JOURNAL OF NATURAL REMEDIES
DOI: 10.18311/jnr/2021/25874
RESEARCH ARTICLE

Effectiveness of Superbrain Asana on the Academic Performance in Dental Students — An Interventional Study

B. R. Premalatha[1*], Jagadeeswari Sudhir[2], Usha Hegde[1], H. S. Sreeshyla[1], Vidyadevi Chandavarkar[3] and Mithilesh N. Mishra[3]

[1]Department of Oral Pathology and Microbiology, JSS Dental College and Hospital, JSS Academy of Higher Education and Research, Mysore - 570015, Karnataka, India; drpremalathabr_dch@jssuni.edu.in
[2]Yoga Prana Vidya (YPV), Sri Ramana Trust, Mysore Yoga Vidya Pranic Healers Association (MYPHA), Mysore - 570022, Karnataka, India
[3]Department of Oral & Maxillofacial Pathology, School of Dental Sciences, Sharda University, Uttar Pradesh - 201308, India

Abstract

Superbrain asana (SBA) is an ancient yogic exercise which is claimed to boost holistic well-being. It is established on the principles of subtle energy movement in the body and ear acupuncture. Proponents assert that this exercise improves cognition and academic performance. Our study aimed at assessing the effectiveness of SBA on the academic performance in dental students by comparison of the pre-intervention and post-intervention test scores. This interventional research had a pretest – posttest design and was conducted on 99 dental undergraduate students. SBA exercise was implemented for three months for six days in a week. Pre and post-intervention tests with multiple choice questions were administrated to the students without giving any prior intimation. The test scores were compared and the observations were subjected to statistical analysis. The data collected were analysed with the Wilcoxon signed-rank test of significance. It was found that there was a statistically significant increase in the median test scores after the intervention (p-value <0.001).With our study, we conclude that *Superbrain asana* intervention is highly effective in improving the academic performance of the dental students and it can be successfully incorporated into the professional education curriculum.

Keywords: Academic Performance, Dental Students, Holistic Development, Superbrain Asana, Superbrain Yoga

1. Introduction

Superbrain asana (SBA) also known as Superbrain Yoga (SBY) is an effective and simple ancient yogic exercise to recharge and energize the brain. SBA is well known by the names of *Thoppukaranam* and *Ganeshasana* in the south and north India respectively[1]. It is mainly established on the principles of *Pranic* energy (subtle / bio-plasmic energy) and ear acupuncture.

SBA exercise is performed by pressing one's earlobes with thumb and forefinger in a particular position; hands placed across the chest; squatting 14 times; following a recommended technique of breathing and facing a particular direction[2,3]. Proponents assert that this exercise enhances cognition and academic performance[4] and with the regular practise of SBA, individuals are calmer and more focused. The overall improvement is shown in all areas including functional and behavioural interaction with the environment with more success[1]. Earlier researches on SBA revealed that it can help students and even older individuals to remain mentally and intellectually active[2].

In professional institutions, unlike in schools, priority is not bestowed upon holistic aspects of students' development owing to the extensive nature of professional

*Author for correspondence

Article Received on: 13.08.2020 Revised on: 11.06.2021 Accepted on: 30.07.2021

training. Our challenge in this study was to assess whether we can successfully incorporate this simple exercise into the dental students' routine without hindering their classes or training. With this background, our research study was directed at assessing the effectiveness of SBA on dental students' academic performance.

2. Methodology

The study was conducted among under-graduate dental first-year students of JSS Dental College and Hospital, Mysuru aged between 17 to 19 years. The study was initiated after the approval from the Institutional Ethics Committee. Inclusion criteria for the study were students who consented to be part of the study. Exclusion criteria were students with psychiatric conditions, serious medical conditions, physical deformities that impeded the exercise performance and students on long term prescription medications. Students who were non-compliant with the exercise routine or could not take pre/post-intervention tests were withdrawn from the study.

The objectives of our study were to evaluate and compare the pre-intervention and post-intervention Multiple Choice Questionnaire (MCQ) test scores in the study group. The pre and post-intervention MCQs with 30 items each on two different chapters of Dental Anatomy and Oral Histology (DAOH) subject were prepared and were validated by three subject experts. Following the informed consent procedure, 99 students were recruited to be part of the study. Out of 99 students, 26 were withdrawn due to non-compliance with the study protocol. A total of 73 students (19 males and 54 females) constituted the final study population.

A Pre-intervention MCQ test on a DAOH topic was administered after a lecture class on the same topic. The students did not have prior information about the test. The answers were evaluated and scored. This was followed by training and regular implementation of 3 minutes duration SBA exercise for three months before the beginning of the lecture classes for 6 days in a week. Detailed step by step procedure for performing SBA is elaborated in Figure 1.

