Effectiveness of Nadi Shodhana Pranayama on Test Anxiety among Nursing Students of Selected Nursing College, Bengaluru

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ABSTRACT

Background: Test anxiety is a major factor contributing to a variety of negative outcomes including psychological distress, academic under achievement and academic failure. Many students have the cognitive ability to do well in the examinations, but may not do so because of high level of test anxiety. Nadi Shodhana pranayama is a powerful tool for the reduction and prevention of test anxiety.

Purpose: To assess the effectiveness of Nadi Shodhana pranayama on test anxiety among Nursing students of a selected Nursing College, Bengaluru.

Materials & Methods: Pre-experimental, one group pre-test post-test research design was used. Non-probability purposive sampling technique was used to select the samples who are suffering with test anxiety. 45 students were selected by using Westside Test Anxiety inventory (WTAI).

Results: Paired t test was applied to compare pre and post intervention on test anxiety. The calculated ‘t’ value was 11.9 which was higher than the table value (2.01) at 0.05 level of significance.

Conclusion: The study concludes that Nadi- Shodhana pranayama is effective in reduction of test anxiety.

Keywords: Nadi Shodhana pranayama, Test anxiety, nursing students

INTRODUCTION

Anxiety is our body’s natural response to stress. It’s a feeling of fear or apprehension about what to come¹. Test anxiety is referred as the set of psychological and behavioral responses that accompany concern about likely negative consequences or failure of an exam or similar evaluation situations². Test anxiety is refers to the anxiety states and worries conditions that are happened during examinations. This type of anxiety appeared abruptly or gradually. Sometimes it is persistent, or ended within a few hours³. The anticipatory and adaptive responses stimulated by anxiety when out of proportion to the stressful situation can result in significant psychological and social impairment⁴. Thomas et al. were reported that 25% of undergraduate university students to be highly test anxious⁵. These prevalence rates are alarming because test anxiety may debilitate academic performance and impair subjective well-being⁶.

A number of randomized and nonrandomized controlled trials have tested yoga as an intervention with respect to anxiety and anxiety disorders⁷. Among the various yoga practices, the alternate nostril breathing (ANB) Nadi- Shodhana pranayama is a fairly simple and commonly performed exercise which is traditionally considered to relieve mental stress and promote physical and mental balance⁸. There is evidence that, Nadi- Shodhana pranayama has the balancing effect on the activity of both cerebral hemispheres⁹. Also,
the practice of Nadi-Shodhana Pranayama has been shown to improve visuospatial memory and improve performance in letter cancellation task\textsuperscript{10}. There is also high level of evidence regarding improvement in cognitive functioning with regular practice of alternate nostril breathing\textsuperscript{11}. The physiological and psychological benefits of pranayama have been demonstrated in several studies. These studies have shown that regular practice of Nadi Shodhana pranayama leads to improvement in physiological functions and human performance.

The aim of the study was to evaluate the effectiveness of Nadi Shodhana pranayama on test anxiety among nursing students.

**MATERIALS AND METHODS**

The study was ethically approved from the ethical committee of the institute. An evaluate research approach was adopted to assess the effectiveness of Nadi Shodhana pranayama on test anxiety among Nursing students. Adopted research design was pre-experimental, one group pre-test and post-test research design. Purposive sampling was used to select the 45 participants who fulfilled the inclusion criteria. Anxiety levels were measured using the Westside Test Anxiety Scale\textsuperscript{12} a self-reported scale to measure the anxiety”. The original Westside Test Anxiety Scale instrument with 10 items was modified for the purpose of this study with 15 items which were rated on a Likert-type scale. The study duration was for 4 weeks. Signed consent form was taken prior the conduction of study.

**Pretest data collection:** After selection, participants were seated in the examination hall which was specifically arranged. Demographic variables were collected by using semi structured interview schedule and their anxiety level was assessed by Westside Test Anxiety inventory (WTAI).

**Intervention:** On the day of pretest, Nadi Shodhana pranayama was demonstrated to participants for 15-20 minutes. Participants practiced these interventions for 15 minutes two times (morning and evening) a day for 2 weeks. Intervention was done under the supervision.

