



RESEARCH ARTICLE

**YOGA FOR CONTROLLING EXAMINATION ANXIETY, DEPRESSION AND ACADEMIC STRESS
AMONG STUDENTS APPEARING FOR INDIAN BOARD EXAMINATION**

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ABSTRACT

Examination anxiety, depression and academic stress are prevalent problems in students across the country. A student under a certain level of anxiety and stress does bring out his or her best in examination, however an extreme level can result into stress induced disorders and deteriorating the academic performance. Since past studies revealed that yoga can help to reduce stress, this study aims to record the efficacy of yoga on examination anxiety, depression and academic stress among students appearing for board examination. Sixty 10th standard male students aged 16–17 years were randomly assigned to experimental (n=30) and control (n=30) groups. The experimental subjects, along with daily school schedule, underwent a Yoga program comprising of various *Asanas* (isometric type exercises) and *Pranayamas* (breathing exercises) whereas control group participated in their regular school schedule only. At the baseline and after training intervention standard psychological questionnaires were used to assess the levels of examination anxiety, depression and stress. Data were analyzed by using 2 × 2 × 3 Factorial ANOVA followed by Scheffe's posthoc test. The results revealed that Yogatraining helped to reduce examination anxiety, depression and academic stress, as compared to control group. The findings conclude that Yogatraining has helped to reduce examination anxiety, depression as well as academic stress among school students appearing for the board examination.

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INTRODUCTION

Anxiety is a basic human emotion consisting of fear and uncertainty that typically appears when an individual perceives an event as being a threat to the ego or self-esteem (Sarason, 1988). In some instances, such as avoiding dangerous situations, anxiety can be helpful. However when taken to extremes, it may produce unwarranted results. In Indian education system, board examination, which starts at the secondary level of education, is very important because this level provides the base for future education and students face excessive anxiety. Students have anxiety about their marks, performance and also for their academic achievement. The board exam is the fear in itself. On one hand they wish to secure good percentage of marks for getting admission for their future education and the other hand they also want to prove themselves better than others in this highly competitive age. Sometimes children are pressurized by their parent's expectations, so they suffer from pre-examination anxiety. Persistent level of examination anxiety (EA) causes a state of distress one experiences when being evaluated or when thinking about prospective evaluations, which typically lead to reduced performances. In fact, academic examinations have been considered as one of the most acute stresses experienced by students (Deinzer et al., 2000), (Lacey et al., 2000).

Further, depression and anxiety are prevalent problems in students across the country. A student under certain stress does bring out his or her best, however extremes of anxiety and stress can result

into *stress induced disorders* and deteriorating performance. Nevertheless, to cope up with stress and anxiety among students several strategies are under study. In fact, numbers of scientific studies have reported the beneficial effects of yoga, where its historical, philosophical and psychotherapeutic aspects have also been dealt by several investigators (Nekl, 1975), (Nekl, 1977), (Rao, 1978), (Varma, 1984). Yoga therapy and relaxation is found to be useful in neurotic and psychosomatic disorders (Balkrishna et al., 1977), (Benson et al., 1974), (Vahia et al., 1973a, b). Physiological effects of the yoga practices have also been widely studied (Selvamurthy et al., 1983) and one study has reported the usefulness of systematic desensitization in examination phobia (Shukla and Nigam, 1979).

Many studies support yoga's benefits beyond introspection and meditation. Engagement in yoga has been shown to improve mental disorders, such as depression and anxiety (Javnbakht et al., 2009). Thus, it seems that the practice of yoga or relaxation may be very useful in controlling the mind and keeping it in a state of peace and tranquility, even under the stressful situations and, therefore, perhaps helps an individual to adequately cope with the competitive environment. Students are usually under stress due to a variety of reasons like vast curriculum, academic competition, examinations etc. During these stressful situations there is a possibility to increase in anxiety level and sympathetic discharge. This may, in turn, interfere with their performance and make them more prone to develop psychosomatic problems prior to the examination. This might lead to think that regular practice of yoga

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and relaxation may be useful in attenuating the increase in anxiety level and sympathetic discharge in students. This, in turn, may improve their academic performance and make them less vulnerable to psychosomatic problems. Even though there are numerous research studies indicating beneficial effects of yoga on psychological well being; however, very few studies are conducted so far on adolescent students. Hence, this study has been conducted with a view to see the effect of yoga training on examination anxiety, depression and academic stress among students appearing for board examination.

