

## Impact of Mindfulness Based Interventions on Stress Reduction and Well-being in College Students

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### ABSTRACT

This study investigates the impact of Mindfulness-Based Interventions (MBIs) on stress reduction and psychological well-being among college students, particularly within the competitive academic environment of Ranchi, Jharkhand. As students navigate significant academic pressure, social stress, and future-related anxiety, this research examines how transitioning from "mindlessness" to "mindfulness" through techniques like sensory grounding and mindful breathing can facilitate better mental health outcomes. Using a purposive sampling method, a sample of 80 college students (40 male, 40 female) from Ranchi and Jamshedpur was categorized into MBI and Non-MBI subgroups. Data were collected using the Perceived Stress Scale (PSS-10) and the Psychological Well-being Scale (PWB). Statistical analysis via t-tests revealed that students engaged in MBIs reported significantly lower perceived stress ( $M = 18.74$  vs.  $28.42$ ) and higher psychological well-being ( $M = 195.19$  vs.  $161.87$ ) compared to their non-MBI peers. Furthermore, a strong negative correlation ( $r = -0.704$ ) was found between stress and well-being, indicating that stress reduction is foundational to student flourishing. Significant gender differences also emerged, with female students reporting higher stress levels and lower well-being than males. The study concludes that integrating accessible, culturally sensitive mindfulness practices into university wellness programs can foster academic success and psychological resilience, helping students transition from languishing to flourishing.

**Keywords:** *Mindfulness-Based Interventions (MBIs), Perceived Stress, College Students, Well-being, Academic Stress, Mental Health*

In a fast-growing city like Ranchi, which is the capital of Jharkhand state and also an education hub, the life of a college student is a balancing act. From the crowded classrooms of universities and colleges to the quiet corners of the libraries, students are constantly navigating a world that demands more from them every day. We often talk about "college life" as a time of freedom, but for many, it is a period of intense pressure. To understand how students survive and thrive in this environment, we have to look at three things: the nature of their stress, the quality of their well-being, and the power of mindfulness.

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### Stress

Stress is the body's natural physical, mental, or emotional reaction to challenges, demands, or perceived threats. Stress isn't just one feeling. It's a reaction to the world around us. For a youth, stress usually comes in three distinct flavors:

- **Academic Stress:** This is the most common - the fear of a low CGPA, the pressure of competitive exams like NEET, NET, JPSC or UPSC, and the endless cycle of assignments.
- **Social Stress:** In the age of Instagram and Facebook, students feel a constant need to "fit in." The fear of missing out (FOMO) or the pressure to look successful can be just as draining as a math exam.
- **Future Anxiety:** This is a "silent stress." It's the worry about what happens after graduation. Will there be a job? Will I have to leave my home to find success?

When these pressures gathered, they create distress, which wears down a student's immune system and mental clarity. On the other side, we have eustress - the "good" kind of tension that gives us the energy to perform or finish a project. The goal of this paper is to see how mindfulness helps students turn negative distress into manageable energy.

### Well-being

We often think well-being just means "not being sick," but it is much more than that. In this study, we look at Holistic Well-being. This includes:

1. **Emotional Balance:** Being able to bounce back after a bad day.
2. **Focus and Clarity:** The ability to sit down and study without wandering the mind.
3. **Physical Calm:** Feeling relaxed in the body, without the constant headaches or tight shoulders that stress usually brings.

### Mindfulness

Mindfulness is the practice of intentionally focusing on the present moment - thoughts, sensations, and surroundings - with acceptance and without judgment. This is where Mindfulness-Based Interventions (MBIs) come in. While the term sounds clinical, the practice is very natural. Mindfulness is simply "paying attention on purpose." In the context of a student's life, this doesn't always happen in a yoga studio. It can take many forms:

- **Sensory Grounding:** Instead of worrying about tomorrow, a student might take a moment to truly listen to the sounds at any religious place or feel the cool breeze at any dam or park. This "grounding" snaps the brain out of a stress loop.
- **Mindful Eating:** In a rush to get to coaching classes, many students swallow their food without tasting it. Practicing mindfulness means slowing down and actually experiencing the meal, which calms the digestive system.
- **Digital Detox:** Choosing to put the phone away for thirty minutes to just "be" is a modern form of mindfulness that protects the brain from information overload.
- **Traditional Practices:** Many students in Jharkhand already practice *Pranayama* (breath control) or *Dhyana* (meditation) as part of their cultural or religious heritage. These are some of the most effective MBIs available.

