

Effect of yoga intervention on test anxiety & wellbeing of female undergraduate students

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Abstract

The study investigates the impact of yoga on test anxiety and well-being among female undergraduate students. In our fast-paced lives, tension and anxiety often decrease quality of life, with test anxiety being a significant yet overlooked health concern. Research indicates that medications for anxiety symptoms do not provide lasting relief, whereas yoga offers a better and longer-lasting alternative. This study used a randomized pretest-post-test experimental design with 60 participants. After initial assessments of well-being and test anxiety, the group underwent a 12-week yoga intervention. Well-being was measured using the WHO-5 Well-Being Index, and test anxiety was assessed with the Westside Test Anxiety Scale. The intervention included selected asanas, pranayamas, relaxation techniques, satkarmas, and meditation. Findings reveal that yoga significantly reduces test anxiety and enhances general well-being. A negative correlation was observed between test anxiety and well-being, indicating that as test anxiety decreases, well-being improves. This suggests that yoga can be an effective non-pharmacological intervention for managing test anxiety and improving overall health among students.

Key Words: Yoga, Therapeutic Effect, Wellbeing, Test Anxiety, Female Students.

Introduction

With increased pressure to perform better, students of today have lesser scope to indulge in physical activity leading to stress, anxiety and inability to stay focus on study or work that ultimately have an effect on one's performance. Besides, the rapid scientific progress, media influences and social change have brought along with it tension, anxiety, insecurity, violence, fear to the human mind. Mental health and wellbeing are significant aspects of every student's development. All over the world, testing remains indispensable in educational practice. It is considered as a device to assess students' aptitude, skill, knowledge and performance of a person on the basis of some predetermined set of indexes. However, due to norms set in testing condition, fear

of failure or inability to cope up with expectation result into test anxiety. Test anxiety is found disrupting psycho-physical functioning of individual that has negative impact on academic performance (Amalu, 2017). Graduating students face significant academic and personal pressures, leading to anxiety and stress. This anxiety, driven by high achievement demands and insecurity, triggers stress hormones like epinephrine and norepinephrine. While some anxiety can motivate better performance, excessive anxiety hampers daily activities and academic success. It can also lead to chronic issues such as depression, sleep disturbances, menstrual irregularities, eating disorders, irritation, and weight fluctuations. To counterbalance this, relaxation techniques and yoga are

recommended to improve overall well-being and academic performance.

Yoga

Evolved in Indian soil over 3000 years back, Yoga as a pragmatic science, focus on the psycho-physical, emotional and spiritual wellbeing of mankind. Derived from the Sanskrit root 'Yuj' it etymologically implies bind, join, unite, integrate. It is blending of healthy body with a disciplined mind to procure spiritual development. Over the years, Yoga is gaining an impetus of its therapeutic effect on curing diseases i.e. diabetes, hypertension, mental illness, most of which occurs due to sedentary life style. According to Yoga, mind is a part of chitta and chitta consists of manas, buddhi, and ahamkara. Since the mind is made up of trigunas-Satva (Illumination), Rajo (motion) and Tamas (inertia) and wellbeing is equilibrium among the three gunas. Yoga, known as science of healthy body and mind, is one of the richest contributions of ancient Indian civilization to the humanity. The Yoga Sutras of Patanjali are a gathering of 196 Indian sutras (truisms) on the hypothesis and routine with regards to yoga (Prabhupada, 1972). Sage Patanjali in 'Yogas Sutra' defines Yoga as '*Yogah Chitta Vritti Nirodhah*' which implies getting rid of fluctuation of mind. Chitta is mind, Vrittis are thoughts, impulses, and Nirodha means cessation. The control of mind always involves the control of senses and allows the soul to abide in its right nature. According to Patanjali, yoga is a conscious process of attaining mastery over the mind, sadhana to attain that supreme state of realization through intense concentration.

