



Association Between Psychological Well-Being and Academic Achievement of College Students

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ABSTRACT

This study uses a systematic evaluation of the literature to examine how yoga and meditation activities affect college students' mood and executive function. Published empirical research from sources including PubMed, Scopus, PsycINFO, and Google Scholar were used to gather secondary data. Included were studies that reported results on mood or executive function after implementing yoga or meditation therapies. Regular yoga and meditation practice is linked to increases in working memory, attention, cognitive flexibility, and inhibitory control, according to the findings of the evaluated research. Significant decreases in symptoms of stress, anxiety, and depression as well as improvements in general mood were also often noted. According to the review's findings, yoga and meditation are non-pharmacological, accessible, and successful strategies for promoting college students' mental and emotional health.

Keywords: Yoga, Meditation, Executive Function, Mood, College Students, Mindfulness, Cognitive Performance, Emotional Well-being, Systematic Review, Higher Education

1. INTRODUCTION

Attention, working memory, language, spatial orientation, and execution are all examples of cognitive function, which is the mental activity or process of employing thinking, experience, and feeling to acquire information and understanding (Larsen et al., 2020; Liu et al., 2020). It has a significant impact on young adults' performance throughout this crucial stage of growth and development (Sharma et al., 2020). According to Chang et al. (2020), cognitive function is a powerful predictor of physical function improvement, which is essential for everyday functioning at its best and can impact learning, attention levels for other activities, and physical and mental health (El-Malky et al., 2015). Blair and Raver (2014) have demonstrated that executive function, a component of cognitive function, may be a powerful predictor of academic achievement. Working memory, inhibition, and cognitive flexibility are components of executive function that are necessary for higher-level functions including reasoning and problem solving (Amunts et al., 2021). A key element of executive function, which is crucial for all cognitive processing, inhibitory control is strongly linked to mental health. According to research, young people' academic success and mental health are linked to executive function, and their healthy habits are



linked to inhibitory control, a crucial aspect of executive function (Ludyga et al., 2019; Xie et al., 2020). Thus, determining the elements that improve inhibitory control is a worthwhile endeavor (Zagaria et al., 2021).

According to Tang et al. (2015), meditation is a type of mental training intended to enhance a person's fundamental mental skills, including the ability to control one's emotions and concentration. Numerous aspects of executive function have been demonstrated to be enhanced by it (Tang et al., 2015). According to a research by Sankar et al. (2020), meditation improved participants' cognitive capacities. For the improvement of cognitive and psychological symptoms in breast cancer survivors, meditation is thought to be a practical, acceptable, and economical intervention (Henneghan et al., 2020). The remote meditation intervention used in the study by Spadaro and Hunker (2016) was simple to learn, needed little training, and fit easily into the participants' hectic schedules (12 minutes a day). It demonstrated some efficacy in lowering stress and anxiety levels and enhancing nursing students' cognitive performance. Certain qualities (including empathy and emotion detection) are superior in meditators compared to non-meditators, according to research by Campos et al. (2019). According to a neurological research conducted on adults, daily meditation practice may preserve nerves and slow the typical aging-related loss in cognitive performance. According to studies on high school students' mindfulness meditation practices, teenagers can alter their ideas, attitudes, and emotions through meditation's inherent perceived advantages (Wisner and Starzec, 2016). Short-term meditation programs can enhance executive function and cognitive efficiency in many brain regions on attentional tasks, according to prior research on adult meditation users (Taren et al., 2017).

Focused-attention (FA) and open-monitoring (OM) meditation are two types of meditation practices that have distinct impacts on brain activity (Lutz et al., 2008). FA meditation necessitates that practitioners concentrate on a single item or objective. OM meditation does not need the focus of attention on a particular object; instead, participants must return to their prior level of concentration when their attention departs from the center of the object (Lutz et al., 2008). It places a strong emphasis on continuing to observe what is happening right now—certain ideas, sensations, emotions, etc.—in a state of awareness that is free from judgment (Lutz et al., 2008).

