

Evidence based study on super brain yoga and its application on alpha E.E.G. in adolescence

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Abstract

According to the US Department of Health and Human Services, mental illness is characterized by alterations in thinking, mood or behavior associated with distress and impaired function.^[1] It could refer to one or more mental disorders at a time. Mental illness is a global public health concern. According to the World Health Organization, one out of four (25%) persons is affected with some kind of mental illness. The prevalence of mental disorders is higher in developed countries, but the global burden of untreated mental disease is higher in developing nations. Eighty percent (80%) of the population suffering with mental illness lives in low-and middle-income (LAMI) countries. The presence of mental illness does not affect only the individual and his personal, social, educational and occupational life, but it also makes his entire family to suffer from negative consequences. The purpose of this study is "To assess the efficacy of super brain Yoga along with few yogic techniques on mental activity in adolescence". For this study we had selected randomly 50 Sanskrit students with age ranging between 15 to 22 years of age. Practicing 51 minute/ day yogic intervention particularly and only those students were considered who were willing to participate in such type of practices. The students are male and almost equal in the term of education, mental status, socio economic status and types of work. Then at the initiation of practice 0th day pre data was collected by team on mental activity by Neurosky mind wave mobile and at the end of session on 30th day of intervention post data was taken. According to obtained data we found that there was statistically significant difference at 0.01 levels between pre and post conditions in the level of alpha E.E.G. This reveals the effectiveness of super brain yoga along with yogic practices in enhancement of mental activity and the state of meditation in special reference with college going adolescence. Finally we can firmly state that super brain yoga can play an efficient role in the enhancement of mental activity and state of meditation as well in the college going adolescence.

Keywords: Alpha E.E.G., Mental activity, Super brain yoga

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Super brain yoga and its application on alpha E.E.G.

Introduction:

The human brain is amazing – even so more sophisticated than any existing computer – that it gives people powerful potential. “A baby is born into the world with around 100 billion brain cells, give or take a few million. A brain cell is technically called a neuron, and a neuron is so miniscule that 30,000 of them fit on a pinhead. The brain is so important to the species that four weeks after conception, an embryo that will become a baby produces half a million neurons every minute. A complex system of 300 million neurons connects the brain’s right and left lobes. Each person’s 100 billion neurons have about 20,000 very important connecting branches called dendrites. There are said to be more possible connections in the human brain than the number of atoms in the entire universe.”^[12] “Yoga research for children with ASD has demonstrated improvements in stillness, following directions, emotional expression, and social interaction.”^[12,13,14,15,16,17,18,19] There were no studies found on alpha E.E.G. and super brain yoga. “Super brain Yoga is a simple and effective technique to energize and recharge the brain. It is based on the principles of subtle energy and ear acupuncture.”^[8] Super brain Yoga is an exercise that involves squatting while holding the ear lobes with controlled breathing. Advocates claim that this exercise improves cognition and academic performance.^[9] It appears that this multisensory enriched yoga did have a positive impact on this young boy’s behaviors related to physical, social, and emotional well-being on and off the mat. ^[10] The present study is to test the ability of Super brain Yoga in the improvement of mental performance.

A case study done by Koterba, R. (2007) with administering the super brain yoga revealed a great result in the case of ADHD i.e. RT is a seven year-old boy with a diagnosis of attention deficit/ hyperactivity disorder and pervasive developmental disorder. Following

regular Super brain Yoga exercises, he appears calmer and more focused. He is able to engage in an entire therapy session, for about 30 minutes, with little to no behaviors. He is able to walk through the hallways without running, jumping, spinning or crashing. He sits and attends in class, displays improved social skills and expressing his feelings to his classmates and teachers. R.T. has made a huge improvement in all visual-motor integration subtests. Most improvement was seen in the area of Visual-motor Speed.^[12]

With the use of regular Super brain Yoga, the children are calmer and more focused. Overall improvement is shown in all areas including function and behavior; interacting with the environment with more success.^[12]

What is super brain yoga?