MATERIALS AND METHOD

Subjects

The participants for this study were sixty (n=60) 10th standard male students, age ranging from 16-17 years, from Government High School Naisela, P.O. Bel, Via. Patwadanger, Block Bheemtal, Dist. Nainital (Uttarakhand). The subjects were selected on the basis of their scores on the *examination anxiety inventory*. The entire class completed the inventory and the target students, who had higher level of examination anxiety, were selected. The sample students did not suffer from any acute or chronic physical illness. The informed written consent was obtained from the parents and the principal of the school. All data-sensitive materials (e.g. permission forms, and any data with the participant's name) collected during this study were secured and reporting of them in the results remained anonymous. A strict privacy was maintained towards preserving all sensitive forms.

Experimental design

The targeted students, who had higher level of examination anxiety, were randomly divided into two groups viz., yoga group (n = 30) and control group (n=30). Primarily, baseline status of examination anxiety, and academic stress levels was assessed for all the selected subjects of both the groups. The subjects of yoga group were then underwent a training of yoga practices under the overall supervision of yoga expert along with daily school schedule, whereas the comparable control group participated in daily school schedule only. The training was imparted to the yoga group daily one hour in the morning and evening except Sundays and holidays for a total period of six weeks. After completion of the experiment for six weeks, the testing of examination anxiety and academic stress was repeated.

Dropouts

During training phase of experiment one subject found irregular, whereas two subjects were absent during post test. Thus total number of subjects in the experimental and control groups remained were 29 and 28 respectively.

Yoga Practices

The yoga intervention was imparted to the experimental group for 2 hours daily (morning: 1 hr. and evening: 1 hr.), every day in a week except Sundays and holidays. For 1st 15 days, they were given Easy-Course of Yoga and during next 30 days they were trained in Full Course of Yoga programmes [along with Dhyana and OM recitations as per Kaivalyadhama (Lonavla) Tradition] as suggested by Sami Kuvalayananda (1956).

Easy course of yoga: Bhujangasana, Ardha-Shalabhasana, Ardha-Halasanana, Vakrasana, Chakrasana, Paschimatanasana, Yoga-Mudra omkar Ujjayi Pranayama.

Full course of yoga: Sarvangasana, Halasana, Bhujangasana, Shalabhasana, Dhanurasana, Ardha-Matsyendrasana, Paschimatanasana, Mayurasana, Shavasana, Yoga Mudra, Ujjayi, Bhastrika, kapalabhati. Each session of yoga practices was concluded with om chanting. The duration of each asana (posture) was ranged from 2 to 3 minutes depending upon the improvement in performance, whereas 2-5 minutes for practice of pranayama.

Psychological Assessment

Examination anxiety

Student examination anxiety scale (Agarwal and Kaushal, 2005) was administered to assess the level of examination anxiety among secondary school students. The test has reliability coefficient of 0.87 and face validity. The test can be scored by hand. Each "Yes" responses is indicative of anxiety, hence one mark is awarded for each "Yes" responses. The sum total of "Yes" responses would be the total anxiety score of the individual. The individual may be classified into one of the five categories i.e. extremely high anxiety, high anxiety, normal anxiety, low anxiety and extremely low anxiety on the basis of scores obtained on the test.

