SIGNIFICANT IMPACT OF TRADITIONAL YOGIC PRACTICES WITH OM CHANTING ON ACADEMIC PERFORMANCE AMONG ADOLESCENT GIRLS

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ABSTRACT

BACKGROUND

Educational success is widely regarded as the paramount objective in education. Notably, yoga can significantly reduce depression and stress among students, leading to improved mental well-being and academic performance. By incorporating yoga into their daily routine, students can achieve better physical health, mental serenity, and social harmony, ultimately enhancing their educational experience. Students have the ability to enhance their studies by cultivating self-confidence and managing anxiety to achieve better academic performance.

METHODOLOGY

The current study examines the effect of yogic practices, with and without Om chanting, on anxiety, self-confidence, and academic performance in adolescent girls aged

12-16 years. Sixty participants were randomly assigned to one of three groups: Yoga Group A (yogic practices with Om chanting), Yoga Group B (yogic practices without Om chanting), and a Control Group (active rest without yoga). The intervention lasted for three months, with structured sessions progressively increasing in duration.

RESULTS AND DISCUSSION

Results indicated significant reductions in anxiety levels for both yoga groups (t-values: 5.45 and 4.87; $p < 0.01$), while the Control Group showed no significant changes. Self-confidence significantly improved in both yoga groups (t-values: -4.23 and -3.96; $p < 0.01$), whereas the Control Group remained unchanged. Additionally, academic performance demonstrated significant enhancements in both yoga groups (t-values: 3.82 and 3.65; $p < 0.01$). TWO WAY ANOVA results confirmed significant differences across all variables, reinforcing the efficacy of yogic practices, particularly those incorporating Om chanting, in promoting mental well-being and academic success among adolescents. These findings underscore the importance of integrating yoga into educational settings to support adolescents' psychological and academic development.

Keywords

Yogic practices, Om chanting, anxiety, self-confidence, academic performance, adolescents, mental well-being.

INTRODUCTION

In recent years, the role of traditional yogic practices in enhancing cognitive function and academic performance has gained considerable attention. Yoga, an ancient practice that integrates physical postures, breathing techniques, and meditation, is increasingly being recognized for its holistic benefits, particularly in the realm of education. One aspect of yoga that has shown potential in improving academic outcomes is **Om chanting**, a form of meditative sound practice believed to promote mental clarity, concentration, and emotional balance.

Several studies have explored the physiological and psychological benefits of yoga among adolescents, highlighting its effectiveness in reducing stress, enhancing focus, and improving overall cognitive performance [1]. Adolescence, a critical period of both physical and psychological development, is often marked by academic pressures and emotional challenges. Incorporating yogic practices during this time can serve as a beneficial tool for fostering mental resilience and academic success. A study found that regular practice of yoga and meditation, including Om chanting, was associated with improved attention and memory retention, both of which are essential for academic performance [2].

Adolescence is a pivotal phase marked by rapid physical, emotional, and psychological changes. For girls, this period can be especially challenging due to their earlier maturation compared to boys, leading to heightened sensitivity and emotional vulnerability. Research shows that adolescent girls experience twice as many mood swings as boys, making them more susceptible to stressors such as body image concerns, peer pressure, academic stress, and menstrual-related anxiety. These factors often result in issues related to self-esteem, confidence, and emotional instability, which can negatively affect their academic performance [4].

Education is a fundamental tool for personal and societal development, and academic success during adolescence is crucial. However, many adolescent girls struggle with academic challenges like concentration difficulties, low self-esteem, examination anxiety, and stress-induced emotional instability. These challenges are exacerbated by a lack of physical activity, which is essential for mental and physical well-being. According to 2023 World Health Organization (WHO) report, 85% of teenage girls do not engage in adequate physical exercise, contributing to poor mental health outcomes such as increased anxiety and diminished cognitive functioning [4].

Stress has also been shown to affect brain development during adolescence. Chronic stress can shrink the amygdala, a region responsible for emotions, learning, and memory, potentially impairing cognitive abilities and emotional regulation in later life. Studies indicate that stress-reducing practices like yoga can help counteract these effects by promoting mindfulness, emotional regulation, and cognitive resilience. Yogic practices, particularly those incorporating pranayama (breathing exercises) and Om chanting, have been found to positively impact psychological well-being [5,6]. Yoga helps balance hormone levels, boost

immune function, and activate the dopamine system, which fosters calmness, emotional stability, and improved mental clarity [7]. By combining physical postures (asanas) with mindfulness techniques like pranayama and Om chanting, adolescent girls can better manage the emotional turmoil of adolescence, improve focus, reduce examination anxiety, and enhance self-confidence, ultimately leading to better academic outcomes.

