OPEN ACCESS JOURNALS
Indiana Journal of Agriculture and Life Sciences
Abbreviate Tittle- Ind J Agri Life Sci
ISSN *(Online)*- 2583-1623
Journal Homepage Link- https://indianapublications.com/journal/IJALS
DOI- https://doi.org/10.5281/zenodo.17203097

INDIANA PUBLICATIONS
PRODUCTIVE AND QUALITY RESEARCH

Research Article

ICFFL Goa Conference|2025

Effects of Yogic Practices on Neuroticism Personality Traits. of College Students

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Article History
Received: 01.07.2025
Accepted: 20.08.2025
Published: 25.09.2025

Citation
Rajak, A. P., Singh, Y. K., Sahu, K. P. (2025). Effects of Yogic Practices on Neuroticism Personality Traits. of College Students. Goa Conference 2025 Fit for Life: Empowering Youth Through Physical Education, Sports and Traditional Sports. *Indiana Journal of Agriculture and Life Sciences,* 9-14. Indiana Publications.

Abstract: Yoga is a holistic practice known to influence mental and physical well-being, making it an effective tool for personal development. College students often face stress, academic pressure, and emotional challenges that influence their personality development. By engaging in regular yoga practice, students can foster traits such as emotional stability, mindfulness, resilience, and self-awareness. This study investigates the effects of yoga on the personality traits of college students, focusing on the neuroticism levels of college students. In this experimental study, 50 participants were randomly divided into two groups: an experimental group that participated in a 12-week yogic intervention and a control group that did not receive any intervention. Neuroticism was assessed using the Big Five Personality Inventory questionnaire before and after the intervention. Statistical analysis using Paired t-Test revealed significant reductions in neuroticism scores in the experimental group compared to the control group. The findings revealed significant improvements in emotional stability reduced neuroticism, indicating that yoga can positively influence personality traits. By integrating physical postures, breath control, mindfulness, and personalized yogic counselling, this approach offers a holistic method for improving mental health and fostering emotional stability. This study underscores yoga's potential as a transformative practice for personality development among college students. By fostering emotional stability, self-discipline, and adaptability, yoga can equip students with essential tools to navigate academic and personal challenges. Integrating yoga into college curricula may serve as an effective strategy for promoting holistic growth and mental well-being.

Keywords: Yoga, Neuroticism, Personality Traits

INTRODUCTION

Neuroticism is one of the five major dimensions of personality and is characterized by a predisposition to experience negative emotions, such as anxiety, anger, and depression (Costa & McCrae, 1992). Individuals with high levels of neuroticism often struggle with emotional regulation, making them more susceptible to stress and mental health challenges. Among college students, high neuroticism has been associated with academic underachievement, interpersonal difficulties, and an increased risk of developing psychological disorders (Ormel *et al.*, 2013; Rosellini & Brown, 2011).

The transition to college life is a critical period marked by new responsibilities, academic pressures, and social adjustments. These stressors can exacerbate neurotic tendencies, making it essential to explore effective interventions to mitigate their impact. Traditional approaches to managing neuroticism, such as psychotherapy and pharmacological treatments, are often limited by cost, accessibility, and potential side effects (Hofmann *et al.*, 2012). Consequently, there is growing interest in complementary and alternative interventions, including yoga.

Big Five Personality Traits framework, refers to the tendency to experience negative emotional states such as anxiety, fear, sadness, irritability, and self-doubt. Individuals with high neuroticism are prone to psychological distress, maladaptive coping strategies, and emotional instability, often impacting their quality of life and overall well-being (McCrae & Costa, 2008). In contrast, individuals with low neuroticism exhibit emotional resilience, calmness, and stability, enabling better adaptability to life challenges. Neuroticism is associated with mental health issues such as depression, anxiety disorders, and reduced emotional regulation, making it a significant area of psychological and therapeutic interventions (Lahey, 2009).

Yoga, an ancient Indian practice encompassing physical postures (Asanas), breathing techniques (Pranayama), and mindfulness-based relaxation methods, has gained global recognition as a holistic intervention for physical, mental, and emotional well-being. Emerging evidence suggests that yoga may be particularly effective in addressing traits associated with neuroticism by fostering emotional balance, stress resilience, and self-regulation. Through regular practice, yoga enhances parasympathetic nervous system activation, promoting a state of relaxation while mitigating excessive physiological arousal associated with neurotic tendencies (Telles *et al.*, 2012). Additionally, the introspective aspects of yoga encourage self-awareness and mindfulness, which help individuals manage emotional reactivity and negative thought patterns commonly seen in those with high neuroticism (Sauer-Zavala *et al.*, 2013).

