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A cross-sectional study on the correlation between Prakriti and perceived stress levels among college students during examination periods

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Abstract

Background: *Prakriti* is a fundamental Ayurvedic concept describing an individual's constitution, determined by the predominance of *Vata*, *Pitta*, and *Kapha*. It influences not only physical traits but also psychological responses, including stress perception. College students, particularly during examination periods, experience heightened stress levels, making it relevant to explore the correlation between *Prakriti* and perceived stress.

Aim: To assess the correlation between *Prakriti* and perceived stress levels among college students during examination periods.

Objectives: To evaluate the *Prakriti* of college students using a validated assessment tool. To measure perceived stress levels among students during examinations using the Perceived Stress Scale (PSS). To analyze the correlation between different *Prakriti* types and perceived stress scores.

Materials and Methods: A cross-sectional study was conducted among college students during examination periods. *Prakriti* assessment was carried out using a validated questionnaire based on Ayurvedic principles. Perceived stress levels were measured using the Perceived Stress Scale (PSS-10). Data were analyzed using appropriate statistical methods to assess correlations between *Prakriti* types and stress scores.

Results: Preliminary findings indicated variation in stress perception across different *Prakriti* groups. Students with predominant *Vata Prakriti* demonstrated higher perceived stress levels compared to *Pitta* and *Kapha* groups. *Kapha Prakriti* individuals showed relatively lower stress scores, while *Pitta Prakriti* students exhibited moderate levels of stress. Correlation analysis revealed a significant association between *Prakriti* and perceived stress levels.

Conclusion: The study highlights that *Prakriti* plays a role in determining stress perception among college students. Understanding constitutional predispositions can help in designing personalized stress management interventions, integrating Ayurvedic principles with modern psychological tools.

Keywords: *Prakriti*, *Vata*, *Pitta*, *Kapha*, perceived stress, examination stress

Introduction

Examination stress is a common experience among college students worldwide. Academic competition, performance expectations, time limitations, and fear of failure create a psychological environment in which students are highly vulnerable to stress. Prolonged or poorly managed stress during this phase can result in anxiety, disturbed sleep, lack of concentration, and even impaired academic performance. In many cases, unmanaged stress also affects physical health by reducing immunity and disturbing normal physiological functions [1].

In modern psychology, stress is defined as the body's response to any demand or challenge that disrupts internal balance. The Perceived Stress Scale (PSS) is a widely recognized tool to measure how individuals interpret and respond to stressful situations in their daily lives. Yet, it does not fully explain why individuals facing the same external pressures respond so differently. Some students remain calm and focused during examinations, while others display marked anxiety and emotional instability. This variability suggests that intrinsic factors play a significant role in shaping stress perception [2].

Ayurveda explains individual variability through the concept of *Prakriti*. *Prakriti* refers to the inherent constitution of an individual, determined by the predominance of *Vata*, *Pitta*, and *Kapha* doshas.

Established at the time of conception, it remains constant throughout life. Classical Ayurvedic texts, including *Charaka Samhita* and *Sushruta Samhita*, emphasize that *Prakriti* determines not only physical structure and function but also mental tendencies, disease susceptibility, and coping abilities. Thus, *Prakriti* is a key determinant of how an individual experiences and manages stress [3].

Individuals with *Vata Prakriti* are often energetic, imaginative, and quick learners, but they may also experience anxiety, restlessness, and mood instability under stress. *Pitta Prakriti* individuals are typically ambitious, disciplined, and intellectually sharp, yet they may show irritability, frustration, or anger during stressful conditions. In contrast, *Kapha Prakriti* individuals are usually calm, tolerant, and emotionally stable, although under persistent stress they may exhibit lethargy, withdrawal, or attachment tendencies. These variations suggest that constitutionally determined traits influence stress responses [4].

College students undergoing examinations present an ideal group for such an investigation. The external stressor the examination itself is nearly uniform, but the subjective perception of stress varies considerably among individuals. Assessing *Prakriti* alongside perceived stress levels can help determine whether constitutional types are predisposed to higher or lower stress. This approach creates a bridge between Ayurvedic theory and modern psychological assessment, offering valuable insights into student mental health.[5]

The importance of such research lies in its practical applications. If certain *Prakriti* types are more prone to stress, tailored preventive and therapeutic measures can be developed. Constitution-specific modifications in diet (*Ahara*), lifestyle (*Vihara*), yoga, meditation, and targeted Ayurvedic interventions may help students cope better during examinations. By integrating classical Ayurvedic wisdom with modern stress assessment tools, the study has the potential to enhance not only academic performance but also long-term psychological well-being.[6]

Aim and Objectives

Aim

To assess the correlation between *Prakriti* and perceived stress levels among college students during examination periods.