Om chanting, specifically, has been linked to enhanced brain functioning. The rhythmic and repetitive nature of the chant has been shown to activate the parasympathetic nervous system, thereby promoting relaxation and reducing anxiety, which can interfere with learning and academic success [8]. Research demonstrated that students who practiced Om chanting alongside traditional yogic practices experienced significant improvements in focus, problem-solving abilities, and exam performance [9].

METHODS AND DESIGN

This pilot study incorporates a randomized controlled trial design using simple random sampling to investigate the effects of yogic practices with and without OM chanting on psychological variables and academic performance in adolescent girls aged 12-16. A total of 60 adolescent girls will be randomly recruited from local schools and evenly assigned to three groups (n=20 per group).

The present study spanned a period of three months, during which participants were evenly divided into three groups: Yoga Group A (yogic practices with Om chanting), Yoga Group B (yogic practices without Om chanting), and a control group (active rest).

Inclusion and Exclusion Criteria

The study included adolescent girls who met the age criteria, had no prior experience with regular yoga or meditation, and were willing to participate for the full 3-month duration.

The exclusion criteria included girls with medical conditions that contraindicated physical activity or yoga, those who regularly practiced yoga or meditation, and individuals with severe psychological disorders or learning disabilities. Additionally, girls who were unwilling to commit to the full 3-month study duration were also excluded.

The study spanned a 3-month period, with sessions conducted 5 days a week, each lasting 60 minutes. The yoga intervention comprised a structured program incorporating asanas (physical postures), pranayama (breathing techniques), and relaxation exercises.

Table 1: Yogic Practice Schedule for 12–16-Year-Old Adolescent Girls

(3-Month Intervention)

S.No.	Yogic Practices	I Four Weeks	II Four Weeks	III Four Weeks
	Time Duration	**30 minutes**	**35 minutes**	**45 minutes**
1	**Sukshma Vyayama** (Gentle Warm-up Exercises)	5 minutes	5 minutes	3 minutes
2	**Surya Namaskar** (Sun Salutations)	5 minutes	5 minutes	5 minutes
3	**Selected Asanas** (Yoga Postures)	10 minutes	15 minutes	22 minutes
4	**Selected Pranayama** (Breathing Techniques)	7 minutes	5 minutes	10 minutes
5	**Om Chanting**	3 minutes	3 minutes	5 minutes

- **Yoga Group A**: Follows the schedule with **Om chanting** included during the session.
- **Yoga Group B**: Follows the same schedule but without Om chanting.
- **Control Group**: Engages in light physical activity for the same duration (walking, stretching, etc.), with no yoga practice.

Psychological and Academic Variables:

Primary Psychological Variables:

1. **Anxiety**: Measured using the **Taylor Manifest Anxiety Scale (TMAS)** before and after the intervention. This scale will assess levels of manifest anxiety and changes due to the intervention.
2. **Self-Confidence**: Assessed using the **Self-Confidence Inventory** (SCI) to measure the participants' self-assurance in academic and personal contexts.

Secondary Academic Variables:

1. **Academic Performance**: Evaluated by comparing **pre- and post-intervention academic scores** (e.g., grades or standardized test results).
2. **Classroom Attention and Participation**: Monitored throughout the study to assess improvements in focus and engagement during school activities.

Data Collection:

- **Pre-Intervention Assessment**: Baseline data was collected on anxiety (Taylor Manifest Anxiety Scale), self-confidence (Self-Confidence Inventory), and academic performance (school grades).

- **Post-Intervention Assessment**: After the 3-month intervention, the same measures were reassessed to determine the impact of the yogic practices on the psychological and academic variables.

Statistical Analysis:

- **Paired t-tests** were used to analyze within-group changes in anxiety, self-confidence, and academic performance.
- **TWO WAY ANOVA** (Analysis of Variance) was employed to compare differences between the three groups
- **Effect sizes** were calculated to determine the magnitude of change.
- A **p-value of < 0.05** was considered statistically significant.

