

Physiological Benefits of Yoga for College Students

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Abstract:

The objective of this study is to appraise the findings of previous and recent research papers for the physiological benefits of yoga for college-going students. Yoga is an ancient comprehensive approach for attaining mind-body fitness and consonance. Due to awareness and accessibility, yoga has obtained worldwide popularity in recent decades. Today Yoga is known as an art of well-being which can become a viable alternative to mainstream treatment. Previous research has shown that yoga can serve as a vital applied science in various fields such as health, medicine, psychology, education, sports, etc. Yoga has an elaborate framework that attunes mind, body, and spirit to ideal energy levels. The versatility and explicitness of yoga are beneficial for every age group, especially children. Yoga programs can facilitate the multifaceted (physiological, psychological, and behavioural) development of children in educational institutes. These days college students struggle with several issues like learning difficulties, addiction, stress, and anxiety; high competition, malnutrition, low physical activity, etc. Currently, yoga is employed as a therapeutic intervention for students in many colleges. This review study focuses on college-based studies on the utilisation of yoga interventions published in journals and different publications. The present study suggests that yoga has positive effects on the physiological parameters of college students.

Keywords: Yoga, Asana, Pranayama, BMI, BP, Pulse Rate.

Introduction:

According to HRD Ministry, India's student population in higher education grew by 800,000 in 2018-19 as against the previous year, making the absolute number of such students 37.4 million. The gross enrolment ratio increased from 25.8 in 2017-18 to 26.3 in 2018-19, enrolment increased from 3.66

crores to 3.74 crores in absolute terms. Today, there are around 200 million higher education students in the world, as opposed to 89 million in 1998. The numbers of students in higher education programs have nearly doubled in the past decade. Thus very large numbers of people in the world population are students. About 40% - 50% of college students are physically inactive. It

was found that physical activity has been seriously neglected in college students. Yoga combines physical activities and conscious breathing that increases metabolism and mental energy. In their study, Narain Mahesh Tripathi et.al, found that yoga has a positive effect on a psychophysiological level that leads to increased academic performance in college students. Suryanamaskar is effective in physical relaxation and mental peace; and it soothes insomnia, somatic stress, and negative emotion. Yoga as physical activity is a key element in promoting well-being.

Selected Physiological Parameters of College Students

The physiological parameters of the college students that were measured included body mass index (BMI), percentage body fat (% BF), blood serum cholesterol (BSC), systolic blood pressure (SBP) and diastolic blood pressure (DBP); heart rate, pulse rate, and respiratory rate, etc.

Yoga

The word yoga has different meanings in different places. The word Yoga means, the 'union', the union of the finite with the infinite. The word yoga is derived from the Sanskrit root word 'yuj' which means 'to join', 'to bind', 'to attach', 'to concentrate one's attention on', etc. In philosophy, the word 'yoga' refers to a union with the supreme spirit. According to yoga philosophy, this union can be achieved by the cessation of mental and emotional fluctuations. Yoga is also a method of right living that also gives integrated knowledge for body, mind, and inner spirit. Maharishi

Patanjali named eight limbs of yoga as yama, niyama, asana, pranayama, pratyahara, dharna, dhyan and samadhi in his seminal work Yogsutra. Yoga can be used as a therapeutic tool and can be integrated with the lifestyle of college students to improve their overall personality. Hath Yoga practices, including asana, pranayama, mudra, bandha, and meditation are useful for the health of college students.

Physiological effects of yoga on college students:

Yoga, an ancient Indian way of life, includes specific body postures (asanas), breathing techniques (Pranayamas), and meditation to attain the highest level of consciousness. Yoga is not only popular in India but also in western countries. Yogic asanas and pranayamas have been shown to reduce the resting respiratory rate, increase the vital capacity, maximum voluntary ventilation, and breath-holding time, maximal aspiratory, and expiratory pressure; lower blood pressure, improved heart rate, healthy circulation, and better muscles tone. Yogic asanas, often been thought of as a form of physical exercise are really powerful techniques that play important role in keeping the body in a balanced position, cultivating awareness, relaxation, concentration, and meditation. Asana is complementary to exercise because in this process there is the development of good physical health by stretching, massaging to affect body mechanism. Yoga also influences overall well-being, quality of life, autonomic function, and immunity. The energy in the body is Prana. By controlling the motion of the lungs or respiratory organs

one can control the prana. By the control of prana, the mind can be easily controlled. Stretching, deep breathing and meditation can improve overall physical fitness, strength, flexibility, and lung capacity.

Gandhi S et al (2016) found in their study that yoga practice results in significant improvement in resting pulse rate, vital capacity, and blood pressure among middle-aged men. Regular practice of yoga improves physical variables (muscular strength, endurance of trunk, and flexibility) and physiological variables (pulse rate, vital capacity, and peak flow rate) significantly. Yoga-based lifestyle makes a significant change in the social adjustment and behaviour of the students. Several physiological benefits of yoga are reported such as a healthy autonomic nervous system, decreased heart rate, respiratory rate, blood pressure, and EMG operation. Yoga offers benefits such as improved galvanic skin reaction, electroencephalogram – alpha waves, cardiovascular performance, breathing capacity, endocrine activity, excretory activity, etc.

