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Efficacy Of Preksha Meditation On Test Anxiety Levels Of Jee & Neet Aspirants

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Abstract: Rising test anxiety levels among Indian JEE & NEET (Joint Entrance Exam & National Eligibility cum Entrance Exam) aspirants has become an alarming academic and mental health concern. This study aims to evaluate the effect of Preksha meditation (PM) on the test anxiety levels of 50 Senior Secondary students, with an average age of 17, preparing for JEE/NEET exam in an integrated school in Bangalore. The Westside Test Anxiety scale (WATS) was employed to identify students with anxiety impairment. Items of the scale, rated on 5 points Likert scale, cover self- assess anxiety impairment and cognition which can impair performance. With a pre-post experiment design, participants were asked to complete the test anxiety scale before and after the intervention of 1 month (6 days/week) of Preksha meditation-based module. The results demonstrated highly significant reduction in Test Anxiety scores. Paired 't' test showed statistically significant value $t(49) = 4.21$, $p < 0.001$ with a medium sized effect (Cohen's $d = 0.60$). Gender-wise analysis revealed large effect among girls (Cohen's $d = 0.83$) and a small-moderate effect among boys (Cohen's $d = 0.43$), suggesting that the intervention was beneficial across both groups. The significant improvement observed in the study indicates the value of incorporating PM techniques into students' daily routines, especially during crucial life stages when academic performance in competitive examinations shapes future career trajectories.

Index Terms - Preksha Meditation, Test Anxiety, Senior Secondary Students, JEE/NEET, Psychophysiological regulations

I. INTRODUCTION

Preparation of JEE/NEET exams in India, undoubtably represent high competitiveness, prolonged preparation and intense performance pressure. It is a very crucial phase in the aspiring students', as it has career defining outcomes, long term impact and developmental vulnerability. Statistics shows high levels of Test Anxiety among these aspirants, with researches reporting 40-50% experiencing significant anxiety **[1]**. The condition is mainly fueled by extensive syllabus, intense competition and fear of failure. Test anxiety significantly impacts cognitive functions like working memory, decision making & test performance, leading to potential mental health crisis.**[2]** Consequently, the need to attend this crisis becomes crucial. In recent times, meditation practices have come up as an effective, non-pharmacology solutions to several mental health issues. Among many meditation practices, Preksha Meditation (PM) technique stands out as a promising neuroscience backed approach to boost mental & emotional health across age groups. Rooted in Jain philosophy, established by *Acharya Mahapragya*, PM based practices aim for mind-body regulation, emotional balance and autonomic

nervous system control. Unlike other passive mindfulness practices, it is an active, cognitively stimulating procedure. Despite the growing interest in meditation, there is no research, till date, specifically evaluated PM's effect on students preparing for high stake national level competitive exams.

Preksha Meditation is distinctive in its emphasis on perception based meditative framework which focuses on sustained, non- reactive awareness of body, breath & mental states, making it particularly relevant for managing exam related anxiety among JEE/NEET aspirants. The word Preksha in PM means 'to perceive deeply', while being fully present in the moment. The components of PM include practices like *Kayotsarg* (body- mind relaxation), *Shvas Preksha & Sharir Preksha* (perception of subtle vibrations of body & breath), *Anupreksha* (contemplation on positive thoughts), *Mahapran Dhvani* (sound meditation). The components can be used in different combinations to enhance the attentional control, emotional equanimity and regulate physiological arousal which are central to performance under high stake academic conditions.

Understanding the role of PM in reducing the test anxiety levels of the target population of students has significant implications for their holistic well-being. This research aimed to evaluate the effectiveness of structured Preksha Meditation based intervention on test anxiety levels among JEE/NEET aspirants.

II. REVIEW OF LITERATURE

Study by Roshni (2021): In a study conducted by Roshini **[3]**, 40 healthy students were randomly allocated to experimental and control groups. Researcher measured aggressiveness, stress and resilience using the Buss and Perry aggressiveness questionnaire (BPAQ), Perceived stress scale and Brief Resilience Scale (BRS). The experimental group was given 10 days Preksha meditation intervention while the control group was on their usual routine. Post intervention results showed significant improvements in the meditation group reporting reduced aggressiveness ($p= 0.04$), and enhanced resilience ($p= 0.02$) and decreased perceived stress ($p= 0.024$) demonstrating Preksha meditations beneficial effects on psychological well-being in healthy students.