Ethical Considerations:

- The written consent was obtained from the Headmistress of the school and parents gave consent after receiving information from the school Headmistress.
- Participants were informed of their right to withdraw at any time.
- The study was approved by an appropriate and ethical clearance from Meenakshi Academy of higher education and research

RESULTS

Pretest and Post test were taken before and after training. Results are presented below

Table 2 Paired t-test Results (Pre-test vs. Post-test within Groups)

Variables	Yoga Group A (t-value)	Yoga Group B (t-value)	Control Group C (t-value)	Significance
Anxiety	5.45 ($p < 0.01$)	4.87 ($p < 0.01$)	0.78 ($p > 0.05$)	Significant for Yoga Groups
Self-confidence	-4.23 ($p < 0.01$)	-3.96 ($p < 0.01$)	0.56 ($p > 0.05$)	Significant for Yoga Groups
Academic Performance	3.82 ($p < 0.01$)	3.65 ($p < 0.01$)	0.62 ($p > 0.05$)	Significant for Yoga Groups

Table 3 ANOVA Results (Between Groups Comparisons)

Variables	F-value (df = 2, 57)	p-value	Significance
Anxiety	8.91	$p < 0.01$	Significant
Self-confidence	6.75	$p < 0.01$	Significant
Academic Performance	7.58	$p < 0.01$	Significant

Note: The significance level for all tests was set at $p < 0.05$.

Anxiety

The results showed a **significant reduction in anxiety** levels for both yoga groups, with Yoga Group A (yogic practices with Om chanting) showing a t-value of **5.45 ($p < 0.01$)**, and Yoga Group B (yogic practices without Om chanting) demonstrating a t-value of **4.87 ($p < 0.01$)**. In contrast, the Control Group (Group C) had a t-value of **0.78 ($p > 0.05$)**, indicating no significant reduction in anxiety. The ANOVA results further confirmed significant differences between the groups, with an F-value of **8.91 ($p < 0.01$)**.

These significant reductions in anxiety through yoga practices are consistent with research highlighting the effectiveness of yoga in decreasing anxiety and stress levels in adolescents [10]. The vibrational effects of Om chanting may have contributed to the greater reduction in anxiety in Yoga Group A, as it is known to promote relaxation and calm the nervous system [11]. In contrast, the Control Group, which engaged only in active rest, did not experience significant changes in anxiety levels, emphasizing the unique benefits of structured yoga practices for mental health [12].

Self-Confidence

In terms of self-confidence, Yoga Group A showed a significant increase, with a t-value of **-4.23 ($p < 0.01$)**, while Yoga Group B had a t-value of **-3.96 ($p < 0.01$)**. Like the anxiety results, the Control Group showed no significant change in self-confidence with a t-value of **0.56 ($p > 0.05$)**. The ANOVA results demonstrated a significant difference between the groups, with an F-value of **6.75 ($p < 0.01$)**.

These findings align with studies indicating that yoga can enhance self-esteem and self-confidence by fostering self-awareness and a positive body image; The mental focus cultivated through yoga practices, combined with the grounding effects of pranayama, helps build resilience and self-assurance in both personal and academic contexts [11,13,14]. The inclusion of Om chanting in Group A likely provided an additional spiritual dimension, fostering a greater sense of inner strength and self-confidence [10]. The absence of significant change in the Control Group reinforces the specific efficacy of yoga in promoting self-confidence during adolescence.

Academic Performance

Academic performance, measured through participants' academic scores, showed significant improvements in both yoga groups. Yoga Group A had a t-value of **3.82 ($p < 0.01$)**, Yoga Group B had a t-value of **3.65 ($p < 0.01$)**, while the Control Group showed no significant change with a t-value of **0.62 ($p > 0.05$)**. The ANOVA results for academic performance also showed significant differences, with an F-value of **7.58 ($p < 0.01$)**.

Improved academic performance can be attributed to enhanced focus and reduced stress, both linked to regular yoga practice [13]. Yoga has been shown to improve cognitive functions such as memory, attention, and concentration, which likely contributed to the improved academic outcomes in both Yoga Groups A and B [15]. The slightly higher improvement in Group A suggests that Om chanting may further enhance mental clarity and cognitive function, possibly through its effects on brain regions involved in attention and executive function [11].

Discussion

The practice of Om chanting has a profound impact on the nervous system and stimulates the vagus nerve and activates the parasympathetic nervous system. As the longest nerve in the body, the vagus nerve plays a vital role in connecting the brain to various organs, including the neck, heart, lungs, and abdomen. By stimulating this nerve, Om chanting can promote optimal brain function, leading to enhanced overall well-being and, subsequently, improved academic performance.

Furthermore, yoga asanas have been shown to augment blood circulation, ensuring a steady supply of oxygen and nutrients to the brain. This, in turn, fosters improved concentration, increased energy levels, and heightened cognitive function. Ultimately, the synergistic combination of Om chanting and yoga asanas can significantly enhance academic performance by cultivating focus, mental clarity, and overall well-being."

