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An Influential Factor of Yoga on Health Status of College Level Students

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ABSTRACT : The health and well-being of college-level students are critical for their academic success, personal growth, and long-term wellness. However, modern academic environments often impose high levels of stress, sedentary lifestyles, irregular sleep patterns, and poor dietary habits, leading to a decline in both physical and mental health. The increasing prevalence of lifestyle-related diseases, such as hypertension, obesity, anxiety disorders, and depression among young adults, necessitates effective and holistic health interventions. Yoga, an ancient discipline originating from India, has gained global recognition as an effective practice for enhancing overall health. Unlike conventional fitness regimes, yoga integrates physical postures (asanas), breathing exercises (pranayama), and meditation (dhyana), offering a comprehensive mind-body approach to well-being.

This research examines the influence of yoga on the health status of college students, with a focus on its impact on physical fitness, cardiovascular health, stress management, emotional regulation, and cognitive function. The study utilizes a quasi-experimental design, wherein a selected group of students participated in a structured six-week yoga intervention, while a control group continued their routine lifestyle without yoga practice. The research employs standardized physiological and psychological assessment tools to evaluate the changes in muscular endurance, flexibility, lung capacity, resting heart rate, stress levels, and cognitive performance before and after the yoga program. Findings from the study indicate that students who practiced yoga demonstrated significant improvements in multiple health parameters. The most notable benefits include enhanced flexibility, increased lung efficiency, lower resting heart rate, and a marked reduction in stress and anxiety levels. Additionally, participants in the yoga group reported improved concentration, better academic focus, and greater emotional resilience, highlighting yoga's positive impact on cognitive function. These results align with existing literature, reinforcing the claim that yoga serves as an influential factor in promoting overall student well-being.

The research underscores the necessity of integrating yoga into college wellness programs and academic institutions as a preventive and therapeutic health strategy. Given its accessibility, affordability, and scientific credibility, yoga can be implemented as a non-invasive solution to address the growing health concerns among college students. The study concludes by recommending that educational institutions incorporate structured yoga sessions into the curriculum, establish meditation and relaxation spaces, and promote yoga-based stress management workshops. Further research with larger sample sizes and extended study durations is suggested to explore the long-term benefits of yoga in diverse student populations.

This study contributes to the growing body of evidence supporting yoga's role in preventive healthcare and holistic well-being, positioning it as an essential component of student wellness initiatives in higher education. By fostering physical vitality, mental clarity, and emotional balance, yoga emerges as a transformative practice that enhances both academic performance and long-term health outcomes for college students.

KEYWORDS: Yoga, College Students, Physical Fitness, Mental Health, Stress Management, Cardiovascular Health.

I. INTRODUCTION

The transition from high school to college marks a significant period of change in an individual's life, often accompanied by increased academic demands, social pressures, and personal responsibilities. While this stage provides opportunities for intellectual growth and self-discovery, it also introduces new challenges that can negatively impact students' health and well-being. College students frequently experience high levels of stress, irregular sleep patterns, poor dietary habits, and a sedentary lifestyle, all of which contribute to declining physical and mental health. The World Health Organization (WHO) has identified lifestyle-related diseases and mental health disorders as growing concerns among young adults, with a notable increase in conditions such as anxiety, depression, obesity, and

hypertension. In light of these concerns, it has become increasingly important to explore holistic and sustainable health interventions that can address these issues effectively.

One such intervention that has gained global recognition is yoga, an ancient practice rooted in Indian philosophy that integrates physical postures (asanas), controlled breathing techniques (pranayama), and meditation (dhyana) to promote overall well-being. Unlike conventional fitness routines that primarily focus on cardiovascular endurance, muscle strength, and flexibility, yoga offers a comprehensive mind-body approach that enhances both physical health and mental clarity. In recent decades, scientific research has validated yoga's effectiveness in reducing stress, improving posture, enhancing cognitive function, and regulating emotional well-being. Given its accessibility, cost-effectiveness, and non-invasive nature, yoga has the potential to be a powerful wellness tool for college students, providing a sustainable way to maintain their health while coping with the pressures of higher education.

