

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

A. Jebarna Kiruba Mary¹, Alna Sibi², Akhila Mathew², Viviya Joseph²

¹Principal, RajaRajeswari College of Nursing, Bengaluru, Karnataka.

²IV Year B.Sc. Nursing Students, Raja Rajeswari College of Nursing, Bengaluru

Corresponding Author: A. Jebarna Kiruba Mary

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 task¹⁰. There is also high level of evidence regarding improvement in cognitive functioning with regular practice of alternate nostril breathing¹¹. 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 Scale¹² 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

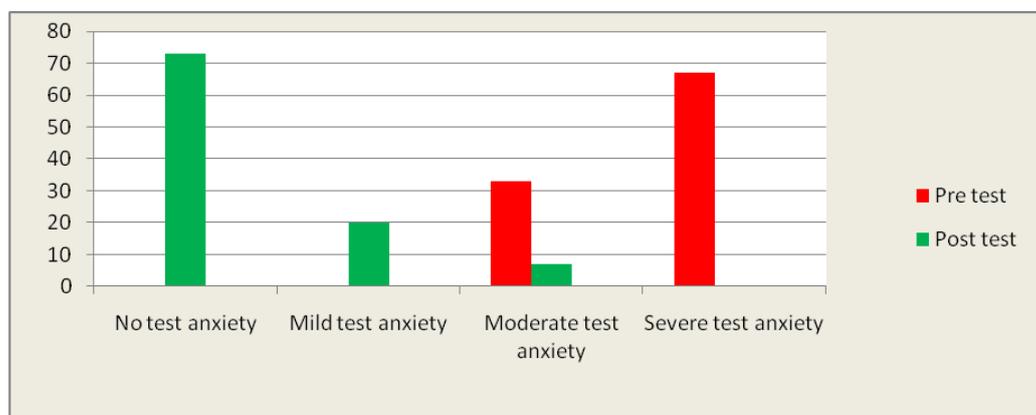


Figure 1: Percentage distribution of overall pre test, post test level of test anxiety among participants

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

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 n=45

Experimental Group (n=45)	Paired differences						
	Mean value enhancement	Standard Deviation	Std. Error Mean	t Value (Calculated value)	d.f	table Value	
Pre test & Post test	4	2.2461	0.334829	* 11.9	44	2.01	

d.f = Degree of freedom p value=0.05 level of significance * = Significant

Table 1 showed that, the calculated, t^c 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, exams¹³. 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 performance¹⁴. Afolayan et al. stated that, generally nursing students expressed anxiety during examination which is seen as physiological, psychological and behavioural changes and abnormality¹⁵. Brewer detected that while every university students experienced anxiety before exams, nursing students had higher levels of anxiety than did the other student groups¹⁶. Clinical studies support that yoga postures, meditation, and controlled breathing practices can alleviate stress and anxiety¹⁷. Subbalakshmi et al. suggested that the 'Nadi-Shodhana Pranayama' rapidly alters cardiopulmonary responses and improves simple problem solving¹⁸.

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 study¹⁹. 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 performance²⁰. 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 sessions²¹.

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.

ACKNOWLEDGMENT

The author would like to thank the Management of RajaRajeswari Group of Institutions, Bengaluru. Also like to thank the courage's students who volunteered in the study.