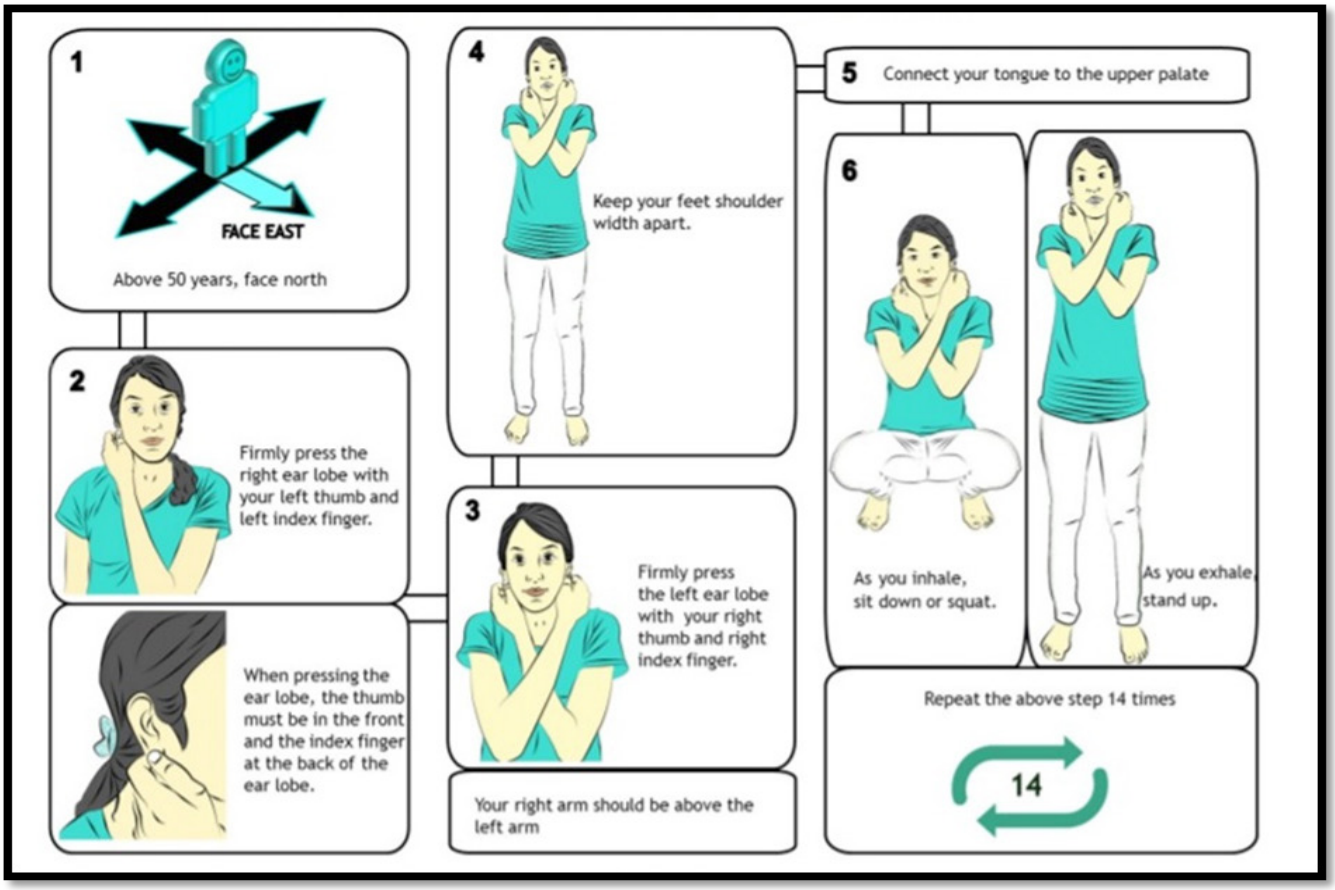

Figure 1. Steps to perform superbrain *asana*.
*Image courtesy: Yoga PranaVidya (YPV), Sri Ramana Trust Ashram.

The exercise implementation was monitored by class leaders and investigators. Following the study period, a post-intervention MCQ test was administrated on a DAOH topic at the end of a lecture class on the same topic without giving any prior intimation to the students. The answers were evaluated and scored. The pre and post-intervention test scores were compared and the results were subjected to statistical analysis.

3. Results

Data generated by the study were entered into MS Excel followed by analysis using statistical package for social sciences (SPSS version 22) licensed to JSSAHER. Descriptive statistics were used to describe the demographic characteristics of the sample. The demographic characteristics of the study sample are elaborated in (Table 1). A total of 73 students (19 males and 54 females) constituted the final study population. Majority of the participants were females (74%).