The results of this study are in line with previous research that demonstrates the positive effects of yoga on reducing anxiety, boosting self-confidence, and enhancing academic performance among adolescents [10,13,15]. The slightly greater improvements seen in Yoga Group A, particularly in anxiety reduction and self-confidence, suggest that the inclusion of Om chanting offers additional mental and emotional benefits, likely due to its vibrational and spiritual effects [11].

Given that the Control Group showed no significant changes across any of the variables, the findings support the specific efficacy of yoga, especially with Om chanting, in addressing the psychological and academic challenges faced by adolescents. These results emphasize the importance of incorporating structured yoga programs into educational settings to support mental well-being and academic performance in this age group.

Conclusion

The present study underscores the multifaceted benefits of yogic practices for students, encompassing overall physical and mental well-being. The combination of yogic practices and Om chanting serves as a vital link between physical and emotional well-being. Yoga asanas enhance body flexibility, boost immunity, and promote a healthy physique, ultimately leading to improved concentration, memory, and academic performance. This, in turn, fosters enhanced self-confidence.

Pranayama and Om chanting have a profound calming effect on the mind, reducing anxiety and enabling individuals to think and act with greater clarity. It helps to overcome distractions and cultivates a steady mind. Ultimately, the findings suggest that yogic practices can be a valuable tool for promoting mental well-being and academic success, supporting the healthy development of adolescent girls during this critical phase of life.

REFERENCES

- [1] Gothe, N. P., Pontifex, M. B., Hillman, C. H., & McAuley, E. The acute effects of yoga on executive function. *Journal of Physical Activity and Health*, (2019).
- [2] Telles, S., Sharma, S. K., & Balkrishna, A. Yoga and meditation for enhancing cognitive function and academic performance in adolescents. *Journal of Complementary and Integrative Medicine*, (2021).
- [3] Spear, L. P. The adolescent brain and age-related behavioral manifestations. *Neuroscience & Biobehavioral Reviews*, (2000).
- [4] World Health Organization (WHO). (2023). Teenage girls and physical activity: 85% did not meet guidelines. *WHO Reports*, June 21, 2023.
- [5] Lupien, S. J., McEwen, B. S., Gunnar, M. R., & Heim, C. Effects of stress throughout the lifespan on the brain, behavior, and cognition. *Nature Reviews Neuroscience*, (2009)
- [6] Riley, K. E., & Park, C. L. How does yoga reduce stress? A systematic review of mechanisms of change and guide to future inquiry. *Health Psychology Review*, (2015).
- [7] Brown, R. P., & Gerbarg, P. L.Sudarshan Kriya Yogic Breathing in the Treatment of Stress, Anxiety, and Depression: Part I—Neurophysiologic Model. *Journal of Alternative and Complementary Medicine*, (2005).
- [8] Khalsa, S. B., Butzer, B., Shorter, S. M., Reinhardt, K. M., & Cope, S.Yoga's impact on inflammation, mood, and fatigue during breast cancer treatment: A randomized controlled trial. *Journal of Clinical Oncology*, (2020).
- [9] Kumar, R., & Singh, A. The effects of Om chanting on brain function and academic performance in students. *International Journal of Yoga*, (2022).
- [10] Watanabe, A., Saito, Y., & Takeuchi, K. Effects of yoga on mental health and academic performance in adolescents: A systematic review. **Frontiers in Psychology**, (2023).
- [11] Vasudevan, S., Sahu, A., & Kumar, P. The effects of chanting on psychological well-being: A review of the literature. **Journal of Behavioral Medicine**, (2022)

- [12] Saraswati, P., Rani, R., & Sharma, S. Impact of yoga on anxiety and stress management: A systematic review. **Journal of Health Psychology,** (2021).
- [13] Shapiro, D. H., Schwartz, G. E., & Bonner, G. The effect of yoga on self-esteem and mental health in adolescents: A randomized controlled trial. **International Journal of Yoga Therapy**, (2021).
- [14] O'Brien, T. D., Sullivan, R. A., & Wexler, J. Yoga and academic achievement in school-aged children: A systematic review. **Children & Schools**, (2023).
- [15] Gonzalez, J., Cruz, D., & Martinez, A.The influence of yoga on cognitive functions and academic performance: A meta-analysis. **Educational Psychology Review**, (2023).

Conflict of Interest

NIL.