ORIGINAL ARTICLE

EFFECT OF SHORT TERM RAJYOGA MEDITATION ON ANXIETY AND DEPRESSION

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Background: With the current globalisation of the world's economy and demands for enhanced performance, stress is present universally. Life's stressful events, anxiety and depression cause both deleterious and cumulative effects on the human body. The practice of meditation might offer a way to relieve that stress. This study was designed to determine the effectiveness of a group stress reduction program based on Rajyoga meditation for patients with anxiety and depression. **Method:** The study was conducted on 100 patients suffering from anxiety and depression who were on similar drug regime. They were randomised into two groups; Meditators (n=50; age 34.12±9.05 years) and controls (n=50 age 33.68±10.78 years). The meditators were taught Rajyoga meditation and practised for 20 min/day, 7 d/week for 6 weeks. The control group did not practice any type of meditation. Results were assessed by using Hamilton anxiety and depression scales. **Results:** The patient with anxiety and depression symptoms in intervention group and control group showed significant improvement following six weeks of intervention as suggested by significant reduction in scores of HAM-A (p<0.001) and HAM-D (p<0.001). However, the percentage of relief was more in intervention group as compared to control group. **Conclusion:** A short-term, yoga-based lifestyle intervention may significantly reduce anxiety and depression and improve subjective well-being and personality.

Keywords: Rajyoga, anxiety, depression, life-style

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INTRODUCTION

Anxiety and depression are among the most common conditions cited by those seeking treatment with complementary and alternative therapies. Community surveys indicate that the use of these therapies is more common among people with psychiatric problems than the rest of the population because fatigue, insomnia, chronic pain, anxiety, and depression are among the most commonly reported reasons for such therapies.[1–3]

These strategies cultivate positive emotions and are particularly suited for preventing and treating problems rooted in negative emotions.[4] Holistic approaches like exercise, meditation, tai chi, qigong, and yoga are gaining increasing popularity in the management of affective disorders. These strategies optimise health and well-being to the extent that they cultivate positive emotions. Cultivated positive emotions not only counteract negative emotions, but also broaden individuals' habitual modes of thinking and build their personal resources for coping.[5] Meditation is among the oldest sciences with a holistic approach. The physiological pattern produced by meditation in the short and long run is generally one of lowered arousal, entirely consistent with the perspective that sees it as a relaxation technique. Meditation brings certain biochemical and physical changes in the body namely changes in metabolism, heart rate, respiration, blood pressure and brain chemistry, collectively referred to as the 'relaxation response.[6] Rajyoga meditation as taught in the Brahmakumaris World Spiritual University (also known as Prajapita Brahmakumaris Ishwariya Vishwa Vidyalaya) is a behavioural intervention with scientific, psychological, intellectual and spiritual process. It aims at establishing balance in head, heart and hand. It is the science and art of harmonising spiritual, mental and physical energy through the connection with the ultimate source of spiritual energy, the Supreme Soul for enjoying ever healthy, ever-wealthy and ever-happy life.[7] The present study was conducted to see the effect of Rajyoga meditation as complementary and alternative therapy along with the use of conventional mental health services, in anxiety and depression.

MATERIAL AND METHODS

The present study was carried out in the department of Psychiatry, Sri Guru Ram Das Institute of Medical Sciences & Research, Amritsar, India. The study was approved by the ethical committee of the institute. One hundred patients suffering from anxiety and depression aged 18–50 years were selected for study. All patients received appropriate pharmacotherapy by the consultant. The patients suffering from anxiety and depression were randomised to divide into two groups: On pharmacotherapy and meditation therapy (intervention group), and on only pharmacotherapy alone (control group). Assessment of all subjects was carried out by administering Hamilton anxiety scale (HAM-A)[8] and Hamilton rating scale for depression (HAM-D)[9] at baseline and after 6 weeks. Outpatients who completed the informed consent process received the Structured Clinical Interview for DSM-IV by the psychiatrist. Individuals 18 years or older were eligible if they met

DSM-IV criteria for current anxiety and depression. Exclusion criteria were the following:

a. A lifetime history of schizophrenia or any other psychosis, mental retardation, organic medical disorders, bipolar disorder, posttraumatic stress disorder, or obsessive-compulsive disorder
b. Alcohol or substance abuse or dependence within the past 6 months
c. Significant suicidal ideas or behaviours within the past 6 months
d. On a stable dose for <4 weeks, or unwilling to remain on that dose throughout the study, if on medication
e. Serious medical illness or instability concurrent psychotherapy directed toward anxiety and depression
f. More than 4 classes of meditation training and practice (including yoga and tai chi) in the past 2 years
g. Pregnancy or lactation
h. Significant personality disorder likely to interfere with study participation

Following randomization, psychological assessment of all patients was done to assess the severity of anxiety and depressive symptoms by applying HAM-A and HAM-D. All patients with clinical significant or non-significant anxiety or depressive symptoms were re-evaluated after 6 weeks; however, those with clinically non-significant anxiety and depressive symptoms were excluded from evaluation to see the effect of meditation in comparison to control group. The outcome measure tools were:

1. Hamilton anxiety scale (HAM-A): A 14-item scale to assess the severity of anxiety at baseline and during the follow-up
2. Hamilton rating scale for depression (HRSD, HAM-D): A 21-item observer-rated scale to assess the presence and severity of depressive states

Symptoms of anxiety and depression were assessed at baseline and week 6 (endpoint) with the Structured Interview Guide for HAM-A, and HAM-D. Patients were advised to do meditation for 20 minutes either in the morning or evening and to note about meditation practice in their daily diary. They were also given Brahmakumari's literature on positive thinking. The meditators were instructed to perform meditation for 20 minutes each day at their home for 6 weeks, were given followed by once a week interview for next 6 weeks during which 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.