Assessment of the effectiveness of the SBA was done by comparison of pre and post interventional test scores of the students (Table 2). Non-parametric test of significance, Wilcoxon signed-rank test was used for the analysis of the data. P-value < 0.05 was considered to be statistically significant. On analysis, it was found that there was a statistically significant increase in the median test scores after the intervention (p-value <0.001). Thus, our results prove that SBA intervention is highly effective in improving the academic performance of the students.

Table 1. Demographic characteristics of the study sample

	Frequency	Per cent
Females	54	74.0
Males	19	26.0
Total	73	100

Table 2. Effectiveness of the SBA intervention (Comparison of pre-post interventional test scores)

	N	Median	IQR	P-value
Pre-intervention test scores	73	12.00	(9.00-16.00)	<0.001*
Post-intervention test scores	73	18.00	(15.00-21.00)	

*Wilcoxon signed-rank test

4. Discussion

History: The revered Indian sages have developed this yogic technique to improve the intellect of people based on the principles of *prana* or subtle energy movement through various *chakras* of the energy body and on ear acupuncture[2].

In India, this exercise constitutes a traditional form of worshipping of the deity Lord Ganesha[5], in which the devotees squeeze the earlobes between thumb and forefinger with hands crossed over the chest and carry out repetitive squats for 18/108/1008 times. The common belief is that this practice will bestow success in all the endeavours of the worshippers[6].

Also, it has been used as a form of disciplining children in schools and households. Even though it does not find any mention in Vedic scriptures, it has been passed down as narration and is practised even today with lot of conviction. Further, in Chinese Acupuncture and Indian Ayurvedic systems, the earlobe is believed to contain energy meridians which correspond to the head[6]. This technique, in recent years was re-introduced and popularized by the founder of Pranic healing system, revered Grand Master ChoaKok Sui, the pioneering authority in employing subtle energy into healing, wellness and spirituality[7], to boost overall physical and mental well-being[5].

Principle of SBA: It is mainly based on the principles of A) Ear acupuncture, B) *Pranic* energy movement in the body and C) Enhanced alpha waves with synchronized brain hemispheres.

A) Ear acupuncture: In Eastern medicine, the pinna of ears is viewed as a micro-system representing the whole body. The shape of the ear is supposed to correspond to the inverted position of the fetus curled within the womb. Points on the ear correspond to specific parts of the body, and the earlobe corresponds to the head. Consequently, the massage of earlobes can induce therapeutic benefits to the brain. The practice of earlobe piercing in traditional cultures has its reasoning in acupuncture, wherein there is stimulation of the brain, due to the pressure on the earlobes[8].

B) *Pranic* energy movement in the body: According to Sui, *chakras* are whirling centres in the energy body that absorb, digest and allocate prana or bioplasmic energy to various body parts and are responsible for the proper functioning of metabolic activities. SBA shifts energy trapped in the lower (*Muladhara* and *Svadisthana*) chakras through the major energy centres and finally up into the crown (*Sahasrara*) *chakra* that governs the overall brain health. Thus, SBA improves the qualitative and quantitative *pranic* energy in the brain[2]. SBA also benefits the adolescents by regulation of their sex drive and by providing psychological stability[3].

C) Enhanced alpha waves in the brain with synchronization of both brain hemispheres: When the brain waves are in an alpha state, an individual is calm and at the same time more alert. In this state, the prefrontal lobes are free to engage in higher-level mental tasks such as creativity, concentration, problem-solving, learning and memorization[3]. The alpha wave activity in the brain is known to rise immediately after performing SBA[9]. It is also observed that an increase in alpha waves had a long-term improvement in memory functioning, perceptiveness, speed of information processing, decision-making and problem-solving ability[3]. SBA technique also brings about synchronization of the left and right brain hemispheres and brain integration[10]. Investigation of SBA practitioners with Electroencephalogram (EEG) and brain maps show that their brains are fully synchronized, balanced and the alpha waves are more active[2]. When the brain is in an integrated state, it can perform higher-order functions by using resources of both the hemispheres[8].

SBA can also be viewed from the point of it being a physical exercise. Numerous scientific studies have shown that there is a positive effect on attention, cognitive performance and overall brain function by practise of any forms of physical activities and especially practise of coordinated exercises[3].

In the present study, the effectiveness of SBA on the academic performance of dental undergraduate students was investigated. Similar to the positive results obtained in our study, a plethora of researches have shown the positive impact of SBA on mental health, cognitive functions and other related variables.

Numerous studies conducted on SBA in school-age children have shown that it was effective in reducing symptoms of autism[11], Attention deficit hyperactive disorder (ADHD)[12] and speech delay[13]. Few studies have reported improvement in memory, selective attention[3], confidence, school attendance and overall academic performance[2,13]. Reduction in stress levels and distraction thoughts (mind wandering)[7]. There is evidence that with regular practise of SBA there is an increase invisio-spatial ability, brain perception and motor output among school children[13,14].