Balaji P A, et al. found in their review study that yoga practice indicated considerable health benefits including improved cognition and respiration; reduced cardiovascular risk, BMI, and blood pressure. Yoga holds potential for facilitating stress management and wellness in college students. Yoga can improve sattva guna (balanced personality trait) among students, thus paving the way for their academic excellence. The yogic practices had a positive impact on selected physiological parameters such as resting heart rate, breath-holding time, diastolic

blood pressure, systolic blood pressure, lung capacity, and pulse rate among school and college students.

Review of literature:

Kalimuthu K. Divya, (2019) conducted a study on 40 school students age between 13 to 15 years to find out the, Effect of yogic practices on selected physiological variables of school students, and after six weeks yoga training the result shows that the yogic practices had positive impact on selected physiological parameters as resting heart rate, breath holding time, among school students players.

Chaudhary Santosh (2017) conducted a study of the effect of yogic exercise on physiological variables of undergraduate students and found that yoga exercises improve the lung capacity, and pulse rate among college students.

Suri Manjula et al studied on “Exploring the Physiological effects of Yoga” and found that Yoga also influenced overall well-being, quality of life, autonomic function and immunity.

K. Annapoorna, K. Vasantalaxmi, 2015, studied on “Practice of Pranayama: Physiological Approach and conclude that the energy in the body is Prana. By controlling the motion of the lungs or respiratory organs one can control the prana. By the control of prana the mind can be easily controlled .

S Gandhi et al (2016) found in their study that Yoga group has significant improvement in resting pulse rate, vital

capacity and blood pressure among middle age men.

Rayat Sunil worked on, “Effect of Yoga on selected physical and physiological variables of physical education students” and found that regular practice of yoga improves physical variables (muscular strength and endurance of trunk and flexibility) and physiological variables (pulse rate, vital capacity, and peak flow rate) significantly.

Kumar K (2016), Observed in a study on “Approach of yoga based lifestyle towards social adjustment among students” that Yoga based lifestyle makes a significant change into the social adjustment and behaviour of the students .

One of the study done by Mahajan Natasha et al indicates that several physiological benefits of yoga are reported, such as healthy autonomic nervous system, heart rate decrease, respiratory rate, blood pressure, and EMG operation. In fact, Yoga offers benefits such as improved galvanic skin, reaction, electroencephalogram – alpha waves, cardiovascular performance, breathing capacity, endocrine activity, excretory activity and several more.

Balaji P A, R Varne Smitha, et. al (2012) founded in their review study that yoga practices indicated considerable health benefits including improved cognition, respiration, reduced cardiovascular risk, BMI, and blood pressure.

Natasha Mahajan et al (2012) Observed in a study that Yoga holds potential for enhancing stress management and wellness in college students.

Tikhe SG, Nagendra HR, and Tripathi N (2012), stated that Yoga can improve sattva guna (balance personality trait) among students, thus paving the way for their academic excellence .

Jothimani A studied the Effect of yoga on selected physiological variables among college women students, for the purpose of study 30 college women students were selected randomly and their age ranged from 18 to 21. After yoga training the data was analysed by t test, the result of study showed that yoga exercises produced a significant improvement in diastolic blood pressure, systolic blood pressure, and heart rate.

Singh Aparna and Chandravanshi Lowkesh (2012) found in their study that Asana is complementary to exercise because in this process there is development of good physical health by stretching, massaging to affect body mechanism.

Ankad, Herur, Patil, Shashikala and Chinagudi (2011), Conducted a study to observed effect of short term pranayama and meditation on cardiovascular functions in healthy individuals. The result of study showed that there was significant reduction in resting pulse rate, systolic and diastolic blood pressure and mean arterial blood pressure after practicing pranayama and meditation for 15 days.

Muzumdar and Suryavanshi (2010), Conducted a study on Effect of Ujjai and Bhastrika pranayama on selected physiological variables of physically challenged students. For the purpose of study 60 physically challenged male students were selected randomly and the

subjects were divided in experimental and control group. The experimental group practiced pranayama for 6 weeks. The study stated that Ujjai and Bhastrika pranayama affects the vital capacity and positive holding time of physically challenged students.

Amy Novotney(2009) studied on yoga as a practice tool and found that Stretching, deep breathing and meditation can improve overall physical fitness, strength, flexibility and lung capacity.

Pramanik, Sharma, Mishra, Prajapati, and Singh (2009), Conducted a study on 39 subject age between 25 to 40 years to find out immediate effect of slow pace Bhastrika pranayama on blood pressure and heart rate and found that after slow Bhastrika pranayama for five minutes, both systolic and diastolic blood pressure decreased significantly with a slight fall in heart rate.

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Conclusion:

The ‘science of yoga’ is a swiftly emerging field of research. With the increasing popularity of yoga, it has become imperative to establish its science-based benefits. In this study review of the relevant articles was done to evaluate physiological benefits of yoga for the college students. Studies examining the physiological approach of yoga are rare in peer-reviewed journals. Limited research papers were found on using the keyword physiology and college students, Maximum research was found on the psychological parameters such as stress, anxiety, and depression among college students. There is a need for more methodological research to recognise yoga as a therapeutic intervention. The research will be help improve physical health by normalising respiratory rate, heart rate, blood pressure, blood circulation, sleep pattern, mental health, and academic performance in college students.

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