effect against the neuroendocrine consequences of stress, though cardiovascular benefits may vary by gender.⁷

Many studies have demonstrated the physiological effects of yogic practices and transcendental meditation in various diseases.⁸ But we find very few studies demonstrating the effect of Rajyoga meditation as a relaxation technique on CTH and associated anxiety and depression. We undertook this project to find the autogenic relaxation response of Rajyoga Meditation on psychiatric co-morbidities associated with chronic tension headache, i.e., depression and anxiety, and compare the relaxation effect of 8 weeks of Rajyoga Meditation between men and women.

Rajyoga is a method of autogenic relaxation related mainly to mind, with spiritual link providing

training in realization of the true self, contemplating on divine 'Supreme Being'. Rajyoga is one of the training courses of Rajyoga Education and Research Foundation of Brahma Kumaris World Spiritual University –an NGO on consultative status with UNO, UNICEF and WHO.⁹ This yoga is simple to practice as there is no need to practice breath control, physical postures or use a mantra or an image nor does it require one to stop all thoughts, but stop only worldly and negative thoughts including the thoughts of one's own body and concentrate our mind on God. This takes one into a state of absorption in bliss and peace through positive thinking.

We briefly examined the role of this meditation as behavioural medicine in headache management which appears to be especially important for headache patients with psychiatric co-morbidities.

MATERIAL AND METHOD

The protocol of the study was approved by the ethical committee of the Institute. Fifty-eight patients (35 female and 23 male) aged 18 years and above with diagnosis of CTH with associated anxiety and depression attending psychiatry out-patient clinic of a tertiary hospital were included. The criteria of selection were based on Ad-hoc committee of classification of headache.¹⁰ Patients with headache for less than 6 months, headache due to sinusitis, eyestrain, cervical spondylosis and post-traumatic headaches were excluded from the study. All those patients who could not come for regular training of meditation were also excluded. Patients with severe depression or anxiety were also excluded.

Patients were informed about the methodology of and they were emphasised to come for regular follow up and an informed consent was taken. Detailed history regarding demographic data, duration, frequency, and severity for their headache was taken.

The headache intensity was noted with Visual Analogue Scale (VAS) at the first visit to hospital. The patients were randomly divided into two groups, Males (Group 1) and Females (Group 2). Patients in both groups were given relaxation therapy in the form of Rajyoga meditation. All the patients were on a similar medication. They were given eight sittings of 45 minutes each on alternate day for two weeks and were followed by once a week interview. Patients were advised to perform meditation for 20 minutes in the morning as well in the evening at their homes and note about their meditation practice in their daily diary. They were also given Brahmakumari literature on positive thinking.

During the interview the compliance of treatment and the method followed by the patients was checked and any queries relating to the methodology were answered. At this time patient's compliance to practice of meditation was also tested. Headache index (HI) was calculated by multiplying severity of headache and frequency of headache per week. The severity of anxiety and depression were determined using Hamilton anxiety¹¹ and depression scale¹². Mild anxiety and

depression was rated as 1, moderate as 2 and severe as 3. The data obtained were subjected to appropriate statistical analysis. All quantitative parameters between the two groups were compared using Student's *t*-test and *p*<0.05 was considered as significant.

RESULTS

The demographic profile of the patients of both groups was comparable. There were more females than males and more married people than unmarried ones in both the groups. The severity of headache was assessed by VAS scale (Visual Analogue scale).

Females showed a higher percentage improvement in severity of headache (72%) after 8 weeks of Rajyoga meditation as compared to males (44%). Percentage relief in frequency of headache in females and males was 68% and 47% respectively. Decrease in the duration of headache observed in females was 68% in comparison to just 61% in males. Mean headache relief as calculated by Headache index (severity of headache multiplied by frequency of headache per week) was 94% females, whereas it is almost 61% males.

The relief in anxiety was also highly significant in females (89%) as compared to males (61%). Depression scores improved up to 82% in females as compared males (66%). (Table-1, 2, 3).

