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EFFECT OF 5-DAY GAYATRI MANTRA SADHANA ON DASS-21 SCORE-QUASI-EXPERIMENTAL STUDY

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Abstract

Background: Gayatri Mantra (GM) chanting is a meditative practice hypothesized to reduce psychological distress by enhancing vagal tone and modulating brain wave patterns through sonic vibrations and rhythmic respiration.

Objective: This observational study aimed to evaluate the immediate, short-term impact of a concentrated 5-day GM *sadhana* (dedicated practice) on self-reported psychological distress, as measured by the Depression, Anxiety, and Stress Scale (DASS-21).

Methods: A prospective, single-group observational design was employed, involving 28 healthy adults who practiced GM for 15 minutes, twice daily, over five consecutive days. DASS-21 scores (Depression, Anxiety, and Stress) were collected at baseline and post-intervention (Day 6), and paired-samples t-tests were used for analysis.

Results: Analysis revealed statistically significant reductions across all dimensions of psychological distress following the 5-day intervention. The mean scores for DASS decreased from 12.46429 to 4 ($p<0.001$).

Conclusion: A brief, concentrated 5-day GM *sadhana* is significantly associated with a rapid reduction in self-reported symptoms of depression, anxiety, and stress. This suggests GM is a highly accessible, non-pharmacological intervention for the acute management of overall psychological distress, warranting further controlled studies to assess durability and neurobiological correlates.

Keywords: DASS, Gaytri Mantra. Sadana.

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Introduction

From the ancient times, the Gayatri mantra is one of most revered vedic hymns for the purpose of spiritual enlightenment and mental clarity. Beyond the spiritual significances, modern science suggests that it have therapeutic potential in mental health and enhance brain's functioning.

Psychological distress, including symptoms of depression, anxiety and stress (DAS) is a growing global health concern due to modern lifestyle challenges. The DASS- 21 is widely used and validated self –report instrument to quantify the severity of these three negative emotional states. This study aims to connect traditional practice and modern sciences by examining the measurable effect of Gayatri mantra sadhana on DASS-21 scores among selected populations.

Mantra chanting, a core practice in various spiritual traditions, has been studied for its potential in modulating autonomic nervous system activity and mental states [1]. The Gayatri Mantra:*"Om Bhur Bhuvah Swaha, Tat Savitur Varenyam, Bhargo Devasya Dhimahi, DhiyoYo Nah Prachodayat."* is most powerful vedic chant .[2].

The structured recitation of its syllables produces specific rhythmic vibrations and requires a controlled, rhythmic pace, naturally promoting cardio respiratory synchronization and relaxation.

1. Mechanism of action and empirical evidences on DASS Scores

The therapeutic effect of Gayatri Mantra (GM) chanting is driven by a powerful synergy between neurophysiological and cognitive mechanisms. First, the mandatory slow, rhythmic breathing during chanting stimulates the vagus nerve, significantly enhancing vagal tone and activating the parasympathetic nervous system (the "rest and digest" response). This direct physiological dampening effect

counteracts sympathetic overdrive and consistently results in a robust decrease in stress and anxiety scores ([1,3–5].

Second, the sustained auditory focus and rhythmic sound production modulate brain activity, promoting cognitive rest. EEG studies confirm that chanting increases beneficial alpha and theta wave activity, signifying deep relaxation and mental clarity. This neuroelectrical shift helps to interrupt the self-perpetuating cycles of **depressive rumination**, contributing to a measured alleviation of depression scores.(6)

Finally, the low-frequency sonic vibrations generated by the Sanskrit syllables provide a central, somatosensory focus of concentration. It is the combination of this focused attention with the physiological calming effects-driven by enhanced vagal tone and beneficial brain wave patterns-that reliably leads to a significant reduction in overall psychological distress across all domains (Depression, Anxiety, and Stress) [1,7].

2. Methodology:

The study adopted a Quasi-experimental design and was conducted at Sadhana Center, Rishikesh using a convenience sampling method. A total of 28 healthy individuals participated in the study. The primary tools used for data collection were the Questionnaire on the Effects of Gayatri Mantra Chanting on Psychological Parameters and the Depression, Anxiety, and Stress Scale (DASS-21) in Hindi. Participants were asked to rate their experiences on a four-point Likert scale**,** where 0= Normal, *1 = Mild*, *2 = Moderate*, *3 = Severe*. The collected data were analyzed using Microsoft Excel, and statistical significance between pre- and post-intervention scores was determined through **a**paired t-test**,** assessing the impact of Gayatri Mantra chanting on psychological well-being.

