

Effect of Short Term Raj Yoga Meditation on Psychological Well Being in Young AdultsShalini Rastogi¹, Raj Kumar², Md Sabir Hussain³, Vichal Rastogi^{4*}¹Associate Professor, Department of Physiology, School of Medical Sciences and Research, Greater Noida, UP, India²Associate Professor, Department of Physiology, National Capital Region Institute of Medical Sciences, Meerut, UP, India³Assistant Professor, Department of Physiology, Mahatma Gandhi Medical College & Hospital, Jaipur, Rajasthan, India^{4*}Professor & Head, Department of Microbiology, National Capital Region Institute of Medical Sciences, Meerut, Uttar Pradesh, India

Received: 25-07-2023 / Revised: 28-08-2023 / Accepted: 20-09-2023

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Conflict of interest: Nil

Abstract:**Background:** Stress is a pervasive phenomenon experienced worldwide due to the current globalization of the world's economy and the increasing demands for improved performance. The occurrence of stressful life events, as well as the presence of anxiety and depression, has been found to have significant and adverse impacts on the physiological well-being of individuals. These effects can be both harmful and cumulative over time. The utilization of meditation as a potential method to alleviate stress should be considered.**Aims and objectives:** The primary objective of this study was to assess the efficacy of a group stress reduction programme that incorporates Raj yoga meditation as an intervention for individuals diagnosed with anxiety and depression.**Materials and Methods:** The research was done on a sample of 100 individuals diagnosed with co-morbid anxiety and depression, all of whom were prescribed a comparable pharmaceutical treatment regimen. The participants were randomly assigned to two groups: Meditators (n=60; mean age 34.12±9.05 years) and controls (n=50; mean age 33.68±10.78 years). The participants received instruction in Raj yoga meditation and engaged in a daily practice lasting 20 minutes, seven days a week, for a period of six weeks. The control group refrained from engaging in any form of meditation. The assessment of results was conducted with the Hamilton anxiety and depression measures.**Results:** The patients in both the intervention group and control group exhibited notable improvement in their symptoms of anxiety and depression after undergoing a six-week intervention. This improvement was evidenced by a substantial decrease in the scores of the Hamilton Anxiety Rating Scale (HAM-A) (p<0.001) and the Hamilton Depression Rating Scale (HAMD) (p<0.001). Nevertheless, the intervention group exhibited a higher proportion of relief in comparison to the control group.**Conclusion:** A brief intervention centered around yoga, as a lifestyle modification, has the potential to provide substantial reductions in anxiety and depression symptoms, while concurrently enhancing subjective well-being as well as personality traits.**Keywords:** Anxiety; Depression; Lifestyle; Raj yoga.This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

Anxiety and depression rank highly as prevalent disorders reported by those seeking therapy through complementary and alternative treatments. According to community surveys, individuals with mental conditions exhibit a higher prevalence of using these therapeutic interventions compared to the general population. This disparity may be attributed to the fact that tiredness, sleeplessness, chronic pain, anxiety, and depression are frequently cited as primary motivations for engaging in these

therapeutic modalities. [1-3] these tactics are effective in fostering happy emotions and are especially well-suited for the prevention and treatment of issues that originate from negative emotions. [4] Holistic modalities such as exercise, meditation, tai chi, qigong, and yoga are experiencing a growing surge in popularity for the treatment of emotional disorders. These tactics aim to maximize health and well-being by fostering the development of happy emotions. The cultivation of

good emotions serves to not only mitigate bad emotions, but also expand an individual's typical cognitive patterns and enhance their own coping mechanisms. [5] Meditation is considered one of the most ancient disciplines, characterized by its comprehensive approach. The physiological response elicited by meditation in both the short and long term is typically characterized by reduced arousal, aligning with the viewpoint that perceives it as a relaxation method. Meditation induces certain biochemical and physiological alterations inside the body, including modifications in metabolic processes, heart rate, respiratory patterns, blood pressure, and brain chemistry. These changes are sometimes denoted as the "relaxation response." [6]

The term 'Raj-Yoga' derives its meaning from the word 'Raja', which signifies a ruler, a sovereign, or the ultimate authority. The yoga practice referred to as Raj-Yoga derives its name from its status as the preeminent and most elevated form of yoga, distinguished by its authenticity and unparalleled efficacy. One further justification for designating it as 'Raj-Yoga' is from its primary association with the mind, which is seen as the governing entity that exercises control over the sensory organs and the physical body. The term 'Meditation' denotes the act of engaging in contemplation or deep thought. As commonly understood, the human mind is often preoccupied with numerous ideas pertaining to worldly matters. However, through the practice of Raj-Yoga meditation, individuals intentionally redirect their attention away from these worldly thoughts. In this context, the act of meditation may be seen as a deliberate retreat or reorientation of one's cognitive focus, shifting away from the physical body and its immediate surroundings towards the inner essence of the soul and its tranquil realm. Alternatively, it can also involve a departure from the gloomy corridors of pessimistic thoughts, redirecting one's attention towards the illuminated path of deep reflection on the divine. Raj-Yoga meditation can be described as a structured practice of mindfulness, incorporating cognitive processes such as creative thinking, intuitive perception, and silent contemplation. This practice focuses on the metaphysical aspects of self and God, aiming to foster understanding and realization of these concepts. This practice entails directing one's thoughts and channeling one's affection towards God, so establishing a strong connection to engage in communication with him. [7]

Aims and objectives:

The current research aimed to examine the impact of Raj yoga meditation as a supplementary and alternative therapeutic approach, in conjunction with traditional mental health care, on individuals experiencing symptoms of anxiety and depression.