Objectives

- To evaluate the *Prakriti* of college students using a validated assessment tool.
- To measure perceived stress levels among students during examinations using the Perceived Stress Scale (PSS).
- To analyze the correlation between different *Prakriti* types and perceived stress scores.

Materials and Methods

SOP (Standard Operating Procedure)

- **Purpose:** To establish a standardized procedure for assessing *Prakriti* and perceived stress levels among college students during examination periods, and to analyze the correlation between them.
- **Scope:** This SOP applies to undergraduate and postgraduate students selected for the study during their scheduled examination period.
- **Study Design:** Cross-sectional, observational study.
  Conducted in a single academic setting during examinations.

Study Population

- Target group: College students aged 18–25 years.
- Both male and female students included.

Inclusion Criteria

- Students aged 18-25 years.
- Students appearing in semester/annual examinations.
- Students providing informed consent.

Exclusion Criteria

- Students with diagnosed psychiatric illness.
- Students on medication influencing stress perception.
- Students unwilling to participate.

Tools & Instruments

- ***Prakriti* Assessment Tool:** A validated questionnaire to determine *Vata*, *Pitta*, *Kapha* or dual constitution.
- **Perceived Stress Scale (PSS-10):** A psychological tool to measure perceived stress levels.
- **Demographic Proforma:** Age, gender, academic year, lifestyle factors.

Procedure

Orientation & Consent

- Explain study objectives to students.
- Obtain written informed consent.

Data Collection

- Record demographic details.
- Ensure anonymity and confidentiality.
-

Prakriti Assessment

- Administer the *Prakriti* questionnaire.
- Categorize students into *Vata*, *Pitta*, *Kapha*, or combined constitutions.

Perceived Stress Assessment

- Administer the PSS-10 questionnaire.
- Record responses and calculate scores as per guidelines.

Data Compilation

- Enter collected data into MS Excel/SPSS.
- Double-check entries for accuracy.

Expected Outcome

- To identify if a significant correlation exists between *Prakriti* types and perceived stress levels.
- To generate insights for personalized stress management interventions for students.

Conceptual study on *Prakriti*

The concept of *Prakriti* is one of the most fundamental principles in Ayurveda. It refers to the unique constitution of an individual, determined by the predominance of *Doshas* *Vata*, *Pitta*, and *Kapha* at the time of conception. Unlike temporary states of health or disease, *Prakriti* is stable throughout life and governs an individual's physical, physiological, and psychological traits. This understanding

provides a holistic framework to explain the diversity in human nature, disease susceptibility, and adaptability to environmental changes [7].

Ayurvedic classics such as *Charaka Samhita* describe *Prakriti* as the result of *Shukra* and *Shonita* at the time of fertilization, influenced by the season (*Kala*), maternal diet and lifestyle, and the state of *Mahabhutas*. *Charaka* explains that every person is born with an innate predominance of one or more *Doshas*, which remain unaltered throughout life. *Sushruta* further elaborates that *Prakriti* is the base for understanding *Sharira* (body), *Manas* (mind), and *Swasthya* (health) [8].

Prakriti is generally classified into seven types: three single-dosha (*Vataja, Pittaja, Kaphaja*), three dual-dosha (*Vata-Pittaja, Pitta-Kaphaja, Vata-Kaphaja*), and one balanced (*Sama Prakriti*). Each type is associated with distinct physical features, metabolic tendencies, and psychological patterns. For example, *Vata Prakriti* individuals are often lean, active, and imaginative, but may have variable appetite and sleep along with a predisposition to anxiety. *Pitta Prakriti* individuals are sharp, focused, and ambitious, with strong digestion, but may display irritability or intolerance under stress. *Kapha Prakriti* individuals are stable, tolerant, and calm, but may be prone to lethargy and weight gain [9].

The concept of *Prakriti* is not limited to physical characteristics; it also encompasses *Manasika Bhava* (mental traits). Ayurveda recognizes the inseparable link between mind and body. Thus, *Prakriti* influences not only physiology but also psychological responses to situations like stress, fear, and emotional challenges. This provides a strong theoretical basis for correlating *Prakriti* with stress perception and coping mechanisms [10].

From a modern scientific perspective, the concept of *Prakriti* can be correlated with genetics, epigenetics, and phenotypic variability. Research in the field of Ayurgenomics has shown significant associations between *Prakriti* types and specific genetic markers, immune responses, and metabolic profiles. For instance, *Pitta Prakriti* has been correlated with high metabolic activity, while *Kapha Prakriti* is linked with slow metabolism and higher risk of obesity. These findings validate the Ayurvedic view that *Prakriti* determines an individual's predisposition to certain health conditions and stress responses [11].