Study by Abomoelak (2023): Abomoelak **[4]** examined 34 students practicing Preksha Meditation over 8 weeks, to assess cognitive performance and DNA methylation changes. Six of nine cognitive assessments showed significant improvements in memory and affect. Illumina microarray identified 470 differentially methylated sites (DMS) ($p<0.05$, methylation change > 3%) which correlated significantly with cognitive improvements. These DMS were proximal to genes regulating signaling, revealing potential genome level biomarkers for meditation induced cognitive changes.

Study by Pragya (**2021):** Pragya **[5]** conducted a prospective controlled study examining two Preksha meditation components- *Mahaprana Dhvani* (buzzing bee sound meditation) and *Leshya Dhyan* (green color meditation) in college students. The study assessed individual and combined of these techniques on short term memory, attention and effect in meditators using cognitive and performance tests compared to baseline and control values. Results demonstrated improved cognition, particularly in attention and short-term memory, along with enhanced positive effects and reduced negative. The combined techniques produced more global benefits compared to individual practices. These findings suggest the importance of examination individual meditation components to develop personalized treatment approaches for attention disorders in young adults.

Study by Travis (2009): Travis **[6]** conducted a randomized controlled trial with 50 college students to examine Transcendental Meditation (TM) effects on brain integration, psychophysiological measures & cognitive performance. Students were randomly assigned to immediate TM practice or delayed start (10- week post-test) groups. MANOVA analysis of 38 students with complete data, revealed significant group treatment interaction ($p< 0.07$) for Brain Integration Scale Scores, sleepiness and habituation rates. Pos hoc analysis showed significant increase in Brain Integration Scales scores and reduced sleepiness in the immediate start group, with no changes in habituation rates, while delayed start students showed decreased brain integration scores and increased habituation rates. These findings support the beneficial effects of TM practice for the college student population.

Although prior research has demonstrated the benefits of meditation for reducing stress and anxiety, limited attention has been given to their application in high stake competitive exam contexts such as JEE & NEET. Experimental evidence specifically examining the role of Preksha meditation in managing test anxiety among this population remains scarce. Given the prolonged academic pressure & psychological vulnerability associated with competitive exam preparation, there is a need for context specific non-pharmacological interventions. The presence study addresses this gap by evaluating the effectiveness of a structured Preksha meditation-based intervention in reducing test anxiety among JEE/NEET aspirants.

III. OBJECTIVE

To evaluate the efficacy of Preksha Meditation on test anxiety levels of JEE/NEET aspiring Senior Secondary students.

SAMPLING

Random sampling method was used to select 50 Senior Secondary students from a Bangalore based integrated school that offer coaching for JEE/NEET examinations along with the regular CBSE courses. The sample (N=50) had a mean age of 17 years and included 28 girls & 22 boys.

TOOL

The Westside Test Anxiety scale (WTAS) was employed in the study. It is self-report assessment, designed to identify student who experience performance impairing test anxiety. The 10 items scale mainly focuses on cognitive aspects of anxiety, like self- doubt, worry, impaired concentration. Each item of scale is rated on a 5-point Likert scale, assessing the extent to which anxiety interferes with academic performance. WTAS has proved good reliability & validity across student populations.

DATA COLLECTION PROCEDURE

Student were given an introductory session regarding the nature & aims of the research. The study was approved by school management. A signed consent form was collected from the parents of all students. A pre-post experimental design was employed and participants were asked to complete the WTAS scale at the beginning of the intervention study. Presha meditation sessions were organized for all participants for 1 month, 6 days/week for 30 mins each day at fixed time in the morning. At the end of 1 month the tool was applied again to the participants and data was collected to evaluate- the net effect of PM based module and for the intergroup comparisons. PM based module included:

1) *Mahapran Dhvani* (Bee breathing)- 3 mins
2) *Kayotsarga* (Relaxation with full awareness)- 10 mins
3) Deep Breathing - 7mins
4) *Anupreksha* of fearlessness (Contemplation & resolution)- 10 mins.