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The relevance of yoga in mitigating neuroticism lies in its ability to address the psychological, physiological, and behavioural dimensions of this trait. Studies have shown that yoga practices such as Pranayama reduce cortisol levels, a biomarker of stress, while enhancing emotional resilience and reducing anxiety-related symptoms (Pascoe & Bauer, 2015). Similarly, relaxation techniques such as Shavasana and guided visualization help alleviate hyperarousal and intrusive thoughts, fostering a calm and grounded state of mind (Gupta *et al.*, 2018). Furthermore, the incorporation of yoga philosophy, such as Sankalpa (resolutions) and mindfulness practices, encourages individuals to develop positive coping mechanisms and achieve a balanced outlook on life.

The potential benefits of yoga in reducing neuroticism also extend to improving self-regulation, interpersonal relationships, and mental clarity. By promoting mind-body integration and cultivating self-discipline, yoga offers a sustainable, non-invasive intervention for emotional and psychological well-being, particularly for individuals with heightened neurotic traits.

Scientific Relevance Between Neuroticism and Yoga

Yoga, a mind-body intervention that integrates physical postures (asanas), breathing exercises (pranayama), and meditation, has shown promise as a holistic tool for addressing neuroticism. Research indicates that yoga can effectively regulate the physiological and psychological processes associated with this trait, making it relevant for improving emotional stability and mental well-being.

Reduction in Stress and Emotional Reactivity- High neuroticism is often characterized by chronic stress and emotional overreactivity. Yoga, through its emphasis on *parasympathetic activation, reduces cortisol levels and lowers stress markers. A meta-analysis of randomized controlled trials revealed that yoga interventions significantly reduced stress and anxiety, directly benefiting individuals with high neuroticism (Pascoe & Bauer, 2015). Specifically, pranayama techniques such as Nadi Shodhana and Bhastrika improve respiratory control and reduce autonomic hyperarousal, which are hallmarks of neuroticism. These practices help calm the mind and decrease the reactivity of the stress response system (Telles *et al.*, 2012).

Improved Emotional Regulation- Neurotic individuals often struggle with emotional regulation and are prone to maladaptive coping mechanisms. Yoga enhances *prefrontal cortex activation, which is critical for cognitive control and emotional regulation. Additionally, the mindfulness aspect of yoga fosters non-reactivity and acceptance of emotional experiences, reducing rumination and negative thought patterns. Studies have shown that **mindfulness-based yoga interventions* improve self-regulation and decrease emotional instability in individuals with high neuroticism (Sauer-Zavala *et al.*, 2013).

Enhancement of Self-Awareness and Mindfulness- Yoga encourages self-awareness and mindfulness, both of which are essential for managing the emotional volatility associated with neuroticism. By fostering present-moment awareness, yoga helps individuals detach from negative emotions and thoughts, enabling them to respond to challenges with greater resilience (Gard *et al.*, 2014). Practices like Shavasana and meditative visualization enhance mindfulness and provide tools for calming the mind, reducing the physiological symptoms associated with neurotic tendencies. Promotion of Psychological Resilience- Neuroticism is linked to lower psychological resilience and a greater likelihood of developing mood disorders. Regular yoga practice enhances resilience by promoting self-efficacy, emotional stability, and optimism. Philosophical components of yoga, such as Sankalpa (intention setting), encourage positive thinking and a sense of purpose, which are inversely related to neuroticism traits (Gupta *et al.*, 2018).

Physiological Balance Through Yoga- Neuroticism is associated with an imbalance between the sympathetic and parasympathetic nervous systems. Yoga helps restore this balance through asanas that improve body awareness and pranayama techniques that regulate autonomic function. For example, alternate nostril breathing (Nadi Shodhana) has been shown to activate the parasympathetic nervous system, reducing physiological arousal and promoting calmness (Goyal *et al.*, 2014).

Despite the growing evidence supporting yoga's mental health benefits, limited research has focused on its impact on personality traits such as neuroticism. Understanding this relationship is particularly relevant for college students, who are at a pivotal stage of personality development. This study aims to address this gap by examining the effects of a structured 12-week yoga and yogic counselling intervention on neuroticism levels among college students. By providing empirical evidence, this research seeks to inform the development of accessible, non-invasive strategies for promoting emotional resilience and mental health in young adults.