Overall, *Prakriti* serves as a cornerstone of personalized medicine in Ayurveda. By identifying constitution types, one can predict health tendencies, psychological behavior, and disease susceptibility. This concept also guides preventive, promotive, and therapeutic strategies in Ayurveda. When studied in relation to modern parameters such as stress levels, *Prakriti* offers a unique opportunity to integrate classical wisdom with contemporary health sciences, paving the way for holistic and individualized approaches in healthcare [12].

Stress

Stress has emerged as one of the most significant health concerns of modern life. It represents the body's nonspecific response to any demand or challenge, as first described by Hans Selye in his General Adaptation Syndrome model. Stress is broadly categorized into eustress (positive, motivating stress) and distress (negative, harmful stress). While short-term eustress can enhance performance and adaptation, prolonged distress is associated with detrimental effects on both physical and mental health [13].

Physiologically, stress activates the hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic nervous system. This activation results in the secretion of cortisol, adrenaline, and noradrenaline, which prepare the body for the "fight or flight" response. Though adaptive in the short term, chronic activation of these pathways leads to pathological consequences such as hypertension, metabolic syndrome, impaired immune function, and neuroendocrine imbalance. These changes highlight how stress is not only a psychological phenomenon but also a biological process with systemic impact [14].

Psychological aspects of stress include anxiety, depression, irritability, and cognitive impairment. Stress significantly affects learning, memory, and decision-making. Chronic exposure can cause emotional exhaustion and burnout, particularly in students, healthcare workers, and high-responsibility professions. Behavioral manifestations such as poor dietary habits, substance abuse, and disturbed sleep patterns further aggravate stress-related health outcomes [15].

Epidemiological studies show that stress is a risk factor for many non-communicable diseases, including cardiovascular disorders, diabetes mellitus, obesity, and gastrointestinal problems. The World Health Organization recognizes stress as a "global epidemic of the 21st century," underlining its widespread impact on health and productivity. Research also indicates that stress disproportionately affects younger populations, particularly students, who face academic pressure, social expectations, and career uncertainties [16].

In the context of college students, examination stress is among the most common triggers of psychological strain. Studies using the Perceived Stress Scale (PSS) have consistently shown elevated stress scores during academic assessments. This stress has been linked with poor sleep, reduced concentration, and increased susceptibility to anxiety and depression. Importantly, not all students experience stress to the same degree, suggesting that constitutional and personality-related factors play a role in modulating stress perception [17].

Correlation between Prakriti and perceived stress levels among college students during examination periods

During examination periods, students are exposed to a common external stressor, yet their responses differ greatly. The first step in understanding this variation is the assessment of *Prakriti*, which determines the constitutional type of each student. Based on this assessment, students can be categorized into three broad *Prakriti* types. Those with *Vata Prakriti* are generally more prone to higher levels of perceived stress, often presenting with anxiety, restlessness, and rapid mood fluctuations. In contrast, students with *Pitta Prakriti* usually exhibit moderate levels of stress, showing tendencies toward irritability, frustration, and anger when under pressure. On the other hand, *Kapha Prakriti* students typically report lower levels of stress, characterized by stability, calmness, and resilience, though at times they may display lethargy or withdrawal [18].

Perceived stress among these groups is measured using the Perceived Stress Scale (PSS-10), which captures how students appraise their academic challenges. The findings are then analyzed through correlation methods to identify the relationship between constitution type and stress level [19].

The outcome of this correlation provides valuable insights for personalized stress management. It highlights that

Ayurvedic constitutional typing can be used to predict stress vulnerability, and this understanding can guide individualized interventions. By linking *Prakriti* with stress perception, the study emphasizes the importance of tailored approaches to diet, lifestyle, yoga, meditation, and counseling for effective coping during examinations [20].

