



EFFECT OF YOGA TRAINING ON MENTAL HEALTH AMONG COLLEGE STUDENTS

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Abstract:

The purpose of the study was to investigate the effect of yoga training on mental health among college students. For the present study the 30 male college students from Mannaniya College of Arts and Science, Thiruvananthapuram, Kerala were selected at random and their age ranged from 18 to 25 years. For the present study pre test - post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each. Group ‘A’ underwent yoga training only, group ‘B’ have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA). The level of significance was set at 0.05. It was observed that the yoga training has significantly improved the mental health of college students.

Key Words: Yoga, Mental Health, College Students.

Introduction:

Yoga is a systematic and methodical process to control and develop the mind and the body to attain good health, balance of mind and self-realization. Yoga has the potential power to make us healthy and it added to our vigor, still most people lack the knowledge of systematic practice of yoga. They performs yogic exercises for a short period of time and when their health improves, they discontinue the yoga practice. For this reason, the effective results of yogic exercises cannot be determined perfectly. Many scientists, doctors, psychologists and all over the world are extensively studying the beneficial aspects of yoga which encourages us to attain positive health through yoga. Yogasanas are very effective in throwing out all our body wastes and bring control over the body and proper functioning of the organs which depends our health and happiness. Yoga is a science of right living and it works when integrated in our daily life. It works on all aspects of the person: the physical, mental, emotional, psychic and spiritual. The word yoga means ‘unity’ or ‘oneness’ and is derived from the Sanskrit word ‘yuj’ which means ‘to join’. There are too many misconceptions clouding the science of Yoga. People perceive it to be some kind of black or white magic, sorcery, physical or mental debauchery through which miraculous feats can be performed. For some it is an extremely dangerous practice which should be limited to only those who have renounced the world. Few others think it to be a kind of mental and physical acrobatism that is compatible only to a Hindu mind. Human mind is subject to certain weaknesses which are universal. Avidya wrong notions of the external world, asmita wrong notions of the external world, asmita wrong notions of oneself, raga-longing and attachment for sensory objects and affections, dweshad is like and hatred for objects and persons, and abinivesha or the love of life are the five defects of the mind that must be removed. Yoga, the constant meditation and introspection eradicate these mental flaws (Mache, et al. 2013).

Reviews:

Hagins et al. (2013) examined the effects of yoga compared to a physical education class on physiological response (blood pressure (BP) and heart rate (HR)) to behavioral stressor tasks (mental arithmetic and mirror tracing tasks). Data analysis of BP and HR was performed using a $2 \times 2 \times 4$ repeated measures ANOVA (time \times group \times stressor time points). 30 (17 male) 6th graders participated in the study. Yoga did not provide significant differences in stress reactivity compared to a physical education class (group \times time: systolic ($F(1,28) = .538$, $P = .470$); diastolic ($F(1,28) = .1061$, $P = .312$); HR ($F(1,28) = .401$, $P = .532$)). The lack of significant differences may be due to the yoga intervention failing to focus on stress management and/or the stressor tasks not adequately capturing attenuation of stressor response.

Goswade et al. (2013) studied the effect of eye exercise techniques along with kapalbhati pranayama on Visual Reaction Time (VRT). Total 60 subjects in an age group of 18-30 were recruited in the study. All the subjects were divided into two equal groups (study group and control group) containing 30 subjects (18 male & 12 female) each. Both the male and female subjects were selected on the basis of their voluntary involvement. Visual reaction time for red and green light was recorded from all 60 subjects before the start of the study. Study group subjects

were trained to practice various eye exercise techniques and kapalbhati pranayama for 8 weeks regularly whereas control group were busy with their routine activities. After 8 weeks, visual reaction time was measured for red and green light from all 60 subjects. Data expressed as Mean \pm S.D, Student t -test was applied for analysis of data, p value <0.05 is taken as statistically significant. Statistical analysis of data shows that there is a significant decrease in the visual reaction time for red and green light after intervention in study group (p value <0.05). Whereas there is no significant decrease in VRT in control group (p value >0.05). The results of our study suggest that simple eye exercises along with pranayama helps in improvement of visual reaction time.