"avidya asmita ragadwshanibhivahakl esaha" (Patanjali Yoga Sutra 2.3)

Kleshas are considered as the root cause of suffering according to Yoga and Buddhist philosophy. Understanding the causes of Klesha and practicing eight limbs of yoga

relieved persons from the kleshas. Different research findings reveal that Yogic practices have implications on general wellbeing of the students as well as in reducing anxiety. Here in this study, therapeutic effect of yoga implies application of yogic practices for improvement of health conditions. It also involves instruction in yogic practices for relieving physical, emotional, mental sufferings or pain (Woodyard C. 2011).

Test Anxiety

Test anxiety is a specific type of anxiety experienced during examinations, characterized by nervousness that can interfere with daily functions and performance (Spielberger and Sarason, 1989). It includes physical symptoms like headaches, nausea, shortness of breath, increased heartbeat, sweating, and panic attacks. Emotional symptoms include restlessness, fear, and disappointment, while cognitive symptoms involve difficulty concentrating, forgetfulness, and procrastination. Research indicates that test anxiety negatively impacts learning and test performance. Differentiating between normal test anxiety and an anxiety disorder, which affects emotional behaviour, physical health, and thought processes, is crucial for appropriate treatment. Research reports, students' observations and teachers' observations also reveal that test anxiety negatively affects the learning as well as test performance (Vogel and Collins, 2008, MacIntyre and Gardner, 1991).

Wellbeing

Originated from positive psychology, wellbeing is a condition of life of an individual in terms of goodness, health and happiness. Research reveal that females have lower level of wellbeing than the male (Parmer 2016, Maharishi & Kumar 2013). General wellbeing is positively correlated with positive cognitive emotional regulation (Mitra 2015). The current education system prioritizes academic

performance over student wellbeing, which is crucial for enhanced performance and a positive learning environment. Low wellbeing can lead to decreased happiness, satisfaction, self-esteem, and increased stress and depression (Amato 1994, Flouri & Buchanan, 2003). Therefore, educational institutions should explore non-pharmacological therapeutic strategies like yogic practices. The World Health Organization (WHO) emphasizes health promotion as a priority. This study aims to understand the relationship between wellbeing and test anxiety in female students, focusing on the impact of yogic interventions. The findings are expected to help students, teachers, guardians, and policymakers develop strategies to improve student wellbeing and support holistic development in physical, intellectual, emotional, social, and spiritual aspects as students transition to work or further study. Female students experience high test anxiety than the male (Lowe, P A, 2018, Pagaria, N 2020). Reasons for suffering test anxiety by the female students may be attributed to physical condition, psycho social factors, because of which girls have to feel pressure to perform well. Here, in the study, female students from BA/BSc Final year have been considered for studying test anxiety and wellbeing and also for yoga intervention to see the impact on the test anxiety and wellbeing. **The problem of the study** is stated as-

“Effect of Yoga Intervention on Test Anxiety & Wellbeing of Female Students” and the objectives of the study are-

- To examine the effect of Yoga Intervention on the level of test anxiety of the female students at undergraduate level
- To examine the effect of Yoga Intervention on the level of wellbeing of the female students at undergraduate level

- To examine the relationship between test anxiety and wellbeing of the female students