For thousands of years, people have utilized yoga and meditation as age-old methods to enhance their mental and physical well-being. Because of the many advantages they provide, they have grown in popularity among college students in recent years. Students frequently suffer from stress, anxiety, and physical strain in today's hectic and demanding academic environment, which can have a detrimental impact on both their academic performance and general well-being. College students who regularly practice yoga and meditation can reap many advantages, including greater mental and physical health,



more relaxation and stress reduction, higher attention and concentration, and an overall sense of well-being. Additionally, these activities can assist kids in creating lifelong healthy routines and coping strategies that will help them better handle stress and preserve their best possible physical and mental well-being.

Here are some benefits of yoga and meditation for college students :

Stress Management

Above all, yoga and meditation are useful methods for reducing stress. College students must continually balance a variety of obligations, including going to courses, studying, working part-time jobs, and keeping up a social life. All of these can cause stress, which can show up as emotional and physical symptoms including headaches, tense muscles, irritability, and trouble falling asleep. It has been demonstrated that yoga and meditation lower the body's levels of the stress hormone cortisol. Frequent use of these methods can also assist people in creating coping strategies to handle challenges, giving them a greater sense of control over their life.

Physical Health

College students can also enhance their physical wellness via yoga and meditation. Eye strain, neck and back discomfort, and bad posture can result from prolonged computer use, extensive study sessions, and lecture seating. Yoga is a low-impact exercise that enhances posture, strength, flexibility, and balance. Additionally, yoga can lower the chance of injury by improving circulation and easing chronic pain. Conversely, meditation can enhance sleep quality, which can result in improved physical health. Students who are in better physical condition may feel more motivated and concentrated, which may improve their academic performance.

Mental Health

Students' mental health may be improved by yoga and meditation, which is another advantage. Mental health conditions like eating disorders, anxiety, and depression are common among college students. Students can manage these situations with the help of yoga and meditation. For instance, engaging in mindfulness meditation can make people more conscious of their thoughts and feelings, enabling them to identify negative patterns and swap them out for more constructive ones. Because yoga encourages relaxation and a sense of wellbeing, it has also been demonstrated to be useful in lowering symptoms of anxiety and depression. Additionally, taking part in group yoga or meditation programs helps lessen feelings of loneliness and help students connect with others.

Cognitive function improvement

Apart from the previously mentioned advantages, engaging in yoga and meditation can enhance cognitive performance. Large volumes of material must be learned and retained by college students, frequently



under time constraints. Meditation and yoga can enhance cognitive flexibility, memory, and focus. Additionally, consistent use of these methods can improve self-awareness and self-control, which can improve one's capacity for making decisions and addressing problems.

Gain a sense of purpose

Lastly, college students can get a feeling of meaning and purpose by engaging in yoga and meditation. As students negotiate their future vocations and life aspirations, college may be a period of uncertainty and upheaval. Students can reflect on their beliefs and priorities and get a deeper understanding of themselves via yoga and meditation. Students who regularly practice yoga and meditation can also build self-discipline and a sense of accomplishment, which can increase their confidence and self-esteem.

2. OBJECTIVES

- To evaluate the effectiveness of yoga and meditation practices in improving executive function and mood among college students.

3. METHODOLOGY

This study followed a secondary data approach using a systematic review of existing research. Published studies were identified through searches in databases such as PubMed, Scopus, PsycINFO, and Google Scholar using keywords related to yoga, meditation, executive function, and mood in college students. Relevant articles were screened based on predefined inclusion criteria, and only peer-reviewed empirical studies were selected. Data from eligible studies were extracted, compared, and synthesized to understand overall trends and evaluate the effectiveness of yoga and meditation practices on executive function and mood.

4. EFFECT OF YOGA ON MOOD

An increasing amount of studies has demonstrated that yoga may be crucial for improving mood disorders and quality of life in a variety of demographics. Numerous academics have calculated the effect of yoga on mental problems. According to Salmon, Lush, Jablonski, and Sephton (2009), yoga is regarded as a method for managing mood disorders that incorporates postures, breathing, cleaning procedures, and meditation practices. Hatha yoga is a good treatment for mood disorders that lessens psychological discomfort, according to research findings (Dhananjai, Sadashiv, Tiwari, Dutt, & Kumar, 2013; Shohani et al., 2018). Recent empirical research conducted in India and other nations has shown that yoga practice enhances mood and cognitive performance in a variety of populations, including patients, senior citizens, and healthy volunteers. The majority of research was conducted on ill individuals. Yoga is a successful intervention to improve patients' mental states, according to a review paper (Vollbehr et al., 2018). According to the findings of a randomized controlled trial, yoga practitioners reported more