Miles et al. (2013) intended to determine the acute effects of one session of hatha yoga practice on blood pressure and other cardiovascular responses. To gain insight into the long-term effects of yoga practice, both novice (n = 19) and advanced (n = 18) yoga practitioners were studied. The two groups were matched for age, gender, BMI and blood pressure. The setting was a research laboratory at a university. Thirty six apparently healthy, nonobese, sedentary or recreationally active individuals from the community participated in the study. Intervention The intervention comprised one session of yoga practice, in which participants followed a custom made instructional video providing a yoga routine that consisted of a series of 23 hatha based yoga postures. Prior to arriving at the laboratory, each participant completed a research health questionnaire, a training-status questionnaire, and a yoga-experience questionnaire. Prior to the yoga practice, each participant's height, body fat percentage, trunk or lumbar flexibility, and arterial stiffness as assessed by carotid femoral pulse wave velocity (cfPWV) were measured. For each posture during the yoga practice, the study continuously measured systolic, mean, and diastolic blood pressures, heart rate, stroke volume, and cardiac output. Systolic, mean, and diastolic blood pressures increased significantly during the yoga practice. The magnitude of these increases in blood pressure was greatest with standing postures. Heart rate and cardiac output increased significantly during yoga practice, especially with standing postures. Overall, no differences existed in cardiovascular responses between the novice and advanced practitioners throughout the yoga testing session; cfPWV velocity was significantly and inversely associated with lumbar flexion but not with sit-and-reach test scores. The research team concluded that a variety of hatha yoga postures, especially standing postures, evoked significant increases in blood pressure. The elevation in blood pressure due to yoga practice was associated with increases in cardiac output and heart rate, which are responses similar to those observed in isometric exercise. The lack of obvious differences in blood pressure and other cardiovascular responses between novice and advanced yoga practitioners suggests that long-term yoga practice does not attenuate acute yoga responses.

Raghavendra et al. (2013) designed a study to understand the strategies used by yoga practitioners and autonomic changes associated with voluntary heart rate reduction. Fifty volunteers (group mean age \pm S.D., 25.4 ± 4.8 years; 25 males) were assessed in two trials on separate days. Each trial was for 12 minutes, with a 'pre' state and 'during' state of 6 minutes each. For both trials the 'pre' state was relaxation with eyes closed. In the 'during' state of Trial I, subjects were asked to voluntarily reduce their heart rate using a strategy of their choice. From their responses to specific questions it was determined that 22 out of 50 persons used breath regulation as a strategy. Hence, in the 'during' state of Trial II, subjects were asked to voluntarily reduce their heart rate by breath regulation. In the first trial, the heart rate was reduced by an average of 19.6 beats per minute and in the second trial (with breath regulation exclusively) an average decrease of 22.2 beats per minute was achieved. Hence, the strategy used did not markedly alter the outcome.

Balaji et al. (2012) yoga is an ancient Indian way of life, which includes changes in mental attitude, diet, and the practice of specific techniques such as yoga asanas (postures), breathing practices (pranayamas), and meditation to attain the highest level of consciousness. Since a decade, there has been a surge in the research on yoga, but we do find very few reviews regarding yogic practices and transcendental meditation (TM) in health and disease. Keeping this in view, a Medline search was done to review relevant articles in English literature on evaluation of physiological effects of yogic practices and TM. Data were constructed; issues were reviewed and found that there were considerable health benefits, including improved cognition, respiration, reduced cardiovascular risk, body mass index, blood pressure, and diabetes. Yoga also influenced immunity and ameliorated joint disorders.

Bhavanani et al. (2012) determine immediate effects of performing pranava pranayama on cardiovascular parameters in hypertensive patients. 29 hypertensive patients who were on medical treatment and also attending yoga sessions were recruited for the present study. Supine heart rate (HR) and BP were recorded before and after performance of pranava pranayama for five minutes. Post intervention statistical analysis revealed a significant ($P < 0.05$) reduction in systolic pressure (SP) and a more significant ($P < 0.01$) reduction in HR, pulse pressure and double product (Do P). The reduction in rate-pressure product (RPP) was highly significant ($P < 0.001$). Pranava pranayama is effective in reducing HR and SP in hypertensive patients within five minutes of the practice. This may be due to a normalization of autonomic cardiovascular rhythms as a result of increased vagal modulation

and/or decreased sympathetic activity and improved baroreflex sensitivity along with an augmentation of endogenous nitric oxide production. Our findings have potential therapeutic applications in day to day as well as clinical situations where blood pressure needs to be brought down at the earliest. The significant fall in RPP and Do P signifies a reduction in oxygen consumption and work done by the heart. It is concluded that pranava pranayama, a simple and cost effective technique can be used in the management of hypertensive patients in addition to the regular medical management. Further studies are required to enable a deeper understanding of the mechanisms involved and its usefulness in the long- term management of hypertension.