Conflict of Interest

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

REFERENCES

1. Kassim MA, Hanafi S, DRJPie H. Test anxiety and its consequences on academic performance among university students. *AdvPsychol Res.* 2007;15:17–37
2. Rajiah K, Coumaravelou S, Ying OW. Relationship of test anxiety, psychological distress and academic motivation among first year undergraduate pharmacy students. *Int J Appl Psychol.* 2014;4(2):68–72
3. Kalpan HI, Sadock B.J. *Synopsis of Psychiatry*, Baltimore: Williams and Wilkins; 1998.
4. J. K. Trivedi and P. K. Gupta, "An overview of Indian research in anxiety disorders," *Indian Journal of Psychiatry*, vol. 52, supplement 1, no. 7, pp. S210–S218, 2010.
5. Thomas, C. L., Cassady, J. C., and Finch, W. H. (2018). Identifying severity standards on the cognitive test anxiety scale: cut score determination using latent class and cluster analysis. *J. Psychoeduc. Assess.* 36, 492–508.
6. Steinmayr, R., Crede, J., McElvany, N., and Wirthwein, L. (2016). Subjective well-being, test anxiety, academic achievement: testing for reciprocal effects. *Front. Psychol.* 6:1994.
7. G. Kirkwood, H. Rampes, V. Tuffrey, J. Richardson, and K. Pilkington, "Yoga for anxiety: a systematic review of the research evidence," *British Journal of Sports Medicine*, vol. 39, no. 12, pp. 884–891, 2005.
8. H. Cramer, R. Lauche, P. Klose, J. Langhorst, and G. Dobos, "Yoga for schizophrenia: a systematic review and meta-analysis," *BMC Psychiatry*, vol. 13, article no. 32, 2013.
9. Stančák Jr. and M. Kuna, "EEG changes during forced alternate nostril breathing," *International Journal of Psychophysiology*, vol. 18, no. 1, pp. 75–79, 1994.
10. K. V. Naveen, R. Nagarathna, H. R. Nagendra, and S. Telles, "Yoga breathing through a particular nostril increases spatial memory scores without lateralized effects," *Psychological Reports*, vol. 81, no. 2, pp. 555–561, 1997.
11. Shreya Ghiya, *International Journal of Research in Medical Sciences* Ghiya S. *Int J Res Med Sci.* 2017 Aug;5(8):3273-3286
12. R. Driscoll, *Westside Test Anxiety Scale Validation*, Education Resources Information Center, 2007.
13. P. Vitasari, M. N. A. Wahab, A. Othman, T. Herawan, and S. K. Sinnadurai, "The relationship between study anxiety and academic performance among engineering students," *Procedia- Social and Behavioral Sciences*, vol. 8, pp. 490–497, 2010.
14. Andrews, B.; Wilding, J. M. (2004). "The relation of depression and anxiety to life-stress and achievement in students". *British Journal of Psychology.* 95 (4): 509–521
15. Afolayan JA, Donald B, Onasoga O, Babafemi A & Agama Juan A, Relationship between anxiety and academic performance of nursing students, *Adv App Sci Res*, 4(2013) 25-33.
16. Brewer T, Test taking anxiety among nursing and general college students, *J PsychosocNursMent Health Serv*, 40(2002) 22-29.
17. Brown R, Gerbag P. Sudarshan Kriya yogic beathing in the treatment of stress, anxiety and depression. *J Altern Complement Med* 2005;4:711-7.
18. Nk, Subbalakshmi & Saxena, S. & D'Souza, Urban. (2004). Immediate effect

- of nadishodhana pranayama on some selected parameters of cardiovascular, pulmonary and higher functions of brain. *Thai J Physiol Sci.* 18. Page 10-16 volume 18 (no.2, 2005)
19. Bhimani NT, Kulkarni NB, Kowale A, Salvi S. Effect of pranayama on stress and cardiovascular autonomic tone and reactivity. *NJIRM* 2011;2.
20. Azadeh Nemati, The effect of pranayama on test anxiety and test performance, *Int J Yoga.* 2013 Jan-Jun; 6(1): 55–60.
21. Telles S, Raghuraj P, Maharana S, Nagendra H. Immediate effect of three yoga breathing techniques on performance on a letter-cancellation task. *Perceptual and motor skills.* 2007; 104(3 suppl):1289-96.
- How to cite this article: Mary AJK, Sibi A, Mathew A et.al. Effectiveness of Nadi Shodhana Pranayama on test anxiety among nursing students of selected nursing college, Bengaluru. *Int J Health Sci Res.* 2020; 10(8):70-74.