Academic stress and Depression

This scale by Bhatnagaret al.,(2005) was used for the assessment of the general Anxiety, Depression and Stress of an individual. The total numbers of items in this scale were 48 which are divided into three categories i.e. Anxiety, Depression and Stress. Reliability of the total scale in terms of internal consistency as measured by Cronbach's Alpha and Spearman-Brown coefficient is 0.81 and 0.89 respectively. The obtained reliability for anxiety, depression and stress subscales as measured by Cronbach's alpha is 0.76, 0.75 and 0.61 and when measured by Spearman-Brown coefficient is 0.86, 0.86 and 0.76 respectively. Each item is scored 1 if endorsed "YES" and 0 if endorsed "NO". The range of the score is 0-19 for anxiety subscale, 0-15 for depression subscale and 0-14 for stress subscale. Higher score indicates experiencing greater anxiety, depression and stress and vice-versa.

Statistics

Data are expressed in mean \pm standard deviation. Since there were three major dependent variables along with two testing programmes (i.e. Pre-test and Post-test) conducted for two different groups, the inferential statistics 2 x 2 x 3 factorial ANOVA was used. Further, *Scheffe's post hoc test* was applied to infer any significant changes between groups.

RESULTS

The results of descriptive statistics evaluating the central tendency and dispersion (Table 1) of the selected variables revealed that the pretest mean scores of the control and experimental groups for Examination anxiety, Academic stress and Depression were mostly similar. This would seem logical because the subjects of both the control and experimental groups were matched prior to experimental intervention. The post-test results of the experimental group (Table 1) indicate favorable changes in the means of almost all the selected variables whereas an opposite trend, although not statistically significant, is evident in the case of the control group. However, the results of 2 x 2 x 3 Factorial ANOVA followed by *Scheffe's posthoc test* also revealed a different trend. The overall significance of the data was acceptable at the 0.01 level of confidence (F = 42.55, $p < 0.01$). This result indicates that there must be significant difference between the

groups and within the groups including their interactions. The result also reveals that there is a significant difference between the control and experimental groups in almost all the variables ($F = 31.20, p < 0.01$). The value of interaction was also statistically significant ($F = 14.25, p < 0.05$). Thus, it can be interpreted that the mean changes in Examination anxiety, Depression and Academic stress among students appearing for board examinations were statistically significant.

Table 1 Mean and SD of examination anxiety, depression and Academic stress levels in students appearing for Board examination

Variables	Experimental Group		Control Group	
	Pre	Post	Pre	Post
Examination anxiety	15.47 ± 5.42	17.93 ± 4.24	15.10 ± 5.29	26.13 ± 4.02
Depression	14.77 ± 3.88	10.07 ± 2.69	14.17 ± 3.62	16.83 ± 3.21
Academic Stress	18.47 ± 3.39	14.07 ± 2.48	19.10 ± 3.24	20.70 ± 3.28

Table 2 Scheffe's post hoc test for differences between pairs of ordered means in Examination anxiety, Stress and Concentration levels

Variables	Steps	c	b	a
Examination anxiety	d	0.31*	0.38*	0.21
	c		0.39*	0.10
	b			0.33*
	a			
Depression	d	0.24*	0.42**	0.19
	c		0.44*	0.15
	b			0.37*
	a			
Stress	d	0.27*	0.36*	0.16
	c		0.37*	0.12
	b			0.30*
	a			