Justification of the Study

Technological advancements, rapid changes, competitive environments, and increasing performance demands in education and the job market trigger feelings of anger, fear, stress, frustration, and depression among students, adversely affecting their wellbeing. Parental expectations, overburdened curricula, frequent tests, institutional pressure, and compulsory participation in extracurricular activities further raise anxiety levels. To cope, some students may engage in anti-social activities. Reports indicate that Rajasthan's Kota recorded three suicides monthly in the first eight months of 2023, and the NCRB (2019) report reveals that more than one student commits suicide every hour in India. These stressors and anxiety sources significantly impact students' overall wellbeing. Research indicates that female students are more prone to test anxiety than male students (Hembee 1988, Abu Rubia 2004) and are more likely to surrender passively to it (Rani R 2017). The World Health Organization (2021) reports that one in five individuals aged 10-19 experiences developmental, emotional, or behavioural problems, and one in seven experiences a mental disorder. Mental health and wellbeing are crucial for student development but are often neglected in India. Promoting youth wellbeing is a vital socio-political goal, as it predicts outcomes like longevity, physio-mental health, quality of life, employment, earnings, and pro-social behaviour (WHO 2009). While the impact of yoga on psychological variables and health issues is well-documented globally, research in India's North Eastern region is very limited. There is significant potential to explore yoga's therapeutic effects on test anxiety and general wellbeing among female students in this region. Such research could

enhance understanding of yoga's benefits, reduce test anxiety, and inform policy formulation, opening new avenues in yoga studies in Assam and the North East. The present study is delimited to graduate level 60 female students of one single institution and the research design used is randomized pretest post-test experimental design and limitations of the particular design will be there. Besides, selected yoga asanas, breathing practices, meditation and satkarnas (non-pharmacological treatment) are practiced during the intervention period.

Review of Related Literature

Several studies have demonstrated the benefits of yoga and meditation in reducing stress and anxiety among students, particularly in medical, psychology, and nursing fields. For instance, Jadav (2009) noted significant decreases in anxiety levels and improvements in well-being among yogic science students, while Bhimani et al. (2011) found reduced stress in medical students after two months of yoga, and Dreisbach (2017) reported greater benefits for girls in a yoga intervention. Masoumeh et al. (2018) highlighted the effectiveness of regular hatha yoga in reducing stress, anxiety, and depression among women. Recent studies, such as those by Lelyza et al. (2023), have shown a negative relationship between mental well-being and test anxiety. However, studies also indicate that yoga practitioners may exhibit higher levels of depression and anxiety compared to a representative sample (Birdee et al., 2008) and tend to have more frequent interactions with mental health services (Fouladbakhsh and Stommel, 2010). Devi Gitanjali (2016) studied on Yoga, its origin development and relevance in modern times. Boro, S. S., Kakati, K., & Kataki, A. C. (2021) studied about knowledge of yoga among cancer patients and their attendants of a tertiary cancer centre in North East India. Lama & Hazarika (2023) studied about

Yoga as a career choice for women. Despite these findings, research on yoga's therapeutic effects on psychological variables, that too on test anxiety and general well-being among undergraduate students in Assam, especially female students, are hardly found. This gap underscores the need for further studies to explore the impact of Yoga intervention on test anxiety and wellbeing as well as relationship between well-being and test anxiety in this demography.

Research Design

To investigate the impact of Yogic Practices on students' test anxiety and overall wellbeing, a single group pretest-post-test pre-experimental design was utilized. In this design, Yoga intervention is administered to just one group, without the inclusion of a control group.

Design of the research is represented in the following way-

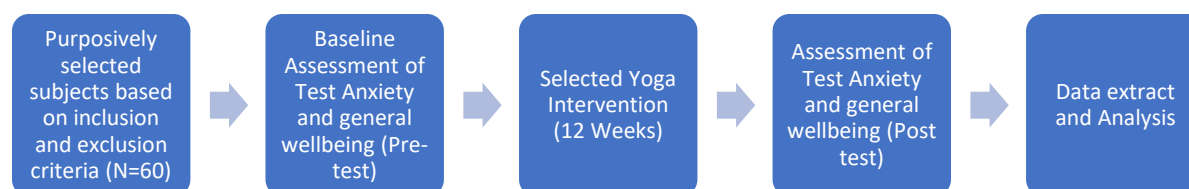
O1	X	O2
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Here, O1 is observation of pre-test, O2 is observation of post test and X implies treatment in terms of Yoga intervention. The study focused on a population of 70 female undergraduate students from Pub Kamrup College enrolled in a yoga training programme during the 2023 session. Out of these, 60 female students aged 19 to 20, pursuing B.A. and B.Sc. degrees, were purposively selected as the sample of the study. Their anxiety levels and general wellbeing were evaluated using a test anxiety scale and wellbeing tool, and only those with average levels were chosen to maintain group homogeneity. The independent variable in the study is specific yoga practices, including Asanas, Pranayamas, Kriyas, Meditation, and Satkarnas, while the dependent variables are test anxiety and general wellbeing. The tools used for data collection include the WHO's 5-item Well-Being Index and the Westside Test Anxiety Scale. Female students aged 19-20

