

Effect of Yoga on Stress and Academic Performance

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ABSTRACT

Yoga is part of normal culture nowadays, with main medical centers, community healthcare centers, and neighborhood yoga studios offering yoga as a mind-body practice to support health and healing. In the India, so many individuals now practice yoga, Although yoga has existed in various forms for around 2500 years, the phenomenon of “yoga for health” is a feature of more modern yoga. Yoga is usually accepted as an ancient tradition that incorporates postures, breathing techniques, meditation, and moral and moral principles in spite of its growing popularity among people of all ages to promote overall health and fitness, little is known about the use of yoga among youth, especially urban youth. Preliminary quantitative studies have found support for yoga programs improving mood, decreasing anger, depression, and fatigue, improving stress resilience, and reducing problematic physiological and cognitive patterns of response to stress such as rumination, intrusive thoughts, and emotional arousal.

Keywords: Yoga, health, medical centers, *asanas*, *pranayama*, *kriyas*, *mudras*

Academic achievement is an attained ability of competence in school task, usually measured by standardized tests and expressed in grades or units based on norms derived from a wide sampling of pupils' performance. Researches reveal that even low or moderate levels of stress can interfere with task performance. Cognitive reactions of stress result in the inability to concentrate. Yoga, which is a way of life, is characterized by balance, health, harmony. Meditation, being part of yoga, which is the seventh limb of Ashtanga Yoga - a state of alert rest as stated by Maharishi Mahesh Yogi, who found a new technique of meditation, popularly known as transcendental meditation. By practicing yoga, a person is thought to reach a state of mental equanimity, where responses to favorable or unfavorable external events are well under the individual's control, and responses are moderate in intensity. The science of yoga is a powerful stream of knowledge, which enables the practitioners to achieve radiant physical health, serene mind, continues spiritual uplift, and creates the ability for harmonious social living. Hatha yoga practices, like *asanas*, *pranayama*, *kriyas*, *mudras*, and

bandhans are mostly taught as physical practices. While various meditational techniques work at the mental level, all these practices are intended to develop a certain type of awareness within oneself, which in turn brings about a change in emotional and visceral functions, and through them, a change in intellectual and somatic functions of the individual takes place. Six months of yogic practices (meditation, *asanas*, and *pranayama*) brings a feeling of well-being, a reduction in body weight, increased vital capacity, acceleration in endocrinal functions, and improvement in memory. Three months practice of *Savasana* has demonstrated an improvement in 86 patients, who had problem of headache, insomnia, and nervousness. revealed that yoga has the potential to influence the stress disorder and it helps the sufferer to achieve physical and metabolic stability. Sahasi *et al.* has demonstrated the effectiveness of yogic techniques in the management of anxiety and reported increased attention/concentration. Yoga through its techniques of meditation, *asanas*, and *pranayama* yields a positive effect in the management of stress in adolescents. The processing of sensory

information at the thalamic level is facilitated during the practice of pranayama and meditation. These two practices along with physical postures, cleansing practices, devotional sessions, and lectures on the theory and philosophy of yoga were focused to bring about an improvement in the steadiness of school students following 10 days of practice. This improvement was believed to be due to better eye-hand coordination, attention, concentration, and relaxation. In one study, it was found that a 4-week program of yogasanas and meditation lowers the aggressive behavior of students. Another study has reported that meditation (a) reduced problems related to maladaptive behaviors, (b) increased emotional and physical health and psychological well-being, (c) reduced the frequency of thought, (d) reduced substance abuse, and (e) generally improved the quality of life. Transcendental meditation reduces stress and improves academic performance. Chanting "Om" mentally causes increased alertness, and the practice of yoga brings improvement in competitive performance. The research done by Mind/Body Institute, Harvard Medical School, and Bruce D' Hara and his team at the University of Kentucky in Lexington, U.S., revealed a positive influence of meditation on brain functioning and performance. The present study examines whether there is an effect of yoga on the academic performance of adolescent students in relation to their stress. With this background, the present study was conducted to find the following: (1) Is there any effect of yoga on the academic results in relation to stress?

Significance of the Study

Research on student engagement within the classroom suggests that increased engagement relates to increase academic achievement (Dotterer & Lowe, 2011; Johns *et al.* 2018). Daily yoga practice has been found to increase student engagement and achievement in a post yoga academic class (Finnan, 2015). The present study aims to add to the existing research by investigating the use of yoga to enhance student engagement and achievement within a middle school small group special education classroom. Results of this study may provide teachers of small group special education classes with a non-academic activity to implement to enhance engagement and increase achievement within their own schools.

Methods

The study was conducted in four public schools of patiala, Punjab. Bisht Battery of Stress Scale (BBSS) was administered on 800 students of Class 9. The participants were 100 boys and 100 girls, with ages ranging from 14 to 15 years. BBSS was administered to identify two stress levels of the students, i.e., high stress and low stress. This test was developed for the measurement of 13 types of stress. Out of 13 scales, two scales, i.e., scale of academic stress and scale of achievement stress were selected. These scales were consisted of 52 and 80 items, respectively, which were 132 in total. Each item is of statement type (closed), to which students were to answer by ticking their option prescribed on the answer sheet. The students were assembled in a hall and made to sit in rows. Booklets containing statement items along with answer sheets were distributed to each student. Instructions were delivered by the investigator. Statements were written in Hindi. Meaning of difficult words was also explained. The students were told to finish their test within an hour. The scoring was done as prescribed in the manual. On the basis of their stress scores arranged in ascending order, top 30% subjects were identified as students with low stress and bottom 30% students were identified as student with high stress. Out of these students, 50% of them were kept in experimental group and another 50% in control group.

