Efficacy of Mind Sound Resonance Technique [MSRT] on Anxiety among Young Male Adults - A Randomized Controlled Trial

Joychand Singh¹, Archana K², Anupritha A Shetty³, Babbychand Bash⁴, Geetarani Devi⁵

¹Post Graduate Scholar, Department of Yoga, Alva’s College of Naturopathy and Yogic Sciences, Moodabidri, Mangaluru, Dakshina Kannada, Karnataka, India.
²Professor, Department of Yoga, Alva’s College of Naturopathy and Yogic Sciences, Moodabidri, Dakshina Kannada, Karnataka, India.
³Assistant Professor, Department of Yoga, Alva’s College of Naturopathy and Yogic Sciences, Moodabidri, Dakshina Kannada, Karnataka, India.
⁴,⁵Post Graduate Scholar, Department of Clinical Yoga, Alva’s College of Naturopathy and Yogic Sciences, Moodabidri, Mangaluru, Dakshina Kannada, Karnataka, India.

ABSTRACT

Background and Objectives: Anxiety disorder is a most common psychiatric disorder. Mind Sound Resonance Technique [MSRT] was developed using the concepts found in ancient writings that discuss the influence of Nadanusandhana [HathaYoga Pradipika] and Om [Mandukya Upanishad] in gaining internal control over mental changes. Mind Sound Resonance Technique was found to be beneficial in the management of anxiety. Therefore, the purpose of this study was to evaluate how mind sound resonance therapy affects anxiety disorder. Materials and Methods: 60 male participants between the ages of 18 to 30 were enrolled, and they were split into study and control groups at random. STAI Y1 & STAI Y2, DASS were assessed before and after 8 weeks of intervention. All the details of the study were explained and informed consent was obtained from the subjects. Result: Result suggested that experimental group demonstrated state anxiety [STAI-Y1] [p≤0.05], trait anxiety [STAI-Y2] [p≤0.05], depression [p≤0.05], anxiety [p≤0.05], and stress [p≤0.05] scores all significantly decreased. Interestingly in the control group a notable rise in trait anxiety was seen [STAI-Y2] [p ≤ 0.05] and a similar but less extent of reduction in scores on the DASS for depression [p≤0.05], anxiety [p≤0.05], and stress [p≤0.05]. Conclusion/Discussion: The current investigation found that using the Mind sound resonance approach for 8 weeks on Anxiety subjects has shown to be significantly reduce in State Anxiety scores [STAI-Y1], Trait anxiety [STAI-Y2], DASS- Depression Anxiety Stress scores.

Key words: Anxiety, Mind sound resonance technique, Yoga, Meditation.