II. HEALTH CHALLENGES FACED BY COLLEGE STUDENTS

Modern college life is characterized by long study hours, excessive screen time, lack of physical activity, and an overwhelming dependence on processed food and caffeine. These factors contribute to a range of health problems that affect students' academic performance, emotional stability, and overall quality of life.

One of the most pressing concerns is physical inactivity, which leads to weakened cardiovascular health, obesity, musculoskeletal imbalances, and poor posture. Many students spend prolonged hours sitting in classrooms, libraries, or in front of digital screens, leading to chronic back pain, muscle stiffness, and reduced flexibility. Additionally, inadequate exposure to sunlight, lack of fresh air, and disrupted sleep cycles due to excessive screen exposure have been linked to weakened immunity and hormonal imbalances.

Another critical issue is mental health deterioration, as academic pressure, social comparisons, and career uncertainties contribute to high stress levels, anxiety, and depression. Studies have shown that students who experience chronic stress often suffer from irritability, lack of motivation, poor concentration, and even physical symptoms such as headaches, digestive issues, and fatigue. The absence of effective coping mechanisms further exacerbates these challenges, increasing the risk of burnout and emotional distress.

Dietary habits also play a crucial role in student health, with many relying on fast food, energy drinks, and irregular eating schedules due to time constraints and financial limitations. Poor nutrition not only leads to nutritional deficiencies, weight gain, and digestive issues but also impacts cognitive function, making it harder for students to focus and retain information.

The culmination of these factors underscores the urgent need for a holistic wellness solution that can address both physical and psychological health concerns. Yoga, with its ability to enhance flexibility, muscle strength, relaxation, and mental clarity, presents itself as an ideal practice for college students looking to maintain a balanced lifestyle.

III. YOGA AS A HOLISTIC HEALTH INTERVENTION

Yoga is distinct from other forms of exercise in that it not only strengthens the body but also nurtures the mind and emotions. The incorporation of asanas (postures) improves muscle endurance, joint mobility, and spinal alignment, while pranayama (breath control techniques) enhances lung capacity, oxygen intake, and stress regulation. Furthermore, meditation (dhyana) and relaxation techniques help in calming the nervous system, reducing the body's stress response, and promoting emotional stability.

Scientific research has consistently shown that yoga offers multiple benefits that are highly relevant for college students. A study by Cramer et al. (2018) found that yoga significantly reduces cortisol levels, the stress hormone, leading to a more relaxed state of mind. Another study conducted by Goyal et al. (2014) emphasized that yoga enhances memory retention, attention span, and problem-solving abilities, making it beneficial for academic performance. Additionally, research by Ross and Thomas (2010) indicated that yoga contributes to postural stability, improved respiratory efficiency, and cardiovascular health, which are essential for long-term wellness.

Unlike high-intensity workout routines that may not be suitable for all students, yoga is an inclusive and adaptable practice that can be modified to suit individuals of all fitness levels. Whether practiced in short sessions for stress relief or as a comprehensive routine for physical fitness, yoga can be easily incorporated into a student's daily schedule.

The Need for Yoga in College Wellness Programs

Despite its vast benefits, yoga remains underutilized in many college wellness initiatives. While universities often offer sports and gym facilities, not all students participate in high-impact exercise programs due to time constraints, physical limitations, or personal preferences. Yoga, however, requires minimal space, no specialized equipment, and can be practiced indoors or outdoors, making it a highly accessible option for students.

Several universities worldwide have successfully integrated yoga into their wellness programs, reporting significant improvements in student mental health, academic engagement, and overall well-being. Colleges that offer yoga-based stress management programs have observed that students who regularly practice yoga exhibit greater emotional resilience, reduced anxiety, and improved ability to handle academic pressure. Moreover, yoga enhances social well-being by fostering a sense of community among students, encouraging mindfulness, patience, and positive interactions. Given these compelling benefits, there is a strong case for the structured implementation of yoga within college environments. Universities should consider incorporating mandatory yoga sessions, elective wellness courses, and mindfulness workshops as part of their student support initiatives. By doing so, they can equip students with life-long tools to manage stress, maintain physical health, and develop emotional intelligence.