Greendale et al. (2012) the practice of yoga asanas (postures) may be an optimal method of preserving or enhancing physical function in older men and women. However, the physical demands, efficacy and safety of an asana practice for seniors have not been well studied. The Yoga Empowers Seniors Study (YESS) is an intervention development study that created two senior-adapted series of asanas targeted for an ambulatory older population. YESS is using biomechanics and physical performance tests to acquire information about the physical demands placed on the muscles and joints by the asanas and the functional performance adaptations resulting from the yoga practice. This manuscript details the standardized, senior-adapted, asana series and the additional asana modifications provided when participants had physical limitations. This presentation will enable the yoga research and teaching communities to interpret the biomechanics, physical performance and side effects outcomes.

Saroja (2012) designed a study to find out the effects of complex training and the combined effects of complex training and yogic practices on selected physical and physiological variables among college boys. To achieve the purpose 45 college boys were randomly from Alagappa University College of Physical Education, Karaikudui, Tamilnadu in the age group of 18 to 25 years were selected as subjects. They were divided into three equal groups namely complex training group, combination of complex training and yogic practices group and control group. The variables such as speed, strength, explosive power were the physical fitness variables and resting pulse rate, blood pressure were physiological variables. All the subjects were tested on before and after the training period of six weeks. The analysis of covariance was used to analyse the data. It was concluded that combined effects of complex training and yogic practices significantly improved the selected physical and physiological variables greater in magnitude than the complex training alone among the college male students.

Thakur & Bandopadhyay (2012) one hundred (N=100) school boys of Howrah District, West Bengal were selected randomly as subjects for the present study. The age limit of the subjects was 10 to 12 years. All the subjects were divided into two equal groups viz. Gr. Y and Gr.C. Gr.Y was experimental group that practiced yogic asanas Gr.C was control group. Flexibility, body composition, school attitude inventory scale and self-concept inventory scale were employed to all the subjects of both the groups and thereafter specific yogic treatment was given to Gr.Y for three days a week, continued one year and finally the subjects were retested on criterion measures. The data were analysed by t-ratio to find out the effects of the treatment. The result of the study showed that all the flexibility measures, Body mass index, % of body fat, school attitude and self-concept were improved significantly among yogasanas group but lean body mass not improved significantly after one year yogic treatment.

Ankad et al. (2011) conducted to ascertain if a short-term practice of pranayama and meditation had improvements in cardiovascular functions in healthy individuals with respect to age, gender, and body mass index (BMI). This interventional study was conducted in the Department of physiology of S.N. Medical College, Bagalkot. Fifty healthy subjects (24 males and 26 females) of 20-60 years age group, fulfilling the inclusion and exclusion criteria underwent two hours daily yoga program for 15 days taught by a certified yoga teacher. Pre and post yoga cardiovascular functions were assessed by recording pulse rate, systolic blood pressure, diastolic blood pressure, and mean blood pressure. The parameters were analyzed by Student's t test. There was significant reduction in resting pulse rate, systolic blood pressure, diastolic blood pressure, and mean arterial blood pressure after practicing pranayama and meditation for 15 days. The response was similar in both the genders, both the age groups, <40 yrs and >40 yrs and both the groups with BMI, <25 kg/m² and >25 kg/m². This study showed beneficial effects of short term (15 days) regular pranayama and meditation practice on cardiovascular functions irrespective of age, gender, and BMI in normal healthy individuals.

Sugumar (2011) study was framed find out the effect of yogic practices on body composition among the college men students. Thirty healthy, untrained male subjects were selected from various Departments of Gandhigram Rural Institute, Deemed University, Gandhigram, Dindigul and their age ranged from 18 to 25 years. The subjects were equally divided into two groups namely the control and the experimental group. The experimental group underwent selected asanas and pranayama for five days per week for six weeks. Control group did not undergo any training programme rather than their routine work. Body composition was measured by using BIA method in the three sites. Prior to and after end of practice period all subjects were tested. The results of pre-test and post-test were compared with using Analysis of Co-variance. Finding of body composition shows significant improvement due to the six weeks yogic practice when compared to the control group.