1. Remove any jewelry. Face east, if you know where it is.
2. Roll your tongue in the inward direction and press it firmly towards the roof of your mouth.
3. Raise your left arm in front of you. Important, left arm first.
4. Fold at the elbow and reach for your right earlobe.
5. Hold your right earlobe with your left hand so that the thumb is on the outside and two fingers are on the inside, behind the ear.
6. Extend your right arm in front of you.
7. Fold at the elbow and reach for your left earlobe. The right arm will cross over the left one.
8. Position your thumb and forefinger in the same manner as on right earlobe.
9. Inhale deeply through your nose and simultaneously squat down gently to a sitting position, with your arms as above. No chair required, just squat. If you can go down almost to floor level, that is best.

10. If possible, hold the position for two or three seconds. Exhale gently and rise to standing position as you are exhaling.
11. Release your ears, leave your arms loose by your sides and disconnect tongue from roof of mouth.

Methodology:

Sample:

The total sample of 50 Sanskrit students ranging in age from 15 to 22 years was selected from the Sanskrit college of district Haridwar, Uttarakhand, (India). This sample consists of 20 Students in experimental group. A random sampling was done to select the best and interested samples. Pre test and post test was administered to assess the

effectiveness of yogic practices. Only male participants are considered and minimum education was at least secondary level.

Experimental session:

The intervention program of yogic practices was given to the experimental group. Participants assigned to the group and they performed the selected yogic intervention in group early in the morning at 6:30 A.M. for twenty one (21) minutes for just 30 days excluding Sundays and holidays. Total 24 days intervention given to the students. The intervention schedules are as shown in given. During the course of this study they instructed not to do any other yogic practices as well.

S. No.	Yogic interventions	Round/day	Duration
1.	Gayatri Mantra Chanting	12 round / day	6 min
2.	Super brain yoga	18 round/ day	10min
3.	Relaxation/ Yognidra	1 round / day	5 min
Total			21 min/ day

Design:

Pre test and post test research design was used in the present study; groups are practicing the yogic practices along with the super brain yoga techniques as intervention. At the end of the treatment, group is measured again to evaluate the difference between pre and post condition as a result of the treatment or intervention.

Tools:

To measure the alpha E.E.G. level of the students, Neurosky mind wave mobile apparatus has been used for the measurement of alpha wave of the student in the pre and post condition.

Procedures:

This study was conducted at Haridwar Uttarakhand. So we have to consider the climate and atmosphere as an extraneous variable, however fifty students were selected through purposive random sampling and the sample is for experimental group (n= 50) and

there age range was 15 to 22 years of age. All students of experimental group followed there prescribed yogic practices during the course of study and also instructed not to do any other yogic activities by themselves and during physical practices not to exert their body. Along with the super brain yoga we include the Gayatri maha mantra as a Vedic mantra chanting, as we know that it is widely used for the calmness of the brain waves for just 12 times /day and yoganidra is introduces in this package as a relaxation technique for the relaxation of body after the heavy practices of super brain yoga for just 5min/day.

Statistical analysis:

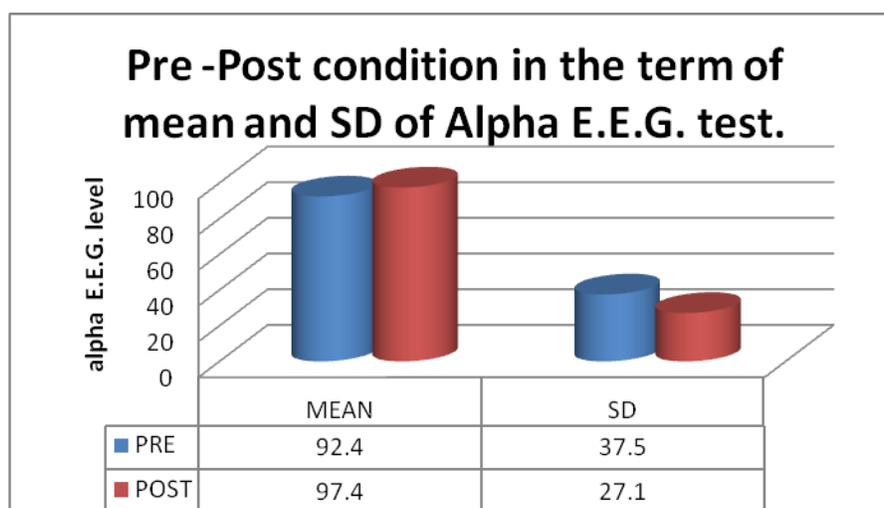
Obtained data were tabulated and analyzed. The initial values on 0th day of parameter were compared with the final values obtained on 30th day's measurement. Paired t- test was used for the statistical analysis with the help of SPSS ver. 23.