Several studies conducted on SBA in adolescents and young adults have shown enhancement of mindfulness, cognitive functioning, psychological states[6], mental activity[1] and reduction in the academic anxiety levels[15]. Behaviour modification techniques and SBA were found to be efficient in treating mathematics anxiety in an adolescent student in a case study[8]. In a study conducted on medical students, SBA was found to have a positive impact on attention control and working memory components of cognition when compared to the simple squats exercise group[5]. In contrary to the above studies, Genovese and Little did not obtain any significant difference in the academic performance of adults practising SBA[4].

Though our study elicited significant findings there are several limitations to be considered and which present scope for future scientific researches. Our study assessed only lower-order cognition such as the recall of factual information through multiple choice questions; higher-order cognition such as synthesis, creative thinking and problem-solving were not assessed; gender representation was not equal and long-term sustenance of result of the intervention remains to be assessed.

5. Conclusion

Superbrain *asana* is easy to learn and an effective exercise technique. Regular practise makes the practitioner smarter and more psychologically balanced. With our study, we could prove that SBA can be successfully incorporated into the professional training of young adults in general and dental professional students in particular. Simple and quick exercises are a welcome break from the routine to the students and they can also enjoy the additional benefits of improved concentration, memory, learning outcomes, enhanced academic performance and overall holistic development.

6. Acknowledgement

We are indebted to Shri NJ Reddy, Founder, Yoga Prana Vidya (YPV), Sri Ramana Trust, India, for the great support and encouragement for our endeavour. We are grateful to Mr Arun Gopi, Lecturer, Department of Community Medicine, JSS Medical College, Mysuru, for his timely assistance in the statistical analysis of the study data.

7. References

1. Verma S, Kumar K. Evidence-based study on super brain yoga and its application on alpha E.E.G. in adolescence. Int J Sci Conscious. 2016; 2(4):40–6.
2. Jois SN, D'Souza L. The effectiveness of superbrain yoga on concentration, memory and confidence in school students. Indian J Tradit Knowl. 2018; 17(4):741–4.
3. Jois SN, D'souza L,Moulya R. Beneficial effects of superbrain yoga on short term memory and selective attention of students. Indian J TraditKnowl. 2017; 16(suppl):S35–9.
4. Genovese JEC, Little KD. Two studies of superbrain yoga's potential effect on academic performance based on the Number Facility Test. Psychol Conscious: Theory Res Pract. 2015; 2(4):452–60. https://doi.org/10.1037/cns0000061
5. Thomas JI,Venkatesh D. A comparative study of the effects of super brain yoga and aerobic exercise on cognitive functions. Natl J Physiol Pharm Pharmacol. 2017; 7(9):895–900. https://doi.org/10.5455/njppp.2017.7.0309126062017
6. Angelica Chandrasekeran A, Rajesh SK, Srinivasan TM. Effect of repetitive yogic squats with specific hand position (Thoppukaranam) on selective attention and psychological states. Int J Yoga. 2014; 7(1):76–9. https://doi.org/10.4103/0973-6131.123497
7. Pandey SK, Singh AP. A study of superbrainyoga on memory enhancement and mental health of Adolescence. J Emerg Technol Innov Res. 2019; 6(6):435–40.
8. Ganesan R, Singh P. Management of mathematics anxiety through behaviour modification, superbrain yoga and JPMR in ninth standard student. Int J Indian Psychol. 2017;4(2), No.85.
9. Ramesh D (2007). Superbrainyoga – a research study: In Prana World; winter (18-22). Available from: http://www.pranichealingontario.ca/SUPERBRAIN.pdf
10. Sui CK. Superbrain Yoga. 1st ed. Bangalore (India). Institute for Inner Studies Publishing Foundation Inc; 2005.
11. Farahani PV, HekmatPou D, Khonsari AH, Shamsikhani S, Pour PM, Gholami M. The effect of super brain yoga on children with autism disorder. CMJA. 2016; 6(3):1549–59.
12. Farahani PV, Pou DH, Pour PM, Gholami M. Effectiveness of super brain yoga for children with hyperactivity disorder. Perspect Psychiatr Care. 2018; 1–7. https://doi.org/10.1111/ppc.12266
13. Jois SN, D'Souza L. Effectiveness of super brain yoga on the academic performance and attendance of school students. Psychology and Education. 2018; 55(1 & 2):57–61.
14. Berchicci M, Pontifex MB, Drollette ES, Pesce C, Hillman H, Russo FD. From cognitive-motor preparation to visual processing: the benefits of childhood fitness to brain health. Neuroscience. 2015; 298:211–19. https://doi.org/10.1016/j.neuroscience.2015.04.028
15. Kumar P, Singh V. Application of super brain yoga for academic anxiety management in adolescence. Int J Yoga Allied Sci. 2016;5(2):133.