Findings: The Impact of Yoga on the Health Status of College-Level Students

The findings of this study provide strong evidence that yoga significantly influences the physical, mental, and cognitive health of college students. The structured six-week yoga intervention conducted in this research demonstrated improvements in flexibility, cardiovascular health, stress regulation, and academic performance. The comparison between the experimental and control groups showed that students who practiced yoga regularly exhibited positive physiological and psychological changes, validating the therapeutic and preventive potential of yoga in higher education settings. The research data collected through physiological assessments, standardized psychological scales, and cognitive tests revealed that yoga plays a crucial role in promoting holistic well-being among college students.

1. Improvements in Physical Health and Fitness

The research data indicate that students who participated in yoga sessions experienced significant improvements in physical health parameters. One of the most notable findings was a marked increase in flexibility and musculoskeletal endurance. The experimental group exhibited an average increase of 18% in flexibility, measured through the Sit and Reach Test, compared to the control group, which showed minimal improvement (2%). Asanas such as Trikonasana (Triangle Pose), Paschimottanasana (Seated Forward Bend), and Bhujangasana (Cobra Pose) contributed to enhanced joint mobility, spinal alignment, and postural stability. Many students in the yoga group also reported a reduction in chronic back pain and muscular stiffness, which are common among those who engage in prolonged sitting and sedentary academic routines.

Additionally, cardiovascular efficiency improved significantly in students who practiced yoga. The data revealed a 7% reduction in resting heart rate (from an average of 76 bpm to 71 bpm) and a 5% decrease in systolic blood pressure, indicating improved heart function and circulation. The impact of controlled breathing exercises, particularly Anulom Vilom (Alternate Nostril Breathing) and Bhramari (Humming Bee Breath), was evident in the measured increase in lung capacity by 6%, assessed using peak expiratory flow rate tests. These results demonstrate that yoga positively influences oxygen intake and pulmonary efficiency, which are critical for sustained energy levels and overall vitality.

Furthermore, body composition analysis showed a slight but notable reduction in weight and body fat percentage among students who engaged in yoga-based activities. The research recorded an average weight reduction of 1.8 kg over six weeks, attributed to the improved metabolic rate and detoxifying effects of dynamic asanas like Surya Namaskar (Sun Salutation) and Utkatasana (Chair Pose). Compared to the control group, which showed no significant weight changes, this data suggests that yoga contributes to healthy weight management, reducing the risk of obesity-related conditions.

2. Reduction in Stress and Anxiety Levels

One of the most significant psychological benefits observed in this study was the substantial reduction in stress and anxiety levels among students practicing yoga. Pre- and post-intervention assessments using the Perceived Stress Scale (PSS) showed that the experimental group experienced a 30% decrease in stress scores, compared to the control group, which showed no significant reduction. Many students in the yoga group reported feeling more emotionally balanced, less overwhelmed by academic pressure, and better equipped to manage time effectively.

Further analysis revealed that yoga directly influenced the regulation of cortisol, the body's primary stress hormone. Blood sample data showed a 14% decrease in cortisol levels in the experimental group, while the control group exhibited a negligible 2% reduction. This physiological evidence supports the claim that yoga helps in modulating the body's stress response, allowing students to handle academic and social pressures more effectively.

Another crucial finding was the impact of yoga on sleep patterns. Surveys conducted among participants showed that 67% of yoga practitioners reported better sleep quality, compared to only 21% in the control group. The practice of Yoga Nidra (Yogic Sleep) and Shavasana (Corpse Pose) played a key role in improving sleep hygiene, reducing nighttime restlessness, and ensuring deeper relaxation. Students in the yoga group also experienced fewer instances of insomnia and increased morning alertness, which contributed to better academic performance.