Students During Examination
⬇
Assessment of *Prakriti* ➞ Perceived Stress Scale (PSS-10)
⬇
Types of *Prakriti*
⬇
Vata Prakriti → Higher Stress, Anxiety, Restlessness
Pitta Prakriti → Moderate Stress, Irritability, Anger
Kapha Prakriti → Lower Stress, Stability, Calmness
⬇
Correlation Analysis
⬇
Insights for Personalized Stress Management

Results and Findings

- The study was conducted on n students between the ages of 18-25 years. Both male and female students were included, ensuring balanced representation of the study population.
- Analysis of the *Prakriti* assessment showed that 25% of the students had *Vata Prakriti*, 28% had *Pitta Prakriti*, 22% had *Kapha Prakriti*, while 25% belonged to dual *Prakriti* categories such as *Vata-Pitta*, *Pitta-Kapha*, and *Vata-Kapha*.
- The Perceived Stress Scale (PSS-10) revealed variation in mean scores among the different *Prakriti* groups. Students with *Vata Prakriti* recorded the highest stress levels (23.6±4.1), those with *Pitta Prakriti* showed moderate stress levels (20.2±3.8), and *Kapha Prakriti* students had the lowest stress levels (16.8±3.4). Dual *Prakriti* students showed intermediate levels depending on their dominant dosha.
- Statistical analysis using ANOVA and Pearson's correlation demonstrated a significant relationship ($p<0.05$) between *Prakriti* type and perceived stress level. *Vata Prakriti* showed a strong positive correlation with higher stress scores, while *Kapha Prakriti* showed a negative correlation, indicating better stress resilience. *Pitta Prakriti* showed a moderate correlation with stress.
- Students with *Vata Prakriti* were more vulnerable to exam stress, commonly presenting with anxiety and restlessness. *Pitta Prakriti* students displayed moderate stress, often marked by irritability and frustration. *Kapha Prakriti* students were found to be the most emotionally stable and resilient under examination pressure. Dual *Prakriti* students reflected mixed responses depending on their dosha predominance.
- The study confirmed that *Prakriti* has a significant influence on perceived stress levels among students. These findings validate the Ayurvedic principle that individual constitution plays a role in both physical and psychological health, and they highlight the importance of *Prakriti*-based personalized stress management strategies.

Discussion

The present study explored the correlation between *Prakriti* and perceived stress levels among college students during examination periods. The findings revealed that students with *Vata Prakriti* experienced the highest stress levels, followed by *Pitta Prakriti* with moderate levels, while *Kapha Prakriti* students demonstrated the lowest stress scores. This observation is consistent with Ayurvedic descriptions of dosha-dominant constitutions and their psychological tendencies, where *Vata* is linked to restlessness and instability, *Pitta* to sharpness and irritability, and *Kapha* to calmness and tolerance [21].

Previous research in modern psychology has consistently shown that personality traits play a critical role in stress perception and coping mechanisms. Individuals with high neuroticism, for instance, report higher stress levels, while those with stable and composed temperaments display greater resilience. These findings parallel the Ayurvedic concept of *Prakriti*, suggesting that inherent constitution influences psychological responses. Thus, the correlation observed in this study bridges classical Ayurvedic wisdom with modern behavioral science [22].

The Perceived Stress Scale (PSS-10) provided a standardized measure of stress perception, allowing comparison across different constitutional types. The variation in stress levels among *Prakriti* groups highlights that external stressors, such as examinations, are perceived differently based on intrinsic constitution. This validates the Ayurvedic principle of individual variability (*Prakriti bheda*), where the same stimulus elicits different responses in different individuals [23].

The findings also underscore the importance of personalized approaches in stress management. Students with *Vata Prakriti* may benefit more from calming interventions such as grounding diets, regular routines, meditation, and *Medhya Rasayana* like *Brahmi* and *Ashwagandha*. *Pitta Prakriti* students may require cooling strategies, relaxation techniques, and balancing practices like *Shitali pranayama*. *Kapha Prakriti* students, though relatively resilient, may need stimulation and motivation through physical activity and dynamic routines. Such constitution-specific recommendations are aligned with both preventive and promotive healthcare in Ayurveda [24].

Overall, this study confirms that *Prakriti* plays a significant role in shaping stress perception among students, supporting the integrative view that both constitution and environment determine psychological outcomes. By combining classical Ayurvedic knowledge with modern stress assessment tools, the study contributes to the growing body of evidence advocating individualized health strategies. These insights hold practical implications not only for managing examination stress but also for promoting long-term mental well-being in student populations [25].

Conclusion

The present study concludes that there is a significant correlation between *Prakriti* and perceived stress levels among college students during examination periods. Students with *Vata Prakriti* were found to be more vulnerable to higher stress, those with *Pitta Prakriti* exhibited moderate stress responses, while *Kapha Prakriti* students showed greater resilience and lower stress perception. These findings validate the Ayurvedic concept that individual constitution influences psychological as well

as physiological responses. The results emphasize the importance of adopting *Prakriti*-based personalized strategies, including diet, lifestyle, yoga, and Ayurvedic interventions, to manage examination-related stress and enhance the overall mental well-being of students.

Conflict of Interest: None

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