



## Physiology

## A STUDY OF YOGIC PRACTICES ON ACADEMIC PERFORMANCES OF PARA-MEDICAL STUDENTS

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**ABSTRACT**

**BACKGROUND:** Yoga has been reported to increase focus and mental alertness of school going students improving their academic performances.

**AIMS AND OBJECTIVES:** The present study incorporates the effect of long term daily yoga practices on the academic performances of adult paramedical students

**MATERIALS AND METHODS:** Academic performances of adult paramedical students were assessed three times by objective assessment during present study of 6 months durations while students practiced yoga six times a week continuously.

**RESULTS:** In the present study, mean score of percentage of marks increased from 46.3% of 1st assessment finally to 71.3% ( $p < 0.001$ ) in 3rd assessment indicating increasing grades of academic performances with long term six time a week yoga practices.

**CONCLUSION:** Long term yoga practices improved academic performances of paramedical students.

**KEYWORDS :** Yoga, Long term, Academic performances

**INTRODUCTION**

Yoga is a group of physical, mental, and spiritual practices or disciplines which originated in ancient India (1). Yoga is a mind-body practice that has many components such as physical postures, exercises to promote strength, breathing exercises to enhance respiratory function, relaxation to release tension and stress, and mind body awareness to improve attention and regulation skills (2). It has been stated that those who practiced yoga desired to be "in the moment" as it was intended to "wake the body and still the mind" (3). A positive effect of yoga has been found on increasing focus, mental alertness, academic performance, and inner strength of the practitioners (3). The experience of yoga has been reported to improve academic performance, readiness to learn, and enthusiasm for learning (4). It has been shown that during yoga practices, influences on individual abilities might increase self-awareness and result in positive academic outcomes (5). Daily yoga practice has been found to increase student engagement and achievement in a post yoga academic class (3).

The present study was done to evaluate the effect of long term daily yoga practices on the academic performances of adult paramedical students. Results of this study may provide teachers a healthy non-academic activity enhancing engagement and increasing achievement of their students.

**MATERIAL AND METHODS**

24 students, (15 males and 9 females) aged 18-28 years; of paramedical course Bachelor of Naturopathy and Yogic Sciences, MASINYS, Swami Vivekanand Subharti University, Meerut voluntarily participated in this study. The duration of study was six months. Before starting the study permission of Institutional ethical committee was taken. Students were explained in detail about this study and their consent was taken. Their studies were not affected by participating in this research as six times a week yoga training was part of their curriculum and their performance was assessed in subject Physiology for which they were having the routine classes. None of them was suffering from any major medical, orthopedic, or psychiatric illness and not undergone any yogic practices earlier.

**Students were assessed three times**

- 1<sup>st</sup> assessment: After 1 months of their joining the course and starting the yoga training.
- 2<sup>nd</sup> assessment: After 3 months of their joining the course and starting the yoga training.
- 3<sup>rd</sup> assessment: After 6 months of their joining the course and starting the yoga training.

1<sup>st</sup> assessment has been considered as control and 2<sup>nd</sup> and 3<sup>rd</sup> assessments have been considered as case – 1 and 2.

Yogic practice was done six times a week, for one hour daily from 8:00

to 9:00 a.m. and the following schedule was followed:

- Prayer – 1 min, b) Sthithapragnyasan – 2 mins c) Ananas Talasan, Hastapadaasan, Utkatasan, Parvatasan, Sashankasan, Yogamudra, Uthitekapadasan, Uthitedwipadasan, Shalabhasan, Sulabhabhujangasan, Ushtrasan – 25 mins, d) Anulomvilom, Ujjayi, Bhramari – 5 mins, e) Yoganidra with visualisation – 20 mins f) Meditation – 5 mins.

For evaluating the academic performances of the students, objective assessment was done in the form of multiple choice questions (MCQ) of subject Physiology form the course taught. In every assessment session, the students were asked to solve 20 MCQs and their performance was evaluated respectively. In every next session, course covered in previous session was not asked to avoid repetition of MCQs.

**INCLUSION CRITERIA OF STUDENTS:**

- Healthy young male and female paramedical students of first year.
- Age group 19 – 28 years.
- Body Mass Index (BMI) 18 – 28 kg/m<sup>2</sup> (6).

**EXCLUSION CRITERIA OF STUDENTS:**

- Students with a history of any disorders like diabetes mellitus, hypertension, alcoholism, bronchial asthma, cardiovascular disorders.
- History of alcohol, smoking habits and tobacco addicts.
- History of any drug intake.
- Students who has undergone major surgery.
- Students with locomotor and musculoskeletal abnormalities.
- Presence of obesity, anemia and chronic diseases.
- Students having any endocrine disorders were excluded from the study.

**Data Analysis:**

The data was analyzed by using quantitative techniques. Analysis of quantitative data has been done by using the Student's paired t-test, and ANOVA. All the data are expressed as mean  $\pm$  SEM. The program "GraphPad Instat 3.06" was used for this analysis.

**RESULTS**

**Table: Effect of Yogic Practices on Academic Performances (Percentage of Marks obtained in objective assessment tests) of Para-Medical Students**

Percentage of marks in	1 <sup>st</sup> Assessment (n = 24)	2 <sup>nd</sup> Assessment (n = 24)	3 <sup>rd</sup> Assessment (n = 24)	P value (Anova)
	46.3 $\pm$ 7.9	55.7 $\pm$ 7.3***	71.3 $\pm$ 5.7***	<0.001

Values are expressed as Mean  $\pm$  SEM. pns>0.05, p\* < 0.05, p\*\* < 0.01, and p\*\*\* < 0.001, as compared with control (1st assessment) values.

Table reveals that mean is continuously increasing.

In first assessment normal distribution ranges from 38.4 to 54.2% and in second assessment from 48.4 to 62.9% while in third session, it ranged from 65.6 to 77.0%. The high range of percentage secured by students has continuously increased from 54.2 to 77.0% indicating the positive effect of continued yoga practices. In the similar way low range has also increased from 38.4 to 54.2%.

The result table revealed that there are significant differences from 1st assessment to 3<sup>rd</sup> assessment.

F value is much higher than F critical value. It also signifies that yoga has improved the academic performances of the students.

## DISCUSSION

It has been reported that yoga practices enhance the decision making in students as well as concentration and retention (7). Similarly, yoga practices have been found to boost memory of students (8).

Some researchers conducted a study which reflected high levels of academic achievement in students practicing yoga (9).

In the present study, mean score of percentage of marks increased from 46.3% of 1<sup>st</sup> assessment to 55.7 in 2<sup>nd</sup> and finally to 71.3% in 3<sup>rd</sup> assessment indicating increasing grades of academic performances just like the prior studies.

The most probable reason of improvement in academic performances in the present study could be improved concentration and retention ability, increased focus and mental alertness of students because of yoga practices as well as improvement of memory as discussed previously.

Same results were observed in various studies (10 & 11), reinforcing the claims made in the present study. Further studies should be carried out with large population and other variables such as gender, age, stress level, life style, etc. should also be included.

## CONCLUSION

The foregone discussion revealed that there is a positive effect of long term six time a week yoga practices on academic performances of adult paramedical students. The present study recommends that yoga practices should also be included in the curriculum of medical students for benefitting their academic performances.

## ACKNOWLEDGEMENT

SA sincerely acknowledges the authorities and staff-members of the department of Physiology, SMC and of MASINYS, SVSU, Meerut for their support.

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