Table-1: Demographic profile of the patients and duration of headache

Gender	Number	Age		Duration of Headache	
		Mean±SD	Range	Mean±SD	Range
Males	23	33.17±8.65	19-58	2.59±1.76	0.5-10
Females	35	30.21±9.20	18-50	2.90±2.00	0.5-10

Table-2: Parameters in males using visual analogue scale for headache and Hamilton anxiety and depression scale

Variable	T1 vs T8				
	T1	T6	T8	Relief	<i>p</i>
Severity (VAS)	6.04±1.52	3.65±1.87	3.22±2.69	47%	<0.001 ^{HS}
Frequency	5.74±1.91	3.35±2.34	2.96±2.30	48%	<0.001 ^{HS}
Duration	9.22±3.22	4.17±3.60	3.32±3.76	64%	<0.001 ^{HS}
Headache Index	41.22±14.95	17.65±18.77	14.96±18.48	64%	<0.001 ^{HS}
Anxiety	2.26±0.619	0.96±0.70	0.70±0.70	69%	<0.001 ^{HS}
Depression	1.48±0.51	0.83±0.38	0.43±0.50	70%	<0.001 ^{HS}

HS=Highly Significant, T1=mean headache parameters on day1, T6=mean headache parameters after 6 weeks, T8=mean headache parameters after 8 weeks

Table-3: Parameters in females using visual analogue scale for headache and Hamilton anxiety and depression scale

Variable	T1 vs T8				
	T1	T6	T8	Relief	<i>p</i>
Severity (VAS)	6.03±1.42	1.71±1.19	0.74±1.024	88%	<0.001 ^{HS}
Frequency	5.97±1.86	1.29±1.02	0.76±0.95	87%	<0.001 ^{HS}
Duration	8.87±3.97	1.49±1.85	0.56±1.05	94%	<0.001 ^{HS}
Headache Index	37.09±15.04	3.82±4.48	1.82±3.77	95%	<0.001 ^{HS}
Anxiety	2.21±0.59	0.56±0.56	0.21±0.41	90%	<0.001 ^{HS}
Depression	1.41±0.55	0.47±0.50	0.18±0.38	87%	<0.001 ^{HS}

HS=Highly Significant, T1=mean headache parameters on day1, T6=mean headache parameters after 6 weeks, T8=mean headache parameters after 8 weeks

DISCUSSION

The present study investigated the influence of 8 week Rajyoga meditation course on the chronic tension headache and associated comorbid states like anxiety

and depression. Patients in both groups showed highly significant improvement in all parameters (anxiety, depression, blood pressure and heart rate) after a short 8 week interventional course of Rajyoga meditation.

In our study the women showed more significant relief than the men. Our study matches with the study of Mendhurwer¹. He documented that TM meditation produced significant reduction in anxiety scores in females as compared to males.¹

During psychological stress the pituitary-thyroid endocrine axis of females reacts differently than males. During intellectual stress females do not react as strongly as males and after the stress situation is over, females seem to maintain and re-establish their psychoendocrine homeostasis more effectively and rapidly than males.¹³ National data indicates that women use mind-body practices, including meditation, at a higher rate than men.¹⁴

After mindfulness meditation, females show higher activation in the right amygdala in response to emotional images as compared to males. A greater increase in amygdala response associated with a greater decrease in depression score may be explained by an increased capacity for compassion after compassion training.¹⁵ Chaya MS¹⁶ studied the effect of yogic practices on diurnal metabolic rate of healthy subjects and found significant reduction in the metabolic rate in females as compared to males depicting less sympathetic arousal in females.

A further detailed study on gender based response of Rajyoga Meditation in anxiety and depression may be necessary to determine the precise cause of these differences.

CONCLUSION

This study demonstrates the role of Rajyoga meditation in early and quick relief of CTH, anxiety and depression, if practised regularly, along with the medical treatment Rajyoga meditation can be used as a complementary therapy for conditions such as tension headache, anxiety, depression, and mood disorders. Women use mind body therapies more effectively, so they should be encouraged to use these therapies for treatment of anxiety and depression as these disorders are more common in females as compared to males.

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