mood improvement than the walking group. Another study found that following a six-month follow-up yoga program, cancer patients' mood disorders, stress symptoms, and quality of life improved significantly (Mackenzie, Carlson, Ekkekakis, Paskevich, & Culos-Reed, 2014). The findings of a randomized trial research showed that after six weeks of yoga practice, the nursing population's QOL showed a substantial increase in several dimensions, including their physical, psychological, and emotional profiles (Patil et al., 2018). Another study by Lau, Yu, and Woo (2015) found that following 12 weeks of hatha yoga intervention, Chinese adults' health-related QOL (such as mood, anxiety, and depression) significantly improved.

The results of a randomized control research demonstrated that after 24 weeks of yoga practice, the elderly's depressive symptoms (also known as mood disorders) dramatically decreased (Krishnamurthy & Telles, 2007). Sudarshan-kriya yoga has been shown in another randomized control research to be beneficial in lowering mild symptoms of depression. Sudarshan-kriya yoga has been shown in three open trial trials to be highly beneficial in lowering major depression symptoms. Following a 12-week yoga intervention, the findings of two open trial trials shown a substantial decrease in severe depression symptoms. According to the findings of the third open trial investigation, four weeks of yoga practice significantly reduced depressed symptoms. Mood disorders are thought to include depressive symptoms. According to the findings of a randomized control experiment conducted by Khumar, Kaur, and Kaur (1993), participants with mood disorders who practiced yoga for four weeks saw a substantial decrease in their depressive symptoms. Every research indicated that the participants had a balanced mood.

5. EFFECT OF YOGA ON COGNITIVE FUNCTIONS

Yoga is determined to be a beneficial practice to improve cognitions, according to a line of research papers (systematic review and meta-analysis) (Bhattacharyya, Andel, & Small, 2021; Gothe & McAuley, 2015). After one month of practicing *trataka*, or candle flame meditation, the psychomotor speed of the elderly significantly improved in a randomized control research (Jagannathan, Raghuram, & Talwadkar, 2014). In a different research, healthy volunteers' cognitive abilities were enhanced by *kapalbhati*, *bhastrika*, and *nadisodhana* meditation. Cyclical meditation has been demonstrated to improve cognitive characteristics in a comparative investigation. The results indicated that individuals with multiple sclerosis had significantly improved cognitive abilities (Bhargav, Bhargav, Raghuram, & Garner, 2016). According to Gothe, Kramer, and McAuley (2014), several yoga poses, *pranayamas*, breathing exercises, and meditations improved cognitive and psychological processes. Eight weeks of hatha yoga helped elderly people' mental flexibility and working memory. According to a 2017 study by Luu and Hall, mindfulness meditation and hatha yoga enhanced cognitive function. Following hatha yoga and



mindfulness meditation of breath, emotions, and thoughts, practitioners' executive function significantly improved. Marciniak et al. (2014) shown in another trial that meditation significantly improved the cognitive abilities of elderly patients with neurodegenerative illnesses.

6. PHYSIOLOGICAL MECHANISM OF YOGA ON MOOD

One of the main questions that most people have is how yoga affects mood balance. Mental health and mood are influenced by brain chemicals. As a mind-body exercise, yoga may have an impact on neurotransmitters, which improve brain function and help people achieve emotional equilibrium. Mood state is linked to brain chemicals including serotonin, dopamine, norepinephrine, and gamma-amino butyric acid (GABA). According to Krishnakumar, Hamblin, and Lakshmanan (2015), these neurotransmitters are essential for a person's ability to regulate their mood. Mood disorders are caused by changes in these brain chemicals. Yoga has been shown to improve serotonin, GABA, dopamine release, and serotonin levels in individuals with mood disorders (Streeter, Gerbarg, Saper, Ciraulo, & Brown, 2012). It has been demonstrated that yoga's benefits on mood disorders are underpinned by biological processes. The benefits may manifest during the yoga practice, just after the practice, or as a result of the prolonged yoga practice time. According to Prathikanti et al. (2017), yoga also improves parasympathetic activity, increases the production of neurotransmitters including serotonin, dopamine, and GABA, and controls sympathetic activity and the hypothalamus, pituitary, and adrenal axis. Thus, by controlling these brain chemicals, yoga practice improves mood.