** $p < 0.01$ * $p < 0.05$ (Where for Yoga group.: a=Pretest, b=Post test; for

Further, the results of mean achievement in Examination anxiety as obtained from Scheffe's Post Hoc test (Table-2) revealed that Control group showed significant increase ($CD = 0.31, p < 0.05$), whereas the Experimental group showed significant decrease in examination anxiety ($CD = 0.33, p < 0.05$). However, the overall result indicates that the experimental group had lower examination anxiety than the control group ($CD = 0.38, p < 0.05$). This result shows that yoga training was helpful in reducing examination anxiety among the students. In case of depression the experimental group showed statistically significant reduction ($CD = 0.37, p < 0.05$) whereas control group showed significant increase ($CD = 0.24, p < 0.05$). Comparative results indicate that the experimental group subjects could significantly reduce depression as compared to the control subjects ($CD = 0.42, p < 0.01$). Thus, the six week-long yoga training intervention was found to be useful for reduction in depression level among students. Academic stress appears prevalent in students appearing for board examination. The result revealed that after the yoga intervention the level of academic stress was reduced in the experimental group ($CD = 0.30, p < 0.05$) whereas the control group subjects showed increase ($CD = 0.27, p < 0.05$). The comparative results indicate that the experimental group showed significant superiority over controls for reduction in academic stress ($CD = 0.36, p < 0.05$). Thus, the yoga training program is effective in reducing academic stress among students appearing for board examination. The result finally infers that the six week-long Yoga training intervention was found to be useful for the reduction of

examination anxiety, depression and academic stress among students appearing for board examination.

DISCUSSION

Yoga is an ancient Indian way of life which includes the major practice of certain postures (*asanas*), regulated breathing (*pranayamas*), and concentration (*dhyana*).

Yoga practices are considered to be beneficial for the physical and mental health of children. Further, many scientific investigations on yoga have already been done in past and yoga has been accepted as a successful technique not only to develop spirituality, but also as an effective means to maintain psycho-physiological and biochemical homeostasis leading to good health (Malathiet al.,1998), Shapiroet al., 2007),(Uebelackeret al.,2010). Although, nowadays, majority of the Indian schools included yoga for school children, little is known about its role in controlling *examination anxiety, depression and academic stress* of those students who are especially appearing for Indian Board examination.

From the results, it is evident that practice of yoga reduces examination anxiety, depression and academic stress among the students appearing for board examination. During baseline study, it was evident that the students appearing for board examination perceived a higher level of academic stress. The perceived stress of an examination may be aggravated by the anticipation of difficult examination questions, feelings, or beliefs regarding mastery in the subject, relative importance of the exam, and other factors. This can lead to sense of distress, which is generally manifested in a variety of psychological and behavioral problems. The experience of academic stress and adolescent distress has been identified and explored by earlier researchers (Lee and Larson, 1996),(Hill, 1996),(Schoolland, 1990). Further, Psychologists in India have speculated that academic stress leads to adolescent distress (Iype, 2004).

For instance, a study conducted by a mental health organization in 150 educational institutions in New Delhi found that 40% of students feel overwhelmed by exams. Another study conducted by a non-governmental organization with 850 students found that 57% were depressed and 9% had considering committing suicide as a result of academic stress (Pasmantier, 2005) and the similar result has been supported by Maheshananda et al.,(2012). These studies, in fact, reflects that the students appearing for Board examination are under stress and this can lead to increase in anxiety, depression and poor mental health. Nevertheless, previous studies indicate potential benefit of yoga intervention in patients suffering from anxiety neurosis and reactive depression (Maheshananda et al.,2012),(Malathiet al., 1998),(Vahia et al., 1973). Further, some studies have specifically demonstrated prospective psychological benefits of yoga in various clinical populations, including patients with depression (Pilkington et al., 2005),(Shapiro et al., 2007),(Uebelacker et al., 2010), stress

(Mohan, 1996), and anxiety (Gupta, 2006),(Kirkwood et al., 2005). In the present investigation psychological parameters like examination anxiety, depression and stress in students were explored scientifically and it was evident from the results that yoga practices helped to improve overall psychological parameters. These results suggest that Yoga training may help to control pre-examination anxiety, depression and academic stress and thereby may restore relaxation that may lead to better results in the board examination.

CONCLUSION

Six week yoga training has potential benefits to reduce examination anxiety, depression and academic stress in students appearing for board examination. Repeated study in this direction on students appearing for different competitive examinations is further suggested.

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