DATA ANALYSIS

All the collected data was analysed using descriptive statistics to compare pre-post differences in Test Anxiety levels among students. Male and female students were evaluated separately. The data was evaluated using SPSS version 25.0 (IBM Corporation) and Data Analysis tool-pack software of Microsoft Excel (2007). Statistical significance was calculated using a paired sample t-test. To quantify the magnitude of changes, the effect size was calculated from mean values & SD values using Cohen's d.

IV. RESULTS

Descriptive statistics, inferential test results & effect sizes are summarized in Table 4.1. Graphical representation of Pre Post changes is presented in Fig. 1, 2 &3.

Table 4.1: Effect of Preksha Meditation Based Module on Test Anxiety in students (Overall & Gender-wise)

Group	Pre Test Mean ± SD	Post Test Mean ± SD	Mean Difference	Standard Error	t-Value	p Value	Cohen's d	Interpretation
Overall	3.304±0.766	2.874±0.88	-0.43	0.102	4.21	0.001	0.60	Medium Effect size
Girls	3.575±0.693	2.982±0.816	-0.593	0.135	4.39	0.001	0.83	Large Effect size
Boys	2.959±0.726	2.64±0.970	-0.318	0.157	2.03	0.10	0.43	Small-medium Effect size

Note: Values represent mean ± standard deviation (SD) of test anxiety scores. t-values were obtained using paired sample t-tests comparing pre-test & post-test anxiety scores within each group. All p values are two tailed. Cohen's d was calculated as a measure of effect size to quantify the magnitude of pre-post change. Interpretation of effect sizes was according to conventional benchmarks (0.80= large, 0.50= medium, 0.20= small)

Overall effect of the intervention on test anxiety

Analysis of the overall student sample demonstrated a highly significant reduction in test anxiety following the intervention, $t(49) = 4.21$, $p < 0.001$. This finding indicates that students reported substantially lower anxiety levels after participating in the Preksha Meditation program. The magnitude of this change was moderate (Cohen's $d = 0.60$), suggesting a practically meaningful improvement in emotional functioning and anxiety regulation among students. (Fig.1)

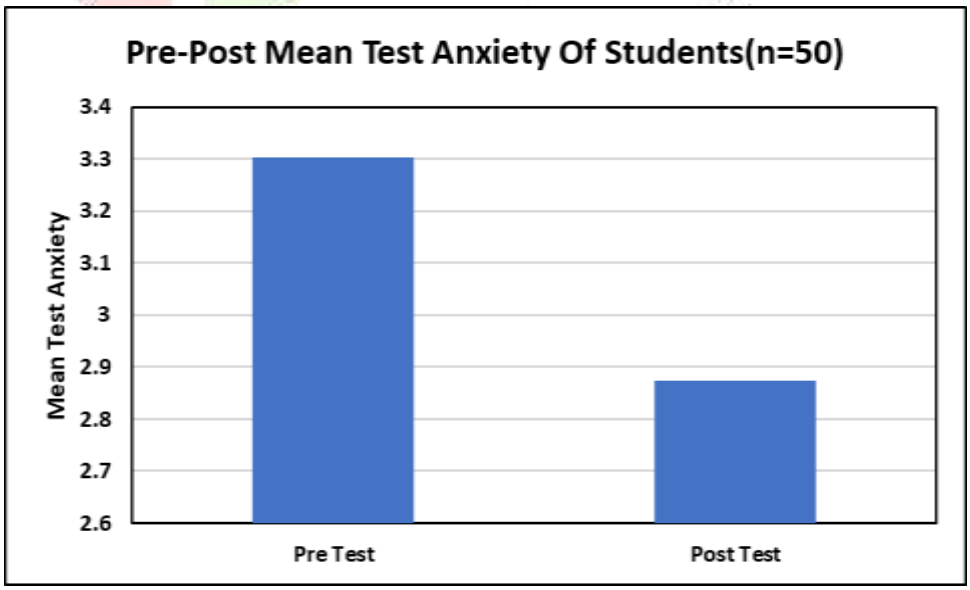

Figure1: Pre–Post Mean Test Anxiety Scores.