Ethics

A code was provided to the students at the time of pretest to keep their personal identity closed. Their achievement scores were exclusively used for the research purpose and were not disclosed to their educational institutions. The project was approved by the Institutional Ethics Committee, and the signed informed consent was obtained from the school principal.

Assessments

Bisht Battery of Stress Scale was used to identify different levels of stress among the students, i.e., high stress and low stress. This was done before the start of experiment. Yoga module was used as an intervention treatment for the experimental group for an hour daily in the morning for 7 weeks. Academic performance test was used as a pretest

and posttest for the experimental as well as control groups to assess the effect of yoga module on the academic performance of the experimental group and to compare it with the control group, who never practiced yoga module. A yoga module [yogasana + pranayama + meditation + prayer + value orientation program] was shared daily for an hour in the morning with the experimental group for 7 weeks. Same academic performance test was administered on the both groups as a posttest.

Analysis

To study an effect of yoga and stress on the academic performance, 2×2 factorial design (ANOVA) was employed on the gain scores of academic performance, wherein stress is a classificatory variable and is studied at two levels, i.e., students with high stress and students with low stress. Yoga module, taken as treatment variable, was given to the experimental group.

RESULTS AND DISCUSSION

Results reveals that F-ratio for the difference between means of experimental group (yoga) and control group on the scores of combined academic performance (in Mathematics, Science, and Social Studies) is found to be significant at the 0.01 level of confidence, which indicates that students of the experimental group and the control group differ on the gain scores of academic performance. Result depicts means and SDs of combined academic performance gain scores of three subjects, in which the mean of experimental group is found to be greater than that of the control group, meaning thereby that those students who experienced yoga module performed better than those who never experienced it. Further shows that F-ratio for the difference between means of high stress group and low stress group on the gain scores of combined academic performance was found to be significant at the 0.05 level of confidence, indicating that academic performance differs among students with high stress and students with low stress. Results shows that the group means of students with low stress is greater than the group mean of the students with high stress, meaning thereby that students with low stress performed better than the students with high stress. Thus, this study reveals that the high stress affects students'

performance negatively, and this result is in tune with the inverted U-shaped model of stress of learning. Results further shows no interaction between yoga intervention treatment and stress on the gain scores of academic performance in three subjects combined. After seeing the positive effect of yoga on the three subjects combined, we thought to have a deeper analysis to study the effect of yoga on different subjects separately. In this context, the data are presented in Tables Results shows that F-ratio for the difference between means of high stress group and low stress group on the gain scores of academic performance in Mathematics, Science, and Social Studies is found to be significant at 0.01 level of confidence, which indicates that students of the experimental group and the control group differ on the gain scores of academic performance in the three subjects. Results gives the details of means and SDs, which depicts that the experimental group showed higher group mean than control group It is inferred that the students who experienced yoga module performed better than those students who never experienced it. Further, it shows that F-ratio for the difference between means of high stress group and low stress group on the gain scores of academic performance in all three subjects is not found to be significant even at the 0.05 level of confidence. It gives details which reveal that means of academic performance in all three subjects in two groups, i.e., high stress and low stress, are comparable.

The findings of this study reveal that the students who experienced yoga module performed better in overall academics as well as in their separate subjects than those students who did not experience yoga module. The results are in tune with the earlier studies, which found that meditation, practiced over long periods, produces definite changes in perception, attention, and cognition. Other study showed that yoga techniques are helpful in management of anxiety and improvement in concentration. Other researchers found that Transcendental Meditation improves academic performance and enhances problem-solving ability Results (a) shows that the students with high stress performed better in the subjects of Social Studies and Science. This result is in tune with the inverted U-shape model of stress and learning, which explains that at first, performance improves as stress increases presumable because

the stress is arousing or energizing. Further the findings reveal that excessive stress affects overall academic performance negatively, and this result is in tune with the earlier studies, which conclude that excessive stress is harmful to academic performance and may lead to dropping out. Research has demonstrated that high levels of stress can lead to hyper vigilance as arriving at a solution too quickly (premature closure). Higher levels of stress reduced grade point average (GPA) among 146 college men and led to increased psychological and somatic symptomology. When stress is perceived negatively or becomes extreme, students experience physical and psychological impairment. Stress overloads our mental and physical resources and interferes with the effective use of our skills, and thus, affects negatively on the performance. Moreover, when academic performance in individual subjects was analyzed, the performance was comparable in high stress and low stress groups, but having values very close to significant values. It may be concluded from the finding of the study that with the intervention of yoga, academic performance improves by optimizing the stress levels. So it is suggested that yoga module should become a regular feature in the schools.

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