7. PHYSIOLOGICAL MECHANISM OF YOGA ON COGNITIVE FUNCTION

Research shows that yoga improves cognitive abilities. A few brain regions and a network of neural structures are linked to the fundamental mechanism by which yoga enhances cognition. Cognitive processes including memory, attention, psychomotor performance, processing speed, visual reaction time, and perception are linked to the cerebral cortex, prefrontal cortex, anterior cingulate cortex, temporal lobe, and parietal cortex (Culham & Kanwisher, 2001). When someone has trouble remembering, learning new things, focusing, discerning, paying attention, perceiving, processing, and memorizing, it's considered cognitive impairment. The primary causes of cognitive dysfunction or impairment are changes and deactivations in these brain networks. Physiological indicators of cognitive processes include cerebral blood flow, structural activity, and brain waves (such as alpha, beta, theta, and gamma). Yoga has been shown to be a useful method for stimulating the brain's structures, reviving the cognitive region, increasing cerebral blood flow, and producing brain waves. Research indicates that practicing yoga improves cognitive function and stimulates the central nervous system. Additionally, yoga improves the cerebral blood flow in the frontal and temporal lobes of the brain, which results in improved cognitive abilities.



8. CONCLUSION

Meditation dramatically reduced anxiety, despair, perceived stress, and psychological resilience, according to a comprehensive review of yoga meditation's benefits on female college students' mental health. Resilience, self-awareness, and emotional control were all improved by meditation. Participants gradually moved from extreme psychological anguish to inner calm over the 16-week intervention. They also learned how to control their emotions and improve their self-awareness, which led to emotional stability and greater psychological resilience. By modifying the central nervous system, autonomic nervous system, and emotional regulation systems, yoga meditation significantly enhanced participants' capacity to control their emotions. They were able to handle the demands of life and school with greater composure and confidence thanks to its long-term impacts and consistent improvements.

In conclusion, there are many reasons why college students should incorporate yoga and meditation into their everyday routines. These techniques can assist kids in developing a sense of meaning and purpose, managing stress, and improving their physical and mental well-being as well as their cognitive abilities. Even while finding time for these activities can seem challenging given the busy schedule of college life, even a little yoga session or meditation session can have a big impact. College students may improve their entire college experience and set themselves up for success in the future by putting their health first.

9. RECOMMEDATIONS

- **Promote yoga meditation as a mental health intervention in higher education**

Yoga meditation effectively alleviates anxiety and depressive symptoms arising from academic and life pressures in female college students. It is recommended that universities integrate yoga meditation courses into the mental health education system as an important intervention for promoting mental health. Universities can establish regular yoga meditation courses and provide meditation training workshops during extracurricular hours to help students understand the principles and techniques of meditation, thereby enhancing their mental health.

- **Encourage the long-term maintenance of meditation habits**

The positive effects of yoga meditation depend on sustained long-term practice, and the mental health benefits of meditation can continue beyond the intervention period. It is recommended that universities establish supportive mechanisms to help students develop lasting meditation habits. For instance, universities could develop dedicated meditation apps or collaborate with existing meditation platforms, using regular reminders, tracking practice times, and providing personalized meditation plans to help



students stay motivated. Additionally, universities could encourage peer exchange through campus clubs or online sharing platforms to foster a supportive meditation community.

- **Provide diversified and personalized meditation guidance**

The psychological needs and stressors of individuals vary, and the effect of yoga meditation on emotional regulation differs from person to person. It is recommended that university counseling departments offer personalized meditation guidance to ensure that each student can fully benefit from meditation. Meditation modules can be designed based on specific issues such as anxiety, depression, or poor sleep quality. For students with high anxiety levels, breathing-focused and body scan techniques may be emphasized. For those struggling with insomnia, relaxation meditation before bedtime could be recommended. Such personalized meditation plans would better meet students' needs and enhance the effectiveness of the intervention.

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