Bar chart showing mean test anxiety scores before and after the meditation intervention for the overall sample (n= 50).

Changes in Test Anxiety grades in overall sample following the PM Intervention

As shown in Fig. 2 the proportion of students classified as having extremely high-test anxiety decreased from 18% at pre-test to 14% at post-test, while the proportion in the low anxiety category increased from 6% to 14%. The normal category increased from 6% to 18%, moderate high increased from 26% to 30% while high anxiety category had a remarkable decrease from 28% to 10%. This shift indicates a meaningful redistribution of students from higher to lower anxiety grades following the Preksha meditation intervention.

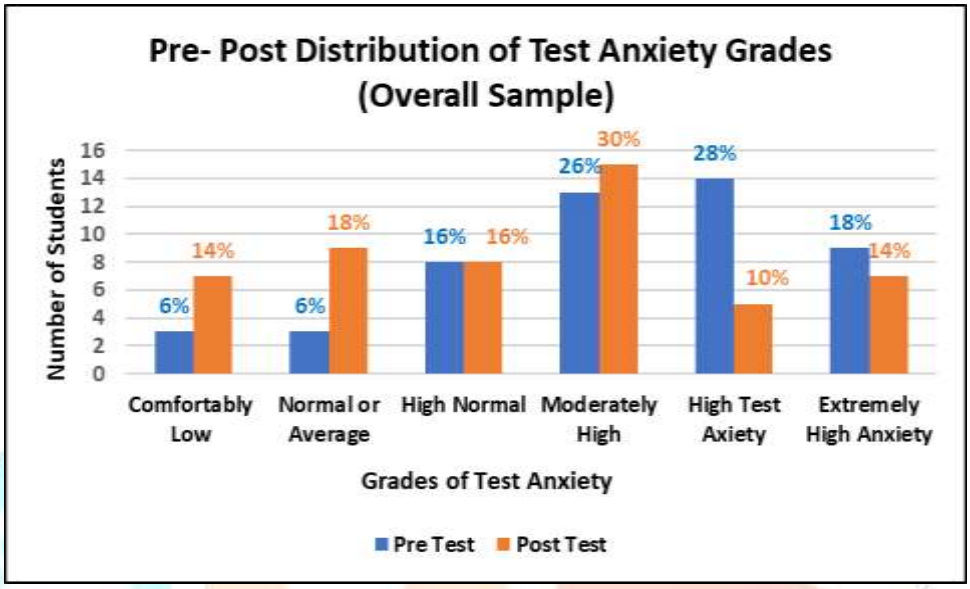

Figure 2: **Distribution of testing grades in the overall sample before and after the intervention.**
The figure illustrates number & percentage of students classified into comfortably low, normal, high normal, moderately high, high & extremely high-test anxiety categories at pre-test and post test

Gender-wise Pre-Post comparison (Girls and Boys)

Among girls (n=28), the paired sample t-test revealed a highly significant decrease in test anxiety from pre to post intervention t (27) = 4.39, p< 0.001. The effect size was large (Cohen's d = 0.83) indicating a strong practical impact of the intervention in girl students. Among boys the effect size was in the small-to-medium range (Cohen's d= 0.43), t (21) =2.03, p= 0.10, suggesting a meaningful improvement in practical terms. (Fig. 3)