Materials and Methods

The current investigation received approval from the institutional ethics committee. A sample of 100 individuals, ranging in age from 18 to 50 years, who were diagnosed with both anxiety and depression, was chosen for the research investigation. The expert administered suitable medication to all patients. The individuals diagnosed with anxiety and depression were randomly assigned to two groups: one receiving a combination of medication and meditation treatment (intervention group), and the other receiving only pharmacotherapy (control group). The evaluation of all individuals was conducted by the administration of the Hamilton Anxiety Scale (HAM-A) [8] and the Hamilton Rating Scale for Depression (HAM-D) [9] at the initial stage and after a period of 6 weeks. The Structured Clinical Interview for DSM-IV was administered to outpatients who had successfully through the informed consent process, under the supervision of a psychiatrist.

Inclusion criteria: Participants who were 18 years of age or older were considered eligible for inclusion in the study provided they satisfied the diagnostic criteria outlined in the DSM-IV for both anxiety and depression.

Exclusion criteria:

- Individuals with a lifelong history of schizophrenia or any other psychosis, mental retardation, organic medical diseases, bipolar disorder, posttraumatic stress disorder, or obsessive-compulsive disorder are included in the study population.
- Alcohol or drug misuse or dependency within the preceding 6-month period.
- Noteworthy instances of suicide ideation or behaviors occurring within the preceding 6-month period.
- Participants who have been on a consistent dosage for less than four weeks, or those who are reluctant to maintain that dosage for the duration of the research, in the case of medication usage.
- Serious medical sickness or instability may necessitate concomitant treatment targeting anxiety and depression.
- Over the course of the previous two years, the individual had engaged in meditation instruction and practice, encompassing a range of four or more sessions, which also incorporated yoga and tai chi
- Pregnancy or the period of breastfeeding.
- There is a high probability that a notable personality disorder may impede the individual's ability to engage in the study.

After the randomization process, a psychological examination was conducted on all patients in order

to evaluate the extent of anxiety and depression symptoms. This assessment was carried out using the Hamilton Anxiety Rating Scale (HAMA) and the Hamilton Depression Rating Scale (HAM-D). After a period of 6 weeks, a reassessment was conducted on all patients who exhibited either clinically significant or non-significant symptoms of anxiety or depression. However, those who displayed clinically non-significant symptoms were omitted from the evaluation in order to examine the impact of meditation in contrast to a control group.

The tools that were utilized to measure the outcome were:

1. The Hamilton Anxiety Scale (HAM-A) is a widely used tool for assessing anxiety levels in individuals. A scale consisting of 14 items was utilized to evaluate the level of anxiety intensity both at the beginning of the study and throughout the subsequent monitoring period.
2. The Hamilton Rating Scale for Depression (HRSD, HAMD) is a 21-item scale that is used by observers to evaluate the extent and intensity of depressive symptoms. Its purpose is to determine the existence and severity of depressed states.

The assessment of symptoms related to anxiety and depression was conducted at two time points: baseline and week 6 (endpoint). This assessment was carried out using the Structured Interview Guide for the Hamilton Anxiety Rating Scale (HAM-A) and the Hamilton Depression Rating Scale (HAM-D).

Patients were instructed to engage in a 20-minute meditation session either in the morning or evening, and were encouraged to record their meditation practice in a daily notebook. The participants were provided with instructions to engage in a daily 20-minute meditation practice at their place of residence for duration of 6 weeks. Additionally, they were scheduled for weekly interviews during the next 6 weeks, during which their adherence to the prescribed meditation technique was assessed and any inquiries regarding the methodology were addressed. During this period, the adherence of patients to the practice of meditation was also assessed.

Statistical analysis:

The paired (dependent t-test) statistical analysis method was employed to examine the mean difference between the scores of HAM-A (anxiety) and HAM-D (depression) at the baseline and after a period of 6 weeks. The study was conducted using the differences between pre- and post-treatment ratings. The researcher employed an independent sample t-test, a parametric test, to examine the disparities in scores between two groups: the yoga group and the non-yoga group. It was assumed that the results in both groups followed a normal distribution. The statistical analysis was conducted using GraphPadInStat-3.05.

Results:

In Group 1, the gender distribution consisted of 17 men, accounting for 34% of the group, and 33 females, accounting for 66% of the group. The mean age of the participants in Group 1 was 34.12 ± 9.05 years. Within Group 2, there were 21 individuals identified as men, constituting 42% of the total, while the remaining 29 individuals were identified as females, accounting for 58% of the total. The mean age of the participants in Group 2 was calculated to be 33.68 ± 10.78 years.