were selected, ensuring homogeneity in socio-economic status and family environment. Extraneous variables were controlled by choosing students with no

severe physio-mental health issues, no prior experience of yogic practice, no long-term medication or drug abuse, and a commitment to practicing yoga regularly.

Figure 1 research Design is presented in chart



Descriptive statistics- Mean, S D and t' distribution has been calculated to examine the effect of Yoga intervention on Test anxiety and Wellbeing. Besides, Pearson correlation of Coefficient has been calculated for examining the relationship between test anxiety and wellbeing of the students.

Structured Yoga Intervention

Here in this study, Yoga as mind body intervention consists of Asana (Postures), Pranayama (Breathing Practice), Dhyana (Meditation) and Satkarma (Cleansing Practice) that are supposed to enhance the physical, mental, emotional and spiritual wellbeing of the students. For conducting

the experiment, participating students has to provide consent in written and necessary ethical guidelines were attempted to follow. Selected samples were first theoretically oriented on yoga and its health benefits as well as general precautions. After that, students were administered the World Health Organization Well-Being Index (WHO-5) and Westside Test Anxiety Scale. Student subjects were instructed to were loose fitting clothes fit for practicing yoga and start taking Yoga therapy from 6 am (without breakfast) onwards in the following sequence (70 minutes each day) for 12 weeks with individualized attention under professional.

Table 1: Sequence and Duration of Yoga Therapy Intervention by the group after pretest

Category of Yoga Practice	Yoga Intervention	Duration
Common Initial Practices	Sukshma Vyayama (Loosening Practices)	8 minutes
25 Yogic Asanas	Surya Namaskar, Tadasana, Vrikshasana, Trikonasana, Padahastasana, Virabhadrasana, Katichakrasana, Natarajasana, Marjarasana, Pawanmuktasana, Chakrasana, Sarvangasana, Halasana, Matsyasana, Bhujangasana, Naukasana, Dhanurasana Swastikasana, Balasana, Paschimottasana, Ustrasana, Gomukhasana, Ardhamatsyendrasana, Simhasana, Makarasana,	35 minutes (each Yogic Asana was for 1 minutes and Surya Namaskar 10 minutes)
Pranayamas	Nadisudhi Pranayama, Sitkari Pranayama, Bhramaripranayama, Kriya Trataka	10 minutes
Satkarma (cleansing practice)	Kapal Bhati Kriya (10 minutes) Agnisar Kriya (2 minutes)	12 minutes
Meditation	Dhyan	5 minutes
Final Relaxation	Savasana	5 minutes
Total		70 minutes

At the end of 3 months intervention of yogic Practices, both the test of World Health Organization Well-Being Index (WHO-5) and Westside Test Anxiety Scale have been administered once again as post-

tests to observe the effect of Yogic practices on test anxiety and overall general wellbeing of the students and treated with statistical analysis.