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 pre	92.4740	50	37.52160	5.30636
post	97.4240	50	27.14535	3.83893

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 pre & post	50	.957	.001



Result:

The mean & standard error of mean ($M \pm S_{Ed}$) of pre test and post test on level of Alpha E.E.G. of the experimental group were consecutively found to be 92.47 ± 5.03 and 97.42 ± 3.83 . The correlation (r) .95 and pre SD 37.52 and post SD= 27.14 as well. Obtained t-value is 2.50 which are

statistically significant at 0.01 level of confidence.

On the basis of obtained result it can be concluded that yogic intervention along with the practice of super brain yoga techniques is significantly (at .01 levels) increases the level of alpha wave of the secondary level students in the experimental group.

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence				
				Lower	Upper			
Pair 1 pre - post	4.950	13.987	1.978	8.925	.974	2.50	49	.016

Conclusion:

On the basis of the findings of this study it can be concluded easily that this package can enhance the meditative state of mind which can further improve the overall performance of the secondary level students. In the Indian tradition, the elephant-headed deity Ganapati is worshipped as the remover of obstacles, bestower of knowledge and success. [19] Intrinsically, his blessings are sought before the commencement of any endeavor. Yogic squats with specific hand position (*Thoppukaranam*), i.e. super brain yoga. A physical act of worshipping the deity, are practiced throughout India. [20] The super brain yoga is well known in south India by the name of *Thoppukaranam and Ganeshasana in the northern region of India as well. So it's being clear that the super brain yoga is well known by the people of entire world by the different name and slightly changed techniques.*

According to a research by Cornell university of New York, mental health problems affect one in every five young people at any given time. Since to face all the problems such as: strain, tension, depression, anxiety and more our intellectual level adolescents are targeted first. So, for any type of mental as well as physical disorders yoga, along with asana, Super Brain Yogic technique and Surya Namaskara i.e. Sun Salutation proves it best of all. [21]

Physician James Gordon, clinical professor of psychiatry at the Georgetown University School of Medicine, teaches deep breathing to most of his patients. For example, it has helped adults reduce the suffering from advanced cancer and crippling arthritis, and aided young person's coping with attention deficit disorder. [25,26] "Slow, deep breathing is probably the single best anti-stress medicine we have," says Dr. Gordon. "When you bring air down into the lower portion of lungs, where oxygen exchange is most efficient, everything changes. Heart rate slows, blood pressure decreases, muscles relax, anxiety eases and the mind calms. Breathing this way

also gives people a sense of control over their body and their emotions that is extremely therapeutic. [22]

The positive effect of physical activity on attention has been reported in previous research. [23] Studies also indicate that coordinated exercise increases one's attention. The component of holding the earlobes seen only in the practice of super brain yoga may account for the significant improvement in alpha wave scores. Overall, the reduction in hyperactivity and increased present moment awareness may be cited as a possible mechanism for the improved performance. [27] Further, the role of stimulating acupressure points on earlobes may enhance attention performance.

While this study resulted in important findings, the results have to be considered in light of several limitations. Representation of males while females are not included in this study and small sample size does not allow for generalization of the findings to a realistic population. Moreover, neither psychological measurements nor the lasting effect of intervention was assessed. Furthermore, the study used a mix of novice and long-term yoga practitioners who were part of an ongoing residential yoga course. Therefore, it is unclear what effect the yoga practice had in influencing the participant's performance and psychological states.

Though super brain yoga [*Thoppukaranam, Ganeshasana*] is to be practiced throughout the world, there have been no formal research studies carried out to understand the effect of the practice to date. This is the first attempt to study the effect of the practice. Future studies could measure psychological parameters using other techniques to understand the mechanism and fallout period of the effects. It is also recommended to include comparison of unguided individual practice across various age groups with varying needs such as students in primary, secondary, or tertiary level educational institutes as well as those

with special needs, developmental and behavioral disorders.

The long term impact of the intervention remains to be studied.

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