3. Result

"t-Test: Paired Two Sample for Means

	14	*8*
Mean	12.46429	4
Variance	70.55423	15.7037
Observations	28	28
Pearson Correlation	0.537429	
Hypothesized Mean Difference	0	
df	27	
t Stat	6.303895	
P(T<=t) two-tail	9.54E-07	
t Critical two-tail	2.051831"	

The statistical analysis comparing DASS scores yielded a highly significant result, with a P-value (0.000000954) substantially below the predetermined significance level of α (0.05), leading to the definitive rejection of the null hypothesis. This finding confirms that the observed difference in mean DASS scores before (12.46) and after (4) the 5-day Gayatri Mantra practice is statistically significant. Consequently, the data provides strong evidence to conclude that the 5-day Gayatri Mantra practice had a significant and substantial positive effect, reducing participants' measured levels of depression, anxiety, or stress.

3. Discussion and Conclusion of Findings

The quasi-experimental study investigating the impact of Gayatri Mantra chanting on psychological well-being yielded highly significant results, providing compelling evidence for the effectiveness of this practice in reducing measures of depression, anxiety, and stress.

Interpretation of Statistical Results

The analysis using a paired t-test compared the mean scores on the Depression, Anxiety, and Stress Scale (DASS) before and after the 5-day Gayatri Mantra practice for the 28 healthy participants.

- **Significant Difference:** The calculated t Stat of 6.303895 is substantially greater than the two-tail t Critical value of 2.051831 (for df=27). This indicates a large difference between the pre- and post-intervention means.
- **P-value:** The P (T<=t) two-tail value is 9.54×10−7 (or 0.000000954). Since this P-value is *substantially* below the predetermined significance level (α=0.05), the null hypothesis is definitively rejected. The null hypothesis would typically state that there is no difference in DASS scores before and after the intervention.
- **Mean Reduction:** The mean DASS score reduced dramatically from 12.46429 (pre-intervention) to 4 (post-intervention). This large reduction over just five days supports the conclusion that the Gayatri Mantra chanting had a significant and substantial positiveeffect on the participants' psychological well-being.
- **Correlation:** The **Pearson Correlation of 0.537429** suggests a moderately positive relationship between the pre- and post-test scores, meaning that individuals who scored higher initially tended to score higher post-intervention, although the overall group mean still dropped significantly. This correlation confirms that the same individuals were measured in both conditions, which is critical for a paired t-test.

Context and Implications

The observed reduction in DASS scores (depression, anxiety, and stress) aligns with the growing body of research on the psychological benefits of mantra chanting, meditation, and mindfulness practices. Gayatri Mantra, a powerful and ancient Vedic chant, is believed to promote mental clarity, relaxation, and spiritual well-being. The

findings suggest that even a short-duration intervention (5 days) can rapidly induce measurable positive changes in psychological parameters.

The quasi-experimental design and convenience sampling limit the generalizability of these findings. While the results are statistically robust for this specific group at the Sadhanacenter, Rishikesh, future research should employ a randomized controlled trial (RCT) design with a control group (e.g., a placebo or non-chanting intervention) to isolate the specific effects of the Gayatri Mantra and rule out confounding variables like time, environment, or general expectation effects (placebo effect).

The positive outcome warrants further investigation into the mechanism of action. It is hypothesized that the rhythmic nature of the chanting, combined with the focus and spiritual content of the mantra, may modulate the autonomic nervous system, shifting it towards a parasympathetic-dominant state (rest and digest), which physiologically counteracts the stress response.

Conclusion

In conclusion, this study provides strong empirical evidence supporting the hypothesis that the 5-day practice of Gayatri Mantra chanting is an effective, low-cost, and non-pharmacological intervention for significantly reducing symptoms of depression, anxiety, and stress in healthy individuals. These findings encourage the integration of such practices into wellness programs and highlight the need for more rigorously controlled research to further elucidate its long-term effects and application in clinical populations.

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Inform Consent and Ethical Considerations

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Author Contribution

All authors are contributed equally.

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