INTRODUCTION

An ordinary response to a stressful circumstance is anxiety. It may be present by itself or in conjunction with other signs of different emotional illnesses. Anxiety may result from external factors, repressed feelings, and physical symptoms.[¹] A high burden of sickness is connected with the most common mental disorders, including separation anxiety disorder, generalized anxiety disorder, social anxiety disorder, and panic disorder with or without agoraphobia.[²] Around the world, anxiety disorders were more common in some areas than others. The highest-income areas were found in Western Europe and North America, as well as Latin America and the Caribbean. The regions with the lowest rates of anxiety disorders were sub-Saharan Africa and South Asia.[³] Three sizable meta-analyses of Indian epidemiological studies on psychiatry have been conducted. In their meta-analysis of 13 studies, Reddy and Chandrashekhar included only phobia and GAD as anxiety disorders based on the current DSM-5 criteria, which weighted prevalence values of 4.2% and 5.8%. Out of 33,572 individuals with a neurotic diagnosis, the estimated
disease prevalence is the highest, at 20.7% [18.7% - 22.7%]. In a second meta-analysis carried out by Ganguli in 2000, 15 epidemiological studies were examined, and it was found that urban communities were more common [35.7% vs. 13.9%; P < 0.01] than rural communities. Anxiety was found to be prevalent in 16.5 thousand individuals, with a somewhat higher incidence in urban settings compared to rural ones [106:100]. Nevertheless, in this meta-analysis, anxiety neurosis was discussed in general terms without referring to any particular illnesses. Ten papers were added in a third meta-analysis, which found a comparable prevalence of anxiety neurosis [18.5 per thousand people]. These results appear consistent with research conducted in different nations in a world where the global frequency is estimated to be 7.3%, with current estimates ranging from 0.9 to 28.3 percent in 44 countries.[4] ACEs, or adverse childhood experiences, include maltreatment, neglect, and dysfunctional households, are regarded to be forms of negative exposure that have an effect on a child’s development and mental health issues.[5] Young adults with psychological illnesses, substance addiction issues, and court involvement are more likely to have had one or more [ACEs] as children. Specific phobias were the second most common anxiety condition after social anxiety disorder, with a frequency of 14.1%. Yoga should be interwoven into daily activities because it is the science of moral life. It has an impact on one’s physical, psychological, emotional, psychical, and spiritual health. Yoga, which signifies union or oneness, finds its roots the Sanskrit term Yuj, which signifies unification. This is accomplished by the use of Asana, Pranayama, Mudra, Bandha, Shatkarma, and meditation.[6] The WHO defines health as a condition of whole physical, mental, and social well-being rather than just the absence of illness or disability. A person’s existence has five layers, according to the Upanishads and the Yogic tradition. Annamaya Kosha for physical health, Pranamaya Kosha for vital health Manomaya Kosha stands for mental health, Vijnaanamaya Kosha for spiritual health, and Anandamaya Kosha, also known as the happiness sheath.[7] The MSRT session’s approach was modified from the text "mind sound resonance technique." It is the most sophisticated guided yoga relaxation methods that can be utilized to attain the objectives of good health, willpower, focus and deep relaxation is the mind sound resonance technique [MSRT][8] The first line of treatment for anxiety disorders is pharmacological, including antidepressant medications like Benzodiazepines, beta blockers, serotonin norepinephrine reuptake inhibitors [SNRIs], selective serotonin reuptake inhibitors [SSRIs], and Azapirones. For patients with severe anxiety who need medication, even pharmacotherapy in conjunction with psychotherapy should be thought of as a first line method and treatment. The most common side effects of pharmaceutical treatment include nausea, diarrhoea, headaches, sleeplessness, and restlessness.[9] Though there are pharmacological treatment available to manage anxiety disorder. Yoga is now accepted as a supplemental therapy for anxiety disorders [ADs] by researchers and clinicians. Hence present was study aimed to evaluate the efficacy of MSRT on Anxiety among young male adults.

Aims and Objectives
The objectives and aims of this study were to assess the efficacy of Mind sound resonance technique on anxiety among young male adults.

To evaluate the effect of Mind sound resonance technique on anxiety among young male adults
1. Anxiety
2. Associated Symptom

Materials and Methods
This is a randomized controlled trial pre-post-study design. It was conducted in Alvas College of Naturopathy and Yogic Sciences, Moodbidri, Mangaluru, Dakshina Kannada, Karnataka. After obtaining a legally signed written consent, participants of the male genders, age 18 to 30, who were diagnosed with Anxiety according to the [DSM-IV] criteria for Anxiety and were willing to participate, joined the study. Subjects with any pre diagnosed clinical illness, taking psychological drugs; tobacco, alcohol smoking and practicing meditation or any yogic practices in the past 6 months were excluded. 60 people were chosen
according to the inclusion and exclusion criteria for the research. The illustration of study plan is shown in figure 1. Alvas College of Naturopathy and Yogic Sciences' ethical committee authorized the study.