**Post test data collection:** After 4 weeks of intervention, before the test, post WTAI Score was noted

**Statistical Analysis**

The data was entered into excel spreadsheet, tabulated and subjected to statistical analysis. Statistical measures such as Mean, Standard deviation (SD), Test of significance such as Paired t-test was used to analyze the data. p value of < 0.05 was considered as significant.

**RESULTS**

![Figure 1: Percentage distribution of overall pre test, post test level of test anxiety among participants](image)

The above bar diagram shows that 30(67%) participants had severe test anxiety level and 15(33%) participants had moderate test anxiety. After intervention, 33(73%) participants did
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not have test anxiety, 9(20%) participants had mild test anxiety level, and 3(7%) participants had moderate test anxiety level.

Table 1: Mean, Standard deviation of test anxiety among between pre test and post test Scores of Experimental group

<table>
<thead>
<tr>
<th>Experimental Group (n=45)</th>
<th>Paired differences</th>
<th>Mean value enhancement</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>t Value (Calculated value)</th>
<th>d.f</th>
<th>table Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre test &amp; Post test</td>
<td>4</td>
<td>2.2461</td>
<td>0.334829</td>
<td>11.9</td>
<td>2.01</td>
<td>44</td>
<td>2.01</td>
</tr>
</tbody>
</table>

Table 1 showed that, the calculated, t” value 11.9 of experimental group was more than the table value 2.01. This indicates that, Nadi Shodhana pranayama was effective in reducing the level of test anxiety

**DISCUSSION**

Anxiety is an emotional and behavioral disorder caused by the activation of sympathetic nervous system. In the domain of education, high level of anxiety is often experienced by students during performance related activities such as, exams. Test Anxiety is a physiological condition in which people experience extreme stress, anxiety, and discomfort during and/or before taking a test. This anxiety creates significant barriers to learning and performance. Afolayan et al. stated that, generally nursing students expressed anxiety during examination which is seen as physiological, psychological and behavioural changes and abnormality. Brewer detected that while every university students experienced anxiety before exams, nursing students had higher levels of anxiety than did the other student groups. Clinical studies support that yoga postures, meditation, and controlled breathing practices can alleviate stress and anxiety. Subbalakshmi et al. suggested that the ‘Nadi-Shodhana Pranayama’ rapidly alters cardiopulmonary responses and improves simple problem solving.

This Study evaluated the effectiveness of Nadi Shodhana pranayama on test anxiety among nursing students of a selected Nursing College, Bengaluru. The results of the study suggested that the Nadi Shodhana pranayama was effective in reducing the level of test anxiety among nursing students. This finding was consistent with the following studies:

Pranayama seems to have a significant positive effect on test anxiety and test performance. It could be used as an important technique by students prior to their examinations, to reduce their test anxiety and increase their test performance.

Bhimani (2011) illustrated that, after two months of practicing pranayama had reduced the stress levels of medical students, as was evident by a decrease in total stress score, which was highly significant, at the start of the study. Azadeh Nemati investigated the effect of doing pranayama on test anxiety and test performance. He concluded that the Pranayama seems to have a significant positive effect on test anxiety and test performance which could be used as an important technique by students prior to their examinations, to reduce their test anxiety and increase their test performance.

Yadav et al, reported Alternate nostril breathing facilitated motor memory retention of newly learned motor skills immediately and even after 24 hours. Letter cancellation task score in right-handed adults improved noticeably after practicing both Alternate nostril breathing and right nostril breathing 30 minutes in separate sessions.

**CONCLUSION**

Results showed that, the 4-week practices of Nadi Shodhana pranayama had significant effect on test anxiety. Thus, such practices may be recommended to improve fitness-based performance. The positive results found in the present study might apply to students who are suffering from test anxiety. The daily few minutes’ practice
of Nadi Shodhana pranayama helps in maintaining better physical and mental health. Although the present study suggests some applications, further studies with larger number of subjects to establish the beneficial effects of pranayama practice.

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**Conflict of Interest**

Authors don’t have any conflict of interest and no funding has been obtained for conducting the study.

**REFERENCES**

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