### Significance of the study

The city of Ranchi is at a crossroads. It is shifting from a quiet town to a busy capital. Our students are caught in the middle of this shift. This paper asks a simple question: *Do the students who take a few moments every day to be "mindful", whether through prayer, yoga, or simple quiet reflection, handle the chaos of Ranchi life better than those who don't?* By

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looking at real students in our local colleges, we can prove that mental well-being isn't a luxury. It is a tool that every student already has the power to use.

### REVIEW OF LITERATURE

**Galante et al. (2021)** reported on the "Mindful Student Study" (MSS), which provided an 8-week mindfulness course specifically adapted for university students. The study found that the intervention increased resilience to stress, particularly during the high-pressure summer examination period. Students who participated in the mindfulness sessions maintained better mental health and lower distress levels compared to those receiving standard student support.

**Bai et al. (2020)** utilized ecological momentary assessment (EMA) to study the daily stress responses of college students undergoing mindfulness training. Over a 6-week period, the study found that students in the mindfulness group reported lower levels of stress and more positive affect on a day-to-day basis. This research demonstrated that mindfulness training helps attenuate the impact of daily hassles, such as family stress and academic deadlines, across the academic semester.

**Dawson et al. (2020)** performed a comprehensive systematic review and meta-analysis of 149 randomized controlled trials focusing on MBIs for university students. The analysis confirmed that MBIs have a "moderate" effect size in reducing stress and a "small-to-moderate" effect in improving psychological well-being. The researchers noted that while both in-person and digital formats are effective, the benefits are most pronounced when the interventions are structured and consistently practiced.

**Martínez-Rubio et al. (2020)** examined the relationship between mindfulness and academic burnout in a large sample of 1,013 Spanish university students. The study used the Perceived Stress Scale (PSS) and found that perceived stress acts as a critical intermediary. Higher mindfulness scores were directly correlated with lower stress levels, which in turn significantly reduced the risk of all three subtypes of academic burnout: overload, lack of development, and neglect.

**Schuman-Olivier et al. (2020)** explored the "Mindfulness Training for Living Well" (MTLW) program, emphasizing its role in treating anxiety and stress-related disorders. Their research highlighted that mindfulness facilitates a shift from reactive to reflective states, allowing students to manage academic pressures without being overwhelmed by "future anxiety" or "rumination." The study concluded that such interventions significantly enhance emotional regulation and overall mental health.

**Huberty et al. (2019)** conducted a randomized controlled trial (RCT) involving 88 college students to test the efficacy of the "Calm" smartphone application. Participants were asked to practice mindfulness for at least 10 minutes daily for 8 weeks. The study found that the intervention group showed a significant reduction in perceived stress and an increase in self-compassion compared to the control group. These findings suggest that consumer-based mobile apps are effective and scalable tools for reducing stress in university settings.

### METHODOLOGY

#### *Objectives*

1. To examine the impact of mindfulness-based interventions (MBI and Non-MBI) on stress reduction and well-being among college students.

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2. To examine the impact of gender (male and female) on stress and well-being among college students.
3. To study the relationship between stress and well-being among college students.

### *Hypotheses*

1. There will be significant impact of mindfulness-based interventions on stress reduction and well-being among college students.
2. There will be significant impact of gender on stress and well-being among college students.
3. There will be significant relationship between stress and well-being among college students.

### *Participants*

The study consisted of 80 college students from Ranchi and Jamshedpur. The sample included an equal number of male and female students from different colleges and institutions. The participants were selected using a purposive sampling method. Students were categorised on the basis of MBI and Non-MBI, students who are involved in mindfulness-based activities and not involved in mindfulness-based activities.

*Table 01 Sample Design*

	Male	Female
<b>MBI</b>	20	20
<b>Non-MBI</b>	20	20
<b>Total</b>	40	40
<b>Total</b>	80	