**Ethical Considerations**

Individuals who met the requirements for inclusion were given an information sheet with specifics on the type of study and the intervention that would be used. The subjects had ample opportunity to review the study facts listed on the information sheet. Only after agreeing to take part in the study and signing an informed consent form where they given the chance to ask any questions. By providing signed informed consent, all participants indicated their desire to take part in the study. The Institutional Ethical Committee has given the approval for the project with the ethical clearance registration certified no. ACNYS/IECHS/2021/66

**CTRI Registration number- CTRI/2022/11/047430**

**Assessments**

Baseline and post assessment were done from both groups using the following assessment tools:

**Depression Anxiety Stress Scale [DASS]:** The 42-item Depression, Anxiety, and Stress Scale [DASS] comprises three self-report measures intended to gauge the depressive, anxious, and stressed negative emotional states. 14 items total, broken down into subscales of 2–5 items each with comparable content make up each of the three scales. The Depression Scale measures lethargy, anhedonia, dysphoria, hopelessness, life devaluation, self-deprecation, and lack of interest or involvement. Autonomic arousal, skeletal muscle effects, situational anxiety, and the subjective perception of anxious affect are all measured by the Anxiety Scale. Arousal levels that are persistent and non-specific can be measured using the Stress scale [items]. It evaluates nervous arousal, inability to relax, irritability/over-reactivity, and impatience as well as ease of getting upset or agitated. Respondents are asked to rate how much they have experienced each state during the past week on a 4-point severity/frequency scale. \[10\]

**Spielberger’s state trait anxiety inventory [STAI Y-1]:** The subject of this well-known and validated self-report measure responds to twenty questions in each subset on a scale from 1 [not at all] to 4 [very much so]. The items are divided into two categories: one for state anxiety and another for trait anxiety.

**Spielberger’s state trait anxiety inventory [STAI Y - 2]:** This is a reliable and valid self-report tool that includes a subset of items for trait anxiety and a subject with items for state anxiety. In each subgroup, the respondent responds to twenty questions on a scale of 1 [Almost never] to 4 [Almost usually]. \[11\]

**Figure 1: Illustration of study plan**

**Interventions**

**MIND SOUND RESONANCE TECHNIQUE [MSRT]**

1. **Prayer**

   Om Tryambakam Yajamahe Sugandhim

   Pustivardhanam, Urvarukamiva Bandhanat
Mrityormukiya Mamṛṭāt | Om Santih Sántih Sántih | |
Om, we give thanks to the three-eyed lord [Śiva] for enhancing our life force and aroma; for rescuing us from the shackles of death as naturally as a ripe cucumber from its creeper.

2. a] A, U, M, and AUM chanted aloud three times. Experience total body resonance.
   b] A-, U-, M-AUM the following time, and Ahata - Anahata of A, U, M, and AUM [3 rounds].

3. Even during the Anahata [mental] phase, experience resonance.
   a] Loud chanting of Mrityunjay Mantra [MM]
   Om Trayambakam Yajamahe Sugandhīm
Pustivardhanam, Urvārakamiva Bandhanat
Mrtyormukṣiya Mamṛṭāt | Om Sántih Sántih Sántih | |
Three cycles throughout the body, notice the resonant wave pattern.

b] Anahata -Ahata of Mrtyunjaya Mantra’s three rounds: MM-, MM-, MM- Even in the Anahata phase, you can feel the resonance wave pattern.

4. AUM Anahata [9 rounds]
Recite AUM aloud while sensing the body's resonance vibrations.

5. Nine rounds of Ajapājapa AUM to SILENCE. Sensate the OM’s resonant waves rising, travelling throughout your body, and then dissipating into silence [9 rounds]

6. Remain silent.

7. Conclude

8. Prayer

Sarve Bhavantu Sukhinah
Sarve Santu Nirāmāyāḥ
Sarve Bhadrāni Paśyantu
Ma Kaścit Duhkha Bhagbhavet
Om Santih Santih Santih

Let all be happy

Let all be without disease let all realize the self
Let none be miserable Om Peace Peace Peace.[8]

Data analysis

The data was visually inspected for manual typographic errors. The data was found to be regularly distributed by the Shapiro-Wilk test for normality. The paired samples t-test was employed to evaluate differences within the groups. ANCOVA was performed to assess between group changes controlled for their respective baseline values. Levene’s test for equality of variances were performed.