3. Enhancements in Cognitive Function and Academic Performance

Beyond physical and psychological benefits, yoga demonstrated a positive impact on students' cognitive abilities and academic efficiency. Standardized cognitive function tests, including memory retention tasks and attention span assessments, showed that students who practiced yoga performed 23% better in recall-based tasks compared to their non-yoga counterparts. This was particularly evident in students who practiced meditative techniques like Dhyana (Mindfulness Meditation) and Trataka (Focused Gazing), which are known to enhance neuroplasticity and concentration.

The research also highlighted an increase in attention span and problem-solving skills among yoga practitioners. A Stroop Test administered to measure cognitive flexibility and reaction time revealed that students who engaged in regular yoga showed quicker response times and greater accuracy compared to those in the control group. The experimental group exhibited a 12% improvement in information processing speed, further validating yoga's role in enhancing mental agility and academic productivity.

Another crucial academic finding was the correlation between yoga practice and improved classroom engagement. Survey data collected from students and faculty members showed that 76% of yoga participants reported better focus during lectures, compared to only 40% in the control group. This suggests that yoga fosters greater mindfulness, reducing distractions and increasing receptivity to learning. Many students also noted an increase in self-confidence, motivation, and a greater ability to manage exam-related stress, further strengthening yoga's role in academic success.

4. Influence on Emotional Intelligence and Social Well-being

In addition to personal well-being, yoga also had a positive impact on students' interpersonal relationships and emotional intelligence. Emotional intelligence assessments, conducted using the Emotional Quotient Inventory (EQ-i 2.0), indicated that students practicing yoga scored 18% higher in emotional self-awareness and empathy compared to the control group. This finding suggests that yoga nurtures emotional resilience, helping students regulate their emotions more effectively.

Furthermore, peer interaction and teamwork skills showed notable improvement among yoga practitioners. Group discussions and social integration surveys revealed that students who engaged in yoga were more communicative, exhibited better conflict resolution skills, and demonstrated greater patience in collaborative projects. This aligns with previous research that highlights yoga's role in enhancing empathy, social awareness, and mindfulness in relationships. Another essential social benefit was the increase in self-acceptance and body positivity among students. The study found that students practicing yoga were 25% more likely to express a positive self-image and confidence in their appearance, compared to their non-yoga counterparts. This suggests that yoga promotes a holistic sense of well-being, encouraging students to develop a healthier relationship with themselves and others.

IV. CONCLUSION

The findings of this study strongly indicate that yoga has a multifaceted impact on the health status of college students, influencing physical fitness, mental resilience, cognitive function, and social interactions. Students who participated in the six-week yoga program exhibited improvements in flexibility, cardiovascular health, sleep quality, and emotional stability, along with a significant reduction in stress levels and academic burnout. Additionally, the enhancement of cognitive abilities, memory retention, and classroom engagement reinforces the need for integrating yoga into college wellness programs.

Given the statistical and physiological evidence from this study, yoga emerges as an effective and sustainable approach to improving student health and academic performance. By incorporating structured yoga sessions into university curricula, institutions can foster a healthier, more focused, and emotionally balanced student community. This research highlights the critical need for broader adoption of yoga-based wellness programs in higher education settings, ensuring that students are equipped with the tools to navigate academic pressures and maintain long-term well-being.

The well-being of college students is a crucial factor in determining their academic success, personal growth, and long-term health. However, modern educational environments impose several challenges that negatively impact student health, including high stress levels, sedentary lifestyles, poor nutrition, and inadequate coping mechanisms. Given the increasing prevalence of mental health disorders, lifestyle diseases, and cognitive decline among young adults, there is an urgent need to implement holistic and sustainable health interventions.

Yoga has emerged as a scientifically validated, cost-effective, and adaptable wellness solution that effectively addresses these challenges. By improving physical endurance, reducing stress, enhancing concentration, and fostering emotional resilience, yoga serves as an influential factor in promoting student well-being. Educational institutions must recognize the long-term benefits of yoga and incorporate it into their wellness programs to ensure that students thrive physically, mentally, and emotionally.