Paired (dependent *t*-test) was used to test the mean difference of scores of HAM-A (anxiety) and HAM-D (depression) at baseline and after 6 weeks. The differences in pre- and post-treatment scores were used for the analysis. Student's independent sample *t*-test (parametric test) was used to compare the differences in scores between the two groups (yoga vs non-yoga group) which were normally distributed. Statistical analysis was done using GraphPadinStat-3.05.

RESULTS

There were 17 (34%) males and 33 (66%) females in Group 1 with mean age 34.12±9.05 years. In Group 2 there were 21 (42%) males and 29 (58%) females in Group 2 with mean age 33.68±10.78 years.

The patient with anxiety and depression in both groups showed significant improvement following 6 weeks of intervention as suggested by significant reduction in scores of HAM-A ($p<0.001$), and HAM-D ($p<0.001$). Further, the percentage reduction in HAM-D and HAM-A scores is significantly more in intervention group as compared to control group. The percentage relief of anxiety was 82.29% after 6 weeks in the intervention group. The control group also showed highly significant improvement in anxiety scores with medication alone but the percentage of improvement after 6 weeks was merely 29.83%. Percentage relief in depression was 75.51% in intervention group as compared to controls 29.17%. (Table-1).

Table-1: Changes in HAM-D & HAM-A scores after 6 weeks (Mean±SD) (n=50)

Parameter	Group 1	Group 2	*p* (Group 1 vs 2)
Anxiety			
Pre-test	20.58±5.93	19.70±3.42	0.365
Post-test	4.04±4.36	14.10±4.99	<0.001
% change	-82.29±20.17	-29.83±17.77	<0.001
***p* (Pre- vs Post-test)**	<0.001	<0.001	
Depression			
Pre-test	15.12±5.58	16.24±3.60	0.236
Post-test	3.72±3.25	11.66±4.19	<0.001
% change	-75.51±20.99	-29.17±18.46	<0.001
***p* (Pre- vs Post-test)**	<0.001	<0.001	

DISCUSSION

In this study, significant improvement was seen in subjects with anxiety after 6 weeks of meditation compared to controls. This analysis reflects that Rajyoga meditation plays a significant role in reducing anxiety in patients. Significant improvement in the anxiety following meditation and breathing exercises has been documented in earlier studies. Rajyoga meditation enhances positive thinking and provides happiness in life.[10,11] Studies have also reported reduction in anxiety state following muscle relaxation techniques and listening to soft music.[12] Meditation has been shown to have beneficial therapeutic effects on the symptoms of patients with depression and anxiety.[13] John Kabet Zinn *et al* 1992 showed that a group mindful meditation can effectively reduce symptoms of anxiety in patients suffering from generalised anxiety disorder.[14]

There were similar trends for depressive symptoms as well. Previous studies reported significant improvements on measures of stress and psychological outcomes (state and trait anxiety, well-being, vigor, fatigue, and depression) in women suffering from mental

distress after participating in a three-months 'Iyengar' yoga class.[15] Other studies have also reported similar findings and supported the finding of the current study regarding the effect of Yoga on anxiety and depressive symptoms.[16,17] Similar changes have been reported in a study after Vipassana meditation in Tihar Jail.[18]

Neuroimaging studies have shown that meditation results in an activation of the prefrontal cortex, activation of the thalamus and the inhibitory thalamic reticular nucleus and a resultant functional differentiation of the parietal lobe.[19] Meditation induced neurochemical changes can produce an anxiolytic effect. The factors decreasing anxiety during meditation are increased parasympathetic activity, decreased locus ceruleus firing with decreased noradrenaline, increased GABAergic drive and increased serotonin and decreased levels of the stress hormone cortisol. The increased levels of endorphins and AVP also contribute to the anxiolytic effects of meditation.[20]

Yoga can help a person to face situations in a relaxed state of mind. This is described as one of the quoted definitions of yoga, '*yogah karmasu kaushalam*' *in the Bhagavadgita*,[21] which means 'yoga is a special skill of action in relaxation'. This was observed with yoga practices in musicians that yoga and meditation may be beneficial as a routine practice to reduce performance anxiety in musicians.[22] Yoga practices prior to exams in medical students improved concentration, improved efficiency, increased attentiveness, and significant reduction in number of failures.[23]

Available reviews of a wide range of yoga practices suggest they can reduce the impact of exaggerated stress responses and may be helpful for both anxiety and depression. In this respect, yoga functions like other self-soothing techniques, such as meditation, relaxation, exercise, or even socializing with friends.

CONCLUSION

Rajyoga Meditation is a very appealing way to better manage symptoms of depression and anxiety. Yoga may serve as an effective substitute or accompaniment to biological treatments in anxiety and depression. Rajyoga meditation is found more effective and long lasting than the expensive drugs.

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