### *Tools*

- **Perceived stress scale-PSS (Cohen, 1983):** The tool is designed by Sheldon Cohen in 1983. It is a self-reported 10 item questionnaires. Response is taken on a five-point Likert scale ranging from never, almost never, sometimes, fairly often to very often. Score range is 0-40. It is a measure of the degree to which situations of one's life is appraised as stressful. It has 3 versions- a 14 item, a 10 item and a 4 item. Its psychometric properties were investigated by confirmatory factor analysis (construct validity), Chronbach's alpha (reliability) and by investigating relations with DASS-21 scores. A satisfactory Chronbach's alpha values (0.82) for Perceived stress scale (PSS)-14 and Perceived stress scale (PSS)-10 and a marginal satisfactory values of Perceived stress scale (PSS)-4 (0.69) has been found.
- **Psychological well-being scale – PWB (Sisodia and Chowdhary, 2012):** This scale has developed by Dr. Devendra Singh Sisodia and Ms. Pooja Choudhary (2019). The scale consists 50 statements with five multiple options respectively “Strongly Agree”, “Agree”, “Undecided”, “Disagree” and “Strongly Disagree”. Test is useful 16 to 60 years, students, working persons, housewives and some retired persons. The Psychological Wellbeing Scale is made up of the several factors as Satisfaction, Efficiency, Sociability, Mental Health and Interpersonal Relation. Reliability measured through test-retest method and internal consistency method with is respectively 0.87 and 0.90. Validity is measured through the external criteria and coefficient obtained was 0.94. Reliability and validity of this scale is high. Item wise scoring is respectively 5, 4, 3, 2 & 1. High score on this scale indicates extremely high psychological well-being. Low score on this scale indicates extremely low

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psychological well-being. After getting the total raw score the level of psychological wellbeing is interpreted from extremely high to extremely low by converting the raw score in to Z score.

### Statistical Analysis

To test the hypotheses, t test was implemented on collected data to find out the difference and pearson r was calculated to correlation.

## RESULT

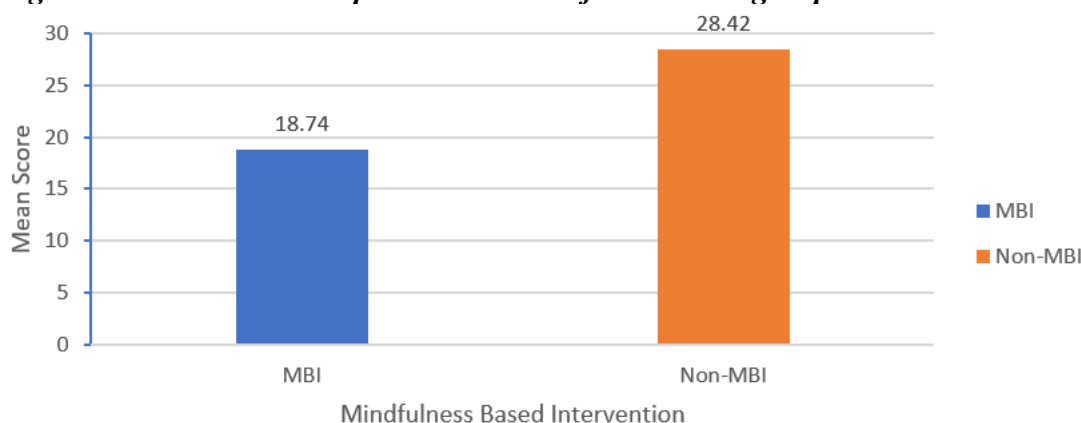
### Impact of mindfulness-based interventions on perceived stress and psychological well-being

**Table 02 Influence of MBI on Perceived Stress (PSS)**

Subgroups	Mean	SD	Mean difference	df	t
MBI	18.74	4.42	9.68	78	10.57**
Non-MBI	28.42	3.74			

\*\*p < .01, NS: Not Significant

**Figure 01 Mean scores on perceived stress of student subgroups with MBI and non-MBI**



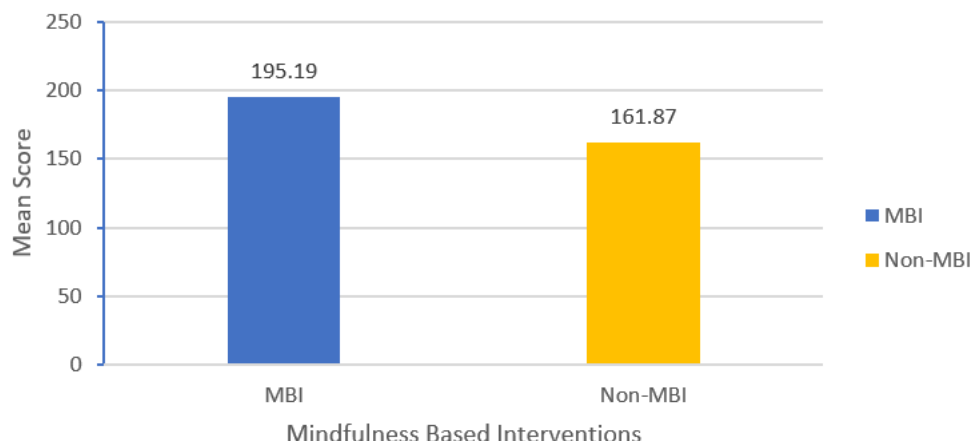
From table 02 and figure 01, it is clear that, the students' subgroup involved in mindfulness-based activities scored lower in stress (M=18.74) compare to students not involved in these activities (M=28.42). Mean difference was found 9.68 and the t-value was found 10.57, which is significant at 0.01 level. It indicated influence of MBI activities on perceived stress.