METHODOLOGY

Study Design and Setting

The study employed a randomized control design to investigate the effects of a yoga-based intervention on neuroticism traits as measured by a validated personality assessment tool. The study was conducted at the Rustamji Institute of Technology, BSF Academy, Tekanpur, located in Gwalior, Madhya Pradesh, India. Participants were randomly assigned to one of two groups: the Yoga Group (experimental group), which received a structured yoga intervention,

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and the Control Group, which did not receive any specific intervention. This setting provided a controlled environment for implementing and monitoring the intervention while minimizing external confounding factors.

Screening Criteria and Randomization

Eligible participants were screened based on predefined inclusion criteria. Random allocation of participants into the two groups was carried out using randomization software, ensuring an unbiased distribution of subjects. To maintain transparency and accuracy, a sequentially numbered system was employed during the randomization process. This methodological rigor ensured equal chances of allocation for every participant and minimized the risk of allocation bias.

Sample Size

The study included a total of 50 participants, with 25 participants allocated to the Yoga Group and 25 participants assigned to the Control Group. The equal allocation was designed to ensure statistical power for comparing the outcomes between the two groups.

Intervention

Participants in the Yoga Group received a structured yoga intervention program designed to promote emotional stability and reduce neuroticism-related tendencies. This intervention incorporated physical postures, breathing techniques, and relaxation practices, emphasizing holistic well-being. The Control Group, on the other hand, continued with their usual activities without any additional intervention. This design allowed for an evaluation of the intervention's effectiveness relative to the absence of treatment.

Data Collection Tools and Techniques

The primary tool used to measure the study outcomes was the Big Five Personality Inventory – SAKA (BFPI-SAKA), developed by Dr. Arun Kumar Singh and Dr. Ashok Kumar. The BFPI-SAKA is a widely accepted and validated 36-item inventory, extensively used in occupational and psychological research to assess personality traits. For this study, the focus was on neuroticism, a domain of personality that reflects emotional adjustment and stability.

Main points of BFPI-SAKA

The tool measures tendencies toward psychological distress, such as unrealistic ideas, maladaptive coping mechanisms, and excessive cravings.

High Scores: Indicative of emotional instability and characterized by traits such as nervousness, insecurity, emotional volatility, hypochondria, and inadequacy.

Low Scores: Represent emotional stability, with characteristics such as calmness, relaxation, hardiness, self-satisfaction, and confidence.

Assessment Points

Data collection was performed at two key time points

Baseline Assessment (Pre-Intervention): Conducted before the start of the intervention to establish initial personality profiles for all participants.

Post-Intervention Assessment (After 12 Weeks): Conducted at the end of the intervention to measure changes in neuroticism traits.

The structured timeline for assessments ensured a systematic evaluation of the intervention's effectiveness and its impact on personality traits.

Ethical Considerations

The study was conducted in compliance with ethical research standards and guidelines. Approval for the study was obtained from the Institutional Management Committee of the Rustamji Institute of Technology, BSF Academy, ensuring institutional oversight. Additionally, ethical clearance was granted by the Institutional Ethical Committee of LNIPE University under the reference number IEC/LNIPE/128/02. Participants were informed about the study's objectives, procedures, and their right to withdraw at any stage, ensuring informed consent and voluntary participation.

Participants

The study involved 50 college students aged 18-24, recruited from a university setting. Participants were randomly assigned to one of two groups:

- Experimental group (n=25): Engaged in a 12-week yogic intervention.
- Control group (n=25): Did not receive any intervention.

Inclusion criteria included the absence of severe mental health conditions and no prior experience with yoga. Participants provided informed consent, and the study was approved by the university's ethics committee. To ensure consistency, participants in both groups were asked to refrain from engaging in any new physical or psychological wellness programs during the study.

Procedure

- **Pre-Intervention Assessment**: Participants completed a neuroticism subscale from the Big Five Personality Inventory (BFPI). Additional demographic information, such as age, gender, and academic performance, was also collected to control for confounding variables.
- **Intervention**: The experimental group participated in yoga sessions and received yogic counselling

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three times per week for 12 weeks. Each session lasted 50 minutes 5 days in week and included:

Physical postures (Asanas): Aimed at improving physical flexibility, strength, and overall body awareness. The postures ranged from beginner to intermediate levels, ensuring accessibility and gradual progression Focused on flexibility, balance, and strength. Loosening Practice, Suryanamaskara, Tadasana, Ardhachakrasana, Padashthasana, Vakrasana, Sarvangasana, Saral matsyasana, Uttanpadasana, Markatasana, Bhujangasana, Dhanurasana,

Breath control (Pranayama): Focused on regulating physiological arousal and fostering a sense of calm. Bhastrika Pranayama, Bhramari Pranayama