RESULTS

Analysis for within group changes in the experimental group showed a substantial decrease in the state anxiety [STAI-Y1], trait anxiety [STAI-Y2], depression [p≤0.05], anxiety [p≤0.05], and stress [p≤0.05] scores on the DASS. Interestingly in the control group, the trait anxiety index [STAI-Y2] increased significantly [p≤0.05].and a similar but less extent of reduction in scores on the DASS for depression [p≤0.05], anxiety [p≤0.05], and stress [p≤0.05].Between group differences assessed using Analysis of covariance for variables of interest, adjusted for their respective baseline values indicated a significant difference in all the variables of interest: State Anxiety STAI-Y1 [F[1, 53]= 237.92, p≤0.05, pƞ² = 0.818], Trait Anxiety STAI-Y2 [F[1, 53]= 289.18, p≤0.05, pƞ² = 0.845], DASS Depression scores [F[1, 53]= 142.82, p≤0.05, pƞ² = 0.729], DASS Anxiety [F[1, 53]= 210.15, p≤0.05, pƞ² = 0.799] and DASS Stress [F[1, 53]= 172.44, p≤0.05, pƞ² = 0.764]

Table 1: Table representing the values of STAI scores & DASS score in Mean ± SD before and after the intervention.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre [Mean ± SD]</td>
<td>Post [Mean ± SD]</td>
</tr>
<tr>
<td>STAI-Y1</td>
<td>55.81±9.95</td>
<td>51.15±9.7</td>
</tr>
<tr>
<td>STAI-Y2</td>
<td></td>
<td></td>
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<tr>
<td>DASS Depression</td>
<td></td>
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<tr>
<td>DASS Anxiety</td>
<td></td>
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<tr>
<td>DASS Stress</td>
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</tbody>
</table>
Table mentioning the results of within and between group comparisons through paired samples t-test and analysis of covariance and the average [Mean ± SD] values of the assessments a) within group comparisons using paired t-test, level of significance p≤0.05. b) Between group comparisons using Analysis of covariance adjusted for baseline values, level of significance p≤0.05 [p≤0.05]

Figure 2: Graph showing in between pre and post intervention and control of STAI Y1

Figure 3: Graph showing in between group changes pre and post intervention and control of STAI Y2

Figure 4: Graph showing in between group changes pre and post intervention and control of Depression

Figure 5: Graph showing in between group changes pre and post intervention and control of Anxiety

Figure 6: Graph showing in between group changes pre and post intervention and control of Stress

**Discussion**

The current study examined the effectiveness of Mind sound resonance technique [MSRT] following 8-week intervention in the management of Anxiety among young male adults. The findings suggested that intervention is effective. Results suggested significant reduction in the mean score pre vs post in intervention group.
Anxiety is a reaction to erroneous beliefs about oneself, other people and the world. Although they come from different places, fear and anxiety have similar physiological pathways and expressions. Among the most prevalent mental diseases seen in routine clinical settings are anxiety disorders [ADs].