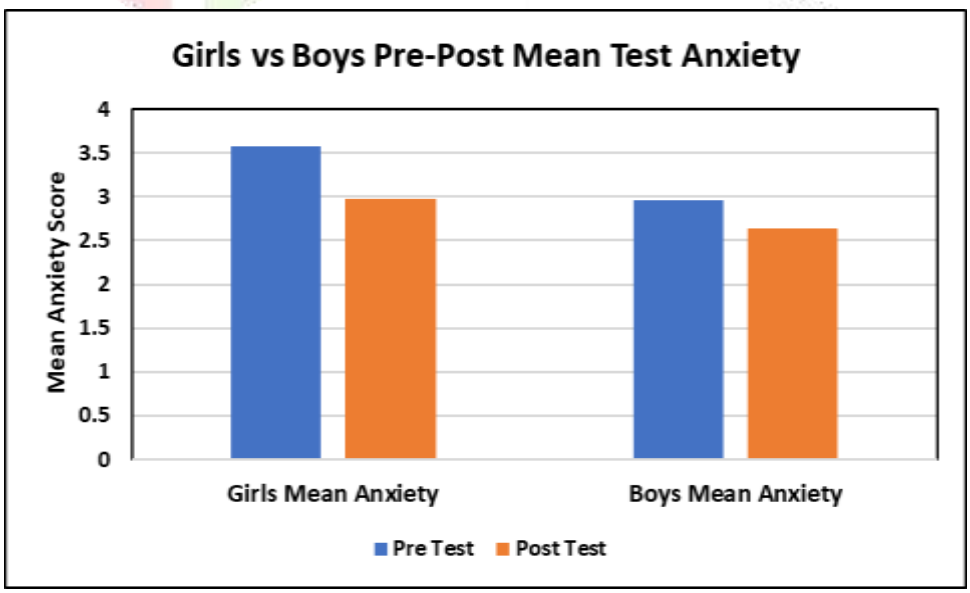

Figure 3. Gender-wise Pre-Post Mean Test Anxiety Scores.
Grouped bar chart showing mean pre-test and post-test anxiety scores separately for Boys (n = 22) and Girls (n = 28).

Overall pattern & Robustness of findings

Effect size findings indicate that the intervention produced moderate to large reduction in test anxiety, with particularly strong effects observed among girls and meaningful effects observed among boys. Across the overall sample and both gender subgroups, the direction of change was consistently toward reduced test anxiety following the intervention. This finding strengthens confidence in the robustness of the intervention effect.

V. DISCUSSION

The intensive & prolonged nature of preparation of JEE/NEET exams keeps aspirants in a high demand learning environment. **[7]** This requires continuous focus, emotional endurance & adaptive coping. In addition to academic rigor, students have to navigate uncertainty & repeated evaluations, often with limited opportunities to recover. Such conditions can affect psychological balance & coping capacity of students. In this context, interventions that function not only as corrective but also as preventive methods, are essential to support students' resilience & sustained academic engagement.

Preksha meditation offers a comprehensive & effective approach for reducing test anxiety among the student population. The observed reductions in anxiety may be explained through several well established psychological and neuroanatomical mechanisms associated with meditative practices. **[8]** The techniques of PM address students' unique mental and emotional challenges during the career deciding stage of life. It cultivates emotional intelligence and mental clarity, essential for better decision making.**[9]** Researches has shown a significant impact of negative thinking patterns on academic performance.**[10].** Regular practice of *Anupreksha*, a major component of PM helps reduce the negative thought patterns, including catastrophic thinking. **[11]** The practice of PM trains individuals to observe thoughts and emotions non judgmentally which reduces psychopathological conditions such as aggression and depression. **[12]** Daily practices of meditation positively impact adjustment and attitude.**[13]** At the neurophysiological level meditative practice have shown to down regulate sympathetic nervous system activity and activate para sympathetic response leading to reductions in physiological arousal like blood pressure, heart rate. **[14]** This shift towards autonomic balance likely contributes to improved emotional regulation and reduced somatic symptoms of anxiety such as restlessness and tension which commonly interfere with academic performance.

VI. CONCLUSION

The present study adds to the growing evidences supporting the role of structured Preksha meditation interventions in addressing exam related psychological challenges among students preparing for national level competitive exams. Preparation for JEE & NEET demands sustained cognitive focus & emotional resilience pointing to the need for supportive approaches. The findings of the study demonstrated a significant reduction in test anxiety in students, highlighting the potential of Preksha meditation-based practices as preventive & protective tools during the critical academic phases. Such interventions should be integrated into educational & coaching environments to enhance the overall well-being among aspirants. Future researches with larger sample sizes & longitudinal designs will further strengthen the evidence & explore long term outcomes.

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