Result and Discussion

Table 2:“Mean, S D and t’ value of pretest and post test score on effect of Yoga intervention on Test anxiety and Wellbeing” N= 60

Parameter	Mean		S D		t’ value	Level of significance
	Pre	Post	Pre	Post		
Test Anxiety	32.28	30.18	8.27	8.07	1.41	
Wellbeing	16.30	17.48	3.2	3.1	-2.05	Significant at .05 level

From the table 2, it reveals that female students had moderately high-test anxiety with a mean score of 32.28 (SD = 8.27) before yoga intervention, which decreased to 30.18 (SD = 8.07) post-intervention, showing a significant difference ($t = 1.41$) though not statistically significant and therefore, proposed hypothesis has not been accepted. Their well-being, initially at an average level with a mean score of 16.30 with SD = 3.2, also improved significantly after the intervention 17.48 and the calculated t’ value of (-2.05) has been found significant at .05 level. Therefore, the hypotheses of no difference

in the pre and post test scores of wellbeing has not been accepted. These findings align with previous studies by Jain (2019) and Kaur A (2017), which also noted reduced exam anxiety following yoga practices. Techniques like Yoga Nidra, breath awareness, and meditation help alleviate physical tension and mental anxiety, while asanas and pranayama effectively manage anxiety and enhance overall well-being. Various studies support the efficacy of yoga, meditation, and relaxation practices in managing psychological disorders and improving physio-mental health.

Table 3:“Correlation of Coefficient between test anxiety and wellbeing of the female students”N=60

Variables	N	df (N-2)	r	Level of Significance
Test anxiety & Wellbeing	40	38	-.33	.05 *

From table 3, it has been observed that, the calculated r value-.33 indicates significant negative relationship between test anxiety and wellbeing of the female students and therefore, the null hypothesis has not been accepted. The finding of the study is in tune with the observation of Yalkin et.al (Yalkin E, Aral N, Guneds, C L, 2023), Chandla et. al (Chendla S S, Sood S, Dogra R, Sukla S K, Gupta S (2013).

Reasons for increased wellbeing may be because of the stimulating impact of endorphins which are known for producing a feeling of euphoria which may also result in reduced anxiety among the female students.

Thus, the study revealed that female undergraduate students preparing for postgraduate education had moderately

high anxiety levels and average well-being. Following a 12-week yoga intervention, there was a significant reduction in test anxiety, and well-being notably improved. The results indicate yoga's effectiveness in reducing test anxiety and enhancing overall well-being, with higher test anxiety being linked to lower well-being.

Educational & Policy Implication

Prana or loss of energy is often felt in body because of our incorrect habit of breathing. Female students, particularly during their growth years, may suffer from anaemia, affecting their vigour and well-being. Proper lung utilization through pranayama can enhance oxygen supply, aiding in waste elimination. Satkarmas purify the body, while dhyan (meditation) purifies the mind. Asanas increase oxygen intake, regenerating tissues and muscles, leading to rejuvenation of body, mind, and spirit. These practices can significantly reduce anxiety and improve physio-mental health, as observed in the study. The findings can inform prevention and intervention programs for test anxiety, enhancing student well-being. Non-pharmacological yogic interventions are recommended for boosting self-esteem, overall well-being, and academic performance, avoiding the side effects of anxiety medications.

Suggestions & Conclusion

Raising awareness about the negative impact of test anxiety and the importance of wellbeing among students, teachers, and other stakeholders is crucial. Teachers and

education providers should be encouraged to recognize and address test anxiety through simple relaxation practices. Integrating brief and straightforward yoga practices into morning assemblies can benefit interested students. Additionally, offering certificate and diploma courses in Yogic Science at educational institutions will provide students with the opportunity to learn and practice yoga in a scientific and systematic manner. The study highlights the therapeutic benefits of yogic interventions in reducing test anxiety and enhancing well-being among graduate students. The presence of moderately high-test anxiety suggests a need for professional counselling and healthcare support. Recognizing the importance of well-being for national development, policy makers need to emphasize integrating yoga courses and instructional materials into school curricula. This approach can significantly reduce test anxiety and improve overall well-being. Creating supportive environments for female students through systematic and regular yogic practices in educational institutions can help them realize their worth both at home and in society, fostering a less stressful learning environment.

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