**Table 03 Influence of MBI on Psychological Well-being (PWB)**

Subgroups	Mean	SD	Mean difference	df	t
MBI	195.19	20.72	33.32	78	8.11**
Non-MBI	161.87	15.66			

\*\*p < .01, NS: Not Significant, MBI: Mindfulness Based Interventions, Non-MBI: No Mindfulness Based Interventions

**Figure 02 Mean scores on psychological well-being of student subgroups with MBI and non-MBI**



From table 03 and figure 02, it is clear that, the students' subgroup involved in mindfulness-based activities scored higher (M=195.19) in psychological well-being compare to students not involved in these activities (M=161.87). Mean difference was found 33.32 and the t-value was found 8.11, which is significant at 0.01 level. It indicated influence of MBI activities on psychological well-being.

Hence, the hypothesis that, there will be significant impact of mindfulness-based interventions on stress reduction and well-being among college students, accepted here.

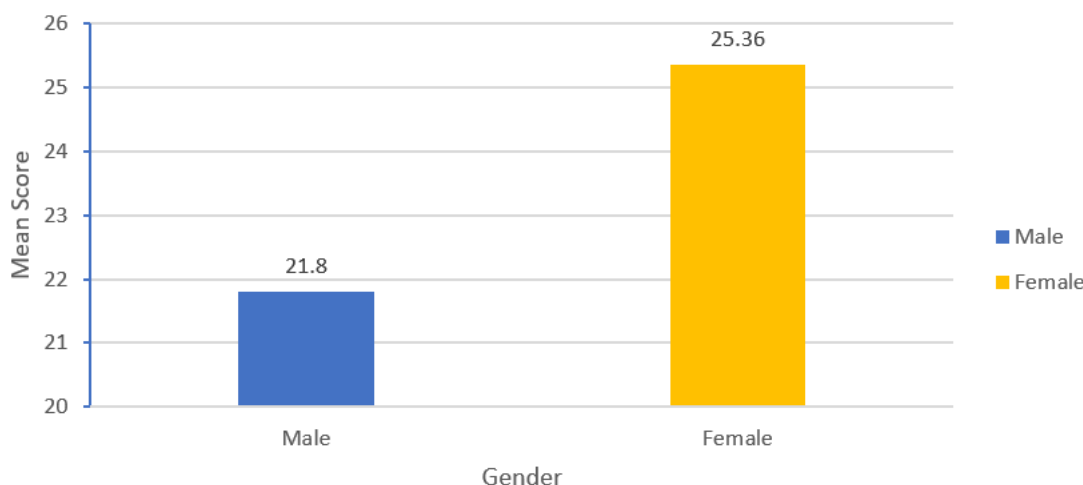
**Impact of gender on perceived stress and psychological well-being**

**Table 04 Influence of Gender on Perceived Stress (PSS)**

Subgroups	Mean	SD	Mean difference	df	t
Male	21.80	6.67	3.55	78	2.59**
Female	25.36	5.54			