Methodology:

The purpose of the study was to investigate the effect of yoga training on mental health among college students. For the present study the 30 male college students from Mannaniya College of Arts and Science, Thiruvananthapuram, Kerala were selected at random and their age ranged from 18 to 25 years. For the present study pre test - post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each. Group 'A' underwent yoga training only, group 'B' have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA). The level of significance was set at 0.05.

Results:

Table 1: Computation of Analysis of Covariance of Mean of Yoga Training and Control Groups on Mental Health

	YTG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	38.46	38.06	BG	1.20	1	1.20	0.15
			WG	214.66	28	7.66	
Post-Test Means	56.46	38.66	BG	2376.30	1	2376.30	165.89*
			WG	401.06	28	14.32	
Adjusted Post-Test Means	56.42	38.70	BG	2343.30	1	2343.30	160.75*
			WG	393.58	27	14.57	

(Table Value for 0.05 Level for df 1 & 28 = 4.19)

(Table Value for 0.05 Level for df 1 & 27 = 4.21)

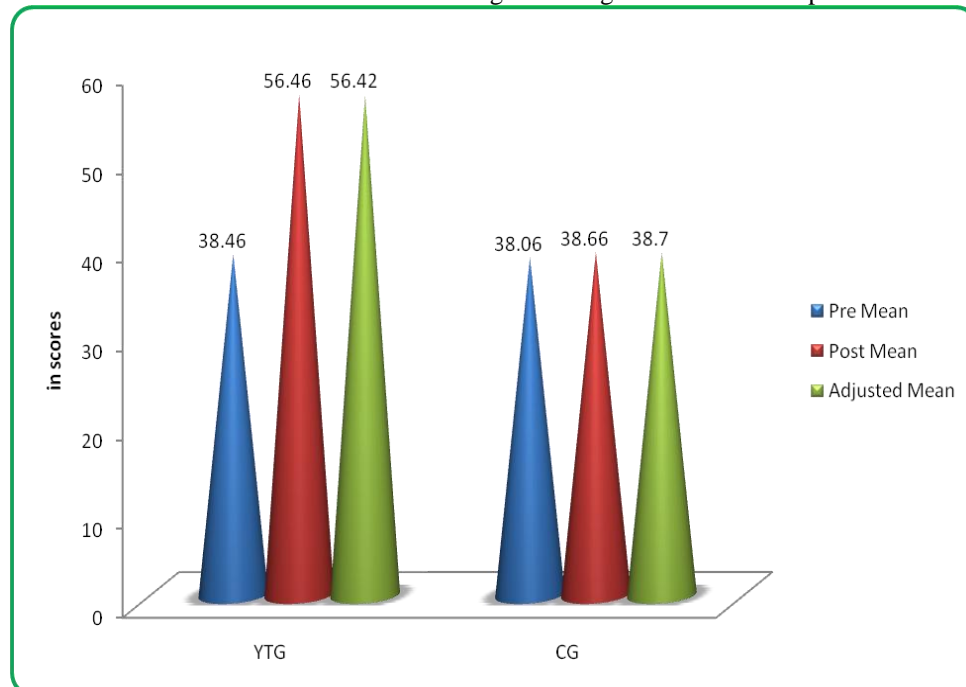
df- Degrees of Freedom

An examination of table - I indicated that the pretest means of yoga training and control groups were 38.46 and 38.06 respectively. The obtained F-ratio for the pre-test was 0.15 and the table F-ratio was 4.19. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 1 and 28.

The post-test means of the yoga training and control groups were 56.46 and 38.66 respectively. The obtained F-ratio for the post-test was 165.89 and the table F-ratio was 4.19. Hence the pre-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 1 and 28. The adjusted post-test means of the yoga training and control groups were 56.42 and 38.70 respectively. The obtained F-ratio for the adjusted post-test means was 160.75 and the table F-ratio was 4.21. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 1 and 27.

The pre, post and adjusted post test mean values of yoga training and control groups, on mental health are graphically represented in the figure 1.

Figure 1: Pre and Post Test Differences of the Yoga Training and Control Groups on Mental Health



Conclusion:

It was observed that the yoga training has significantly improved the mental health of college students.

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