Earlier studies reported that Yoga is now accepted as a supplemental therapy for ADs by researchers and clinicians. Asana, Pranayama and meditation are the three main components of yoga-based interventions, which are becoming more and more popular all over the world. In support to the results of the present research activity a previous study of MSRT intervention show significant reduction in anxiety via enhancing autonomic processes by activating neurohormonal mechanisms that reduce the ability of the hypothalamic-pituitary-adrenal axis to stimulate sympathetic activity, which may be the mechanism at work in the current investigation. Another finding suggests MSRT reduced sympathetic activity, such as slow breathing, is linked to a drop in blood pressure and heart rate [HR] by inhibiting the activity of the hypothalamus-pituitary adrenal gland [HPA] axis. The brain region known as the amygdala, which controls the fear and anxiety response, is linked to a reduced HPA axis. A study designed to track the consequences of a 1-month MSRT intervention with the state and trait anxiety, sleep quality, perceived stress and cognitive function among female teachers. The result shows that stress, anxiety, weariness and psychological discomfort were all reduced as a result of MSRT. A study on Sixty students whose age ranged from 14 to 16 years old took part in comparative study in which the control group underwent two weeks of supine rest [SR] and the experimental group received two weeks of MSRT. Results shows that MSRT has beneficial impact than supine rest [SR] in enhancing children’s psychosocial and cognitive functions. Another study was suggested to assess how MSRT affects IT professionals’ anxiety, mood, and sleep quality. For a month, the participants had three sessions of 45 minutes each week of MSRT intervention. In comparison to baseline, there was a significant improvement in mood disturbance [84% decrease], sleep quality [56% improvement], state anxiety [23% decrease], trait anxiety [19% decrease], and sleep quality [19% decrease] following one month of MSRT practise. This suggests the potential of MSRT intervention in enhancing mental health and sleep quality.

In 15 [seven male and seven female] right-handed generalised anxiety disorder [GAD] patients, Vipin Dhansoa et al. compared the immediate effects of mind sound resonance technique [MSRT] with supine rest [SR] on state anxiety and psychomotor performance. As compared with baseline, state trait anxiety inventory [STAI] scores decreased and Digit letter substitution test [DLST] scores significantly improved. According to this pilot investigation, MSRT may also have an immediate positive impact on state anxiety and improve psychomotor function in GAD patients. The method by which MSRT reduces anxiety has been demonstrated to involve enhancing autonomic functioning through the activation of neurohormonal mechanisms that inhibit sympathetic activity and the hypothalamic-pituitary-adrenal axis. This additionally aids in reducing anxiety and enhancing sleep quality. A study on MSRT intervention improved the reduction of pain, discomfort, impairment and anxiety state in individuals with chronic neck pain. The researcher intended to employ the MSRT technique to enhance the quality of sleep in the older population in light of the beneficial effects of yoga in lowering anxiety and physiological changes.

The study looked at how the technique of mind sound resonance, employed in conjunction with yoga therapy, affected individuals with chronic musculoskeletal pain’s levels of sleep quality, pain, stress, and anxiety. Yoga and MSRT may improve autonomic functions by inducing neurohormonal mechanisms that down-regulate the hypothalamic-pituitary-adrenal axis, hence reducing sympathetic activity. This is the most likely course of action. By improving cognitive flexibility, mindfulness-based practises may help people feel less stressed, anxious, and uncomfortable. The results demonstrate a significant reduction in pain, tension, and state anxiety as well as an improvement in sleep quality.
According to the result of current study MSRT showed significant reduction in STAI and DASS scores. With reference to earlier studies, the current study shows that MSRT decreases anxiety by enhancing autonomic processes through the activation of neurohormonal systems that reduce the regulation of the hypothalamic-pituitary-adrenal axis, hence suppressing sympathetic activity. As the prevalence shows that anxiety has been the most common mental health issue faced by young male adults. Hence MSRT has therapeutic benefits on anxiety disorders in young male adults.

**CONCLUSION**

The current investigation found that using the Mind Sound Resonance Technique for 8 weeks in anxiety subjects has shown to bring a positive influence in reducing anxiety. Hence Mind sound resonance technique can be considered as one of the safest alternative therapies for the management of anxiety disorders.

**Limitations and Future directions of study**

The study’s limited sample size is one of its shortcomings. There were dropouts in both study and control groups. Shorter follow-up compared to previous studies may have limited the magnitude of benefit reported. Hence, more studies with larger samples and longer follow-up periods are possible, but they will need to include better objective variables to supplement the benefits of this one that have been revealed.

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