\*\*p < .01, NS: Not Significant

**Figure 03 Mean scores on perceived stress of male and female subgroups of students**



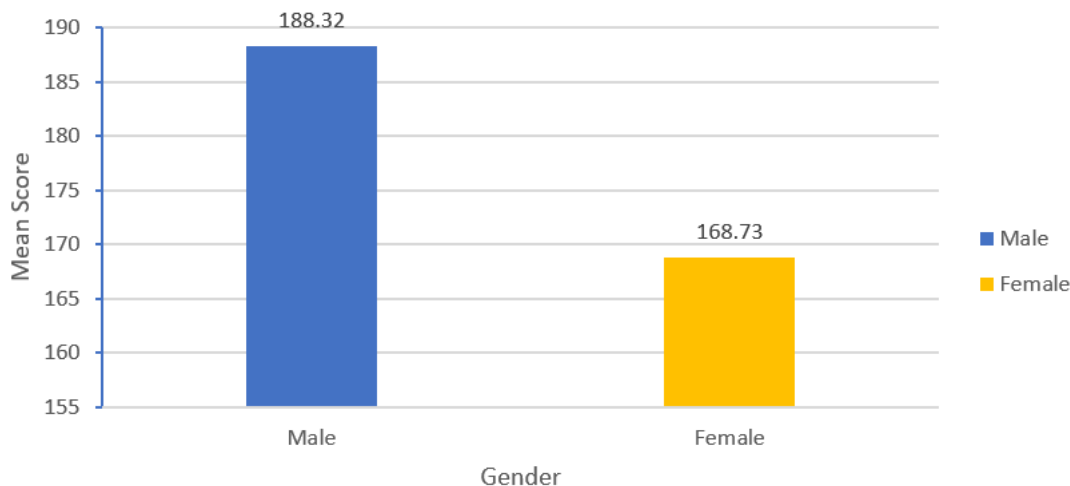
From table 04 and figure 03, it is clear that, the female students scored higher (M=25.36) in perceived stress as compare to male students (M=21.80). Mean difference was found 3.55 and the t-value was found 2.59, which is significant at 0.01 level. It indicated influence of gender on perceived stress.

**Table 05 Influence of Gender on Psychological Well-being (PWB)**

Subgroups	Mean	SD	Mean difference	df	t
Male	188.32	22.81	19.59	78	3.83**
Female	168.73	22.95			

\*\*p < .01, NS: Not Significant

**Figure 04 Mean scores on psychological well-being of male and female subgroups of students**



From table 05 and figure 04, it is clear that, the male students scored higher (M=188.32) in psychological well-being as compare to female students (M=168.73). Mean difference was found 19.59 and the t-value was found 3.83, which is significant at 0.01 level. It indicated influence of gender on psychological well-being.

Hence, the hypothesis that, there will be significant impact of gender on stress and well-being among college students, accepted here.

### Correlation between perceived stress and psychological well-being

**Table 06 Relationship between Perceived Stress and Psychological Well-being**

	Perceived Stress	Psychological Well-being
Perceived Stress	1	-0.704
Psychological Well-being	-0.704	1

\*\*p < .01, NS: Not Significant

From table 06, it is to be seen that, the correlation coefficient was found negative (r=-0.704) which is significant at 0.01 level. It indicates that, perceived stress and psychological well-being both are negatively correlated to each other, means lower stress helps to higher the psychological well-being.

Hence, the hypothesis that, there will be significant relationship between stress and well-being among college students, is accepted here.

## DISCUSSION

The present study supported all three hypotheses regarding mindfulness, gender, stress, and well-being among college students in Ranchi and Jamshedpur. Students engaged in mindfulness-based interventions (MBI) reported significantly lower perceived stress (M = 18.74 vs. 28.42) and higher psychological well-being (M = 195.19 vs. 161.87) than non-

MBI peers, aligning with Kabat-Zinn's (1990) framework that mindfulness alters cognitive appraisal of stressors and supports Lazarus and Folkman's (1984) transactional model by enabling adaptive reframing of challenges. These findings corroborate Brown and Ryan (2003), suggesting mindfulness fosters autonomy and self-acceptance—critical protective factors against academic pressure in Indian contexts (Singh & Julka, 2018). Significant gender differences emerged, with female students reporting higher perceived stress ( $M = 25.36$ ) and lower well-being ( $M = 168.73$ ) than males, consistent with global evidence that women experience greater perceived stress (Matud, 2004); in the Indian socio-cultural context, this may reflect dual expectations of academic excellence and traditional roles, intensifying role conflict (Davey et al., 2007). A strong negative correlation ( $r = -0.704$ ) between stress and well-being further supports Keyes' (2002) dual-continua model, indicating that stress reduction is foundational to flourishing, as chronic stress depletes resources needed for goal pursuit and relationship building. Practically, these results suggest that educational institutions should integrate accessible mindfulness practices (e.g., brief meditation, yoga) into wellness programs and adopt gender-responsive counseling to address female students' unique stressors. Limitations include the purposive sampling strategy, cross-sectional design limiting causal inference, and reliance on self-report measures susceptible to social desirability bias; future research should employ longitudinal or experimental designs and explore cultural moderators among tribal and non-tribal student populations in Jharkhand. In conclusion, mindfulness engagement is significantly associated with reduced perceived stress and enhanced well-being among college students in Eastern India, while gender differences highlight the need for tailored, culturally sensitive interventions; by promoting evidence-based mindfulness practices and addressing gender-specific stressors, institutions can create supportive environments that foster both academic success and human flourishing, contributing meaningfully to the growing literature on Positive Psychology and youth mental health in Indian higher education settings.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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