Relaxation- Deep Relaxation Technique (DRT) is a yogic practice aimed at achieving profound physical and mental relaxation. It involves systematically relaxing different parts of the body while maintaining awareness, thereby promoting stress relief, emotional balance, and overall well-being. To begin, individuals lie down in Shavasana (Corpse Pose) in a quiet, comfortable place, closing their eyes and taking deep breaths to settle their body and mind. The practice involves progressive relaxation, starting with the toes and gradually moving upward through the legs, torso, arms, neck, and face, releasing tension from each area. Once the body is relaxed, attention shifts to the breath, observing its natural flow without control. Visualization of serene environments, such as a beach or forest, is often incorporated to deepen relaxation. Optional affirmations, such as "I am calm, I am peaceful," can further reinforce the state of tranquility. The session concludes with a gentle reawakening, where individuals gradually bring awareness back to their surroundings and reflect on their relaxed state before resuming daily activities. Typically lasting 10–20 minutes, DRT offers numerous benefits, including reduced muscle tension, lower blood pressure, improved sleep, and enhanced emotional stability. This practice is particularly effective in alleviating stress and anxiety, making it a valuable tool for mental and emotional well-being.

Yogic Counselling:

Yogic counselling is a holistic approach combining yogic principles and modern psychology to promote mental, emotional, and spiritual well-being. It emphasizes self-awareness, balance, and harmony through practices like asanas, pranayama, meditation, and mindfulness. The process involves personalized interventions, guided practices, and lifestyle adjustments, addressing challenges like stress, anxiety, depression, and lifestyle disorders. Rooted in the concept of *sattva* (balance), it fosters emotional regulation, resilience, and spiritual growth, offering a non-invasive and sustainable path to overall well-being

- Sankalp of Self-acceptance by swadhyay (self-actualization)
- Sankalp of Environmental mastery by developing quality like a yogi. (ramvanvas)
- Sankalp of Positive relations by chitta prasadan (maitri, karuna, mudita, upeksha)
- Sankalp of Personal growth by developing utsah, sahas, dhairya
- Sankalp of being Autonomous by enhancing self-confidence.
- Sankalp of self-realization for making purpose in life

The control group continued with their usual activities and received no specific intervention. To ensure that the absence of activity did not affect results, participants in the control group were contacted bi-weekly to maintain engagement in the study.

Post-Intervention Assessment: After 12 weeks, participants completed the neuroticism subscale again to measure changes. Additionally, qualitative feedback was gathered from the experimental group to understand their experiences and perceptions of the intervention.

Statistical Analysis

Data Analysis Paired t-tests were used to evaluate within-group differences in pre- and post-test scores. Independent t-tests were conducted to compare post-test scores between the experimental and control groups. A significance level of $p < 0.05$ was set.

FINDINGS

Group	Pre-Test Mean	Post-Test Mean	Mean Difference	t-value	p-value
Experimental	54.36	46.08	8.2	23.4	<0.000
Control	54.52	54.40	0.12	0.39	0.694

The paired t-test analysis revealed a significant reduction in neuroticism scores within the experimental group following the 12-week yoga intervention. The pre-test mean score for the experimental group was 54.36 (SD = 1.46), which decreased to 46.08 (SD = 0.86) post-intervention, with a mean difference of 8.28 ($t = 23.41$, $p < 0.000$). This substantial decrease suggests that yoga practices positively impacted emotional regulation and reduced neurotic tendencies among participants.

In contrast, the control group showed no significant change in neuroticism scores over the same period. Their pre-test mean score of 54.52 (SD = 1.55) was nearly identical to their post-test mean of 54.40 (SD