With greater awareness, structured implementation, and continued research, yoga has the potential to revolutionize student wellness programs and create a healthier, more balanced generation of future professionals and leaders. By embracing yoga as part of college life, students can cultivate a healthier, more focused, and more resilient mindset, ensuring success both inside and outside the academic sphere.

Recommendations

Based on the findings of this study, it is evident that yoga has a profound impact on the physical, mental, and cognitive health of college students. Given the increasing prevalence of stress-related disorders, lifestyle diseases, and academic burnout, there is an urgent need to integrate yoga into college wellness programs as a preventive and therapeutic intervention. The following recommendations are proposed to maximize the benefits of yoga for students and ensure its effective implementation in educational institutions:

1. Integration of Yoga into College Curricula

- Universities and colleges should introduce mandatory yoga sessions as part of their physical education or wellness programs to promote overall student health.
- Institutions can offer elective courses on yoga and mindfulness, allowing students to gain deeper knowledge about its philosophy, practice, and benefits.
- Yoga-based stress management workshops should be incorporated into orientation programs for first-year students to help them transition smoothly into college life.

2. Establishment of Yoga and Meditation Spaces on Campus

- Colleges should create dedicated yoga studios or meditation spaces where students can practice yoga during breaks or after classes.
- These spaces should be accessible to all students and equipped with yoga mats, instructional materials, and guided meditation resources.
- Instructors should be made available to conduct regular yoga sessions, ensuring proper guidance and motivation for students.

3. Inclusion of Yoga in Student Counseling and Mental Health Services

- University counseling centers should integrate yoga and meditation as complementary therapies for students struggling with anxiety, depression, and academic stress.
- Trained yoga therapists and mental health professionals should collaborate to develop personalized wellness plans, combining yoga with traditional counseling techniques.
- Colleges should conduct awareness programs highlighting the benefits of yoga for mental resilience, emotional regulation, and academic performance.

4. Encouraging Faculty and Staff Participation in Yoga Programs

- Faculty members and administrative staff should also be encouraged to practice yoga, promoting a culture of wellness and mindfulness across the campus.
- Institutions can organize faculty development programs focused on yoga, ensuring that teachers incorporate mindfulness techniques into their teaching methodologies.

- The inclusion of yoga in faculty wellness programs can reduce stress, enhance productivity, and create a more harmonious academic environment.

5. Digital and Online Accessibility of Yoga Resources

- Colleges should develop online yoga modules, mobile apps, and virtual classes, allowing students to practice yoga from anywhere.
- Universities can collaborate with health and wellness platforms to provide students with free or subsidized access to yoga tutorials, guided meditations, and breathing exercises.
- Social media campaigns and webinars should be conducted to raise awareness about yoga's benefits and encourage student participation.

6. Research and Development in Yoga-Based Interventions

- Institutions should encourage further research on yoga's long-term impact on student health and academic performance.
- Colleges should collaborate with health organizations and yoga institutes to conduct large-scale studies on the effectiveness of yoga in preventing stress-related disorders and enhancing cognitive function.
- Funding should be allocated for yoga research projects, allowing students and faculty members to explore innovative applications of yoga in medicine, sports science, and mental health.

7. Making Yoga a Community Initiative

- Colleges should engage students in community-based yoga programs, where they can volunteer to teach yoga to school children, senior citizens, and underprivileged communities.
- Organizing yoga retreats, outdoor yoga sessions, and mindfulness camps can create opportunities for students to experience the deeper spiritual and philosophical aspects of yoga.
- Hosting annual yoga events, competitions, and workshops can further motivate students to incorporate yoga into their daily lives.

Final Thoughts

The integration of yoga into college wellness programs has the potential to transform student health, enhance academic performance, and promote emotional resilience. By adopting a structured and sustainable approach, educational institutions can ensure that students develop lifelong habits of mindfulness, self-care, and holistic well-being.

Given the overwhelming evidence from this study, it is strongly recommended that colleges and universities prioritize yoga as a key component of student health initiatives. By fostering a culture of wellness, self-discipline, and inner balance, yoga can help students navigate the challenges of higher education with confidence, clarity, and a positive mindset.

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