The individuals diagnosed with both anxiety and depression in both experimental groups shown notable progress after a period of six weeks of intervention, as evidenced by a substantial decrease in their HAM-A scores ($p < 0.001$) and HAM-D scores ($p < 0.001$). Moreover, the intervention group exhibited a considerably greater percentage reduction in HAM-D and HAM-A scores compared to the control group. After duration of 6 weeks, the intervention group exhibited a percentage reduction of anxiety up to 82.29%.

The control group likewise demonstrated a statistically significant reduction in anxiety levels when treated alone with medicine; however, the magnitude of change after a 6-week period was only 29.83%. The intervention group had a 75.51% reduction in depression, whereas the control group only saw a 29.17% decrease. (Table-1)

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

	Parameters	Group 1 (n=50)	Group 2 (n=50)	P-Value
Anxiety	Pre-test	20.58 \pm 5.93	19.70 \pm 3.42	0.365
	Post-test	4.04 \pm 4.36	14.10 \pm 4.99	<0.001
	% change	-82.29 \pm 20.17	-29.83 \pm 17.77	<0.001
	P-Value (Pre-test vs. Post-test)	<0.001	<0.001	
Depression	Pre-test	15.12 \pm 5.58	16.24 \pm 3.60	0.236
	Post-test	3.72 \pm 3.25	11.66 \pm 4.19	<0.001
	% change	-75.51 \pm 20.99	-29.17 \pm 18.46	<0.001
	P-Value (Pre-test vs. Post-test)	<0.001	<0.001	

Discussion

This study observed a notable enhancement in individuals with anxiety following a 6-week meditation intervention in comparison to the control group. The present investigation demonstrates that the practice of Raj yoga meditation has a noteworthy impact on the reduction of anxiety levels among patients. Previous research has revealed a notable amelioration in anxiety levels subsequent to the practice of meditation and engaging in breathing exercises. Raj yoga meditation is known to augment beneficial cognitive processes and contribute to overall life satisfaction. [10,11] Several studies have also documented a decrease in anxiety levels as a result of employing muscular relaxation techniques and engaging in the practice of listening to quiet music. [12] Research has demonstrated that meditation can yield advantageous therapeutic outcomes for those experiencing symptoms of despair and anxiety. [13]

In a study conducted by Zinn, J.K. and colleagues in 1992, it was demonstrated that a collective practice of mindful meditation can be efficacious in alleviating symptoms associated with anxiety among individuals diagnosed with generalized anxiety disorder. [14]

Similar patterns were seen in relation to depressed symptoms. Prior research has documented notable enhancements in stress levels and psychological well-being (including state and trait anxiety, well-being, vigor, weariness, and depression) among female individuals experiencing mental distress following their involvement in a three-month 'Iyengar' yoga programme. [15] Previous research has corroborated the present study's results and provided more evidence for the observed impact of Yoga on symptoms of anxiety and depression. [16,17]

A research conducted at Tihar Jail has documented comparable alterations resulting from the use of Vipassana meditation. [18] Neuro-imaging research has demonstrated that meditation induces increased activity in the prefrontal cortex, as well as activation of the thalamus and the inhibitory thalamic reticular nucleus. Consequently, this leads to functional differentiation of the parietal lobe. [19] The neuro-chemical alterations caused by meditation have the potential to have an anxiolytic effect.

The anxiety-reducing effects observed during meditation can be attributed to several causes, including heightened parasympathetic activity; reduced firing of the locus ceruleus accompanied by lower nor-adrenaline levels, enhanced GABAergic drive, elevated serotonin levels, and decreased secretion of the stress hormone cortisol.

The elevation in endorphin and AVP levels also contributes to the anxiolytic properties of meditation. [20] The practice of yoga has been found to facilitate a state of mental relaxation, enabling individuals to effectively navigate various situations. One of the cited definitions of yoga, as stated in the Bhagavadgita, [21] is "yogah karmasu kaushalam," which may be interpreted as "yoga is a specialized proficiency in performing actions with a state of relaxation." The present study examined the potential benefits of incorporating yoga and meditation as regular practices to alleviate performance anxiety among musicians. [22] According to a study conducted on medical students, engaging in yoga practices before tests was found to have several positive effects. These effects included enhanced attention, higher efficiency, increased attentiveness, and a notable decrease in the occurrence of failures. [23]

The existing literature on various yoga practices indicates that they have the potential to mitigate the effects of heightened stress reactions and might potentially offer benefits for individuals experiencing symptoms of anxiety and depression. In this regard, yoga operates similarly to other self-regulatory strategies, including meditation, relaxation methods, physical activity, and social interaction.

Conclusion

Raj Yoga Meditation presents itself as an attractive approach for effectively addressing symptoms associated with sadness and anxiety. Yoga has the potential to be a viable alternative or adjunct to pharmacological interventions for those experiencing symptoms of anxiety and depression. Raj yoga meditation has been observed to have greater efficacy and durability in comparison to costly pharmaceutical interventions.

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