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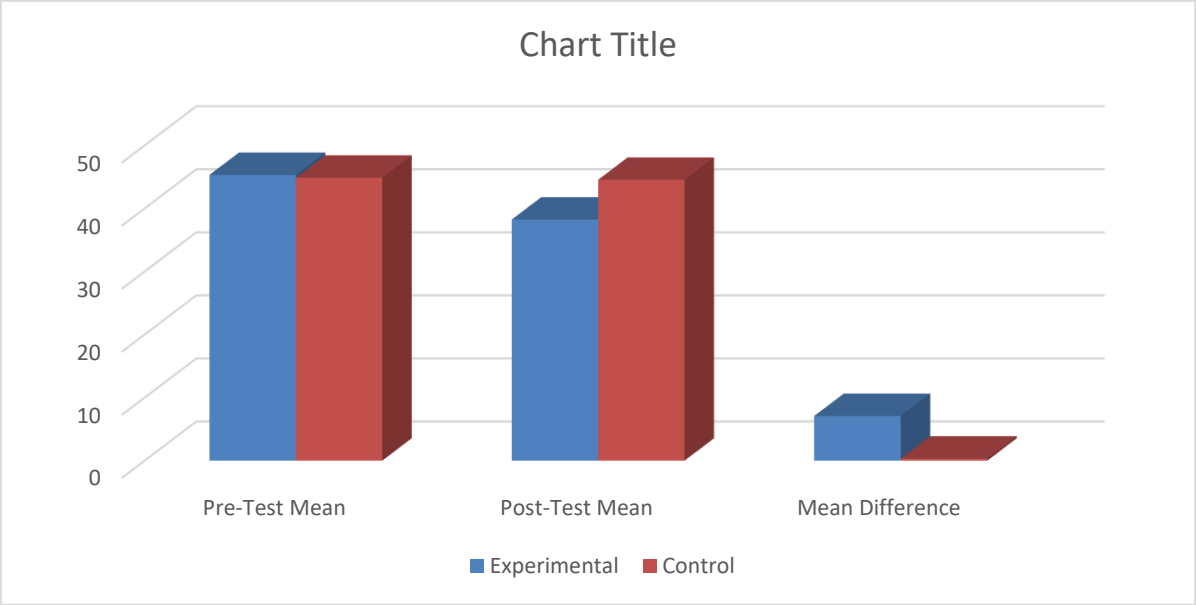
= 1.47), with a mean difference of 0.12 (t = 0.39, p = 0.694). This finding indicates that without an intervention, neuroticism traits remain relatively stable over time.

Graph



The bar chart above illustrates the pre-test and post-test neuroticism scores for both the experimental and control groups. It highlights the significant reduction in scores for the experimental group, while the control group remained relatively unchanged.

The results underscore the efficacy of yogic practices in mitigating neurotic traits, likely through stress reduction, enhanced mindfulness, and improved emotional regulation. By integrating physical, mental, and emotional exercises, yoga may address the core aspects of neuroticism, fostering greater psychological stability among college students.

DISCUSSION

This study supports the efficacy of yogic practices in reducing neuroticism among college students. The integration of physical, respiratory, mindfulness, and counselling components in yoga likely contributed to enhanced emotional regulation and reduced stress reactivity. These findings align with prior research highlighting yoga's role in improving mental health and emotional stability (Goyal *et al.*, 2014; Field, 2011).

The experimental group's qualitative feedback further illuminated the psychological benefits of yogic practices. Participants reported increased self-awareness, improved focus, and a greater sense of inner peace. These subjective experiences complement the quantitative findings, offering a holistic view of yoga's impact.

The absence of changes in the control group underscores the necessity of structured interventions for managing neurotic traits. The findings have practical implications for integrating yoga into university wellness programs. By offering accessible and cost-effective tools for emotional regulation, educational institutions can better support students' mental health.

Mechanisms of Change

The mechanisms through which yogic Practices impact neuroticism may include:

- Physiological Regulation: Breath control exercises reduce autonomic arousal, promoting relaxation and emotional stability.
- Cognitive Restructuring: Mindfulness practices encourage non-judgmental awareness, reducing the cognitive distortions often associated with neuroticism.
- Behavioral Activation: Regular physical activity inherent in yoga may boost mood and decrease feelings of helplessness.
- Personalized Guidance: Yogic counselling helps participants explore their emotions and develop strategies for coping with stress, fostering long-term resilience.

Limitations

While the findings are promising, the study has several limitations:

- Sample Size: The relatively small sample limits the generalizability of results. Larger-scale studies are needed to validate these findings.
- Self-Reported Measures: Reliance on self-reported data may introduce bias. Future studies could incorporate physiological and neurobiological assessments.

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- Short-Term Intervention: While the 12-week period yielded significant results, the long-term sustainability of these effects remains unclear.

Future research should address these limitations and explore the impact of yogic practices on other personality traits and mental health outcomes. Additionally, comparative studies examining yoga alongside other interventions, such as cognitive-behavioural therapy, could provide valuable insights.

CONCLUSION

A 12-week yoga intervention significantly reduced neuroticism levels in college students, highlighting its potential as a cost-effective and accessible mental health strategy. The integration of yogic practices into academic settings could foster emotional well-being and equip students with tools to navigate the challenges of higher education. These findings contribute to the growing body of evidence supporting the role of holistic practices in enhancing mental health.

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