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EFFECTIVENESS OF SUPER BRAIN YOGA ON SELECTIVE ATTENTION OF PHYSIOTHERAPY STUDENTS

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ABSTRACT

Title: Effectiveness of super brain yoga on selective attention of Physiotherapy students.

Background: Now a days attention of student has been reduced due to constant multitasking and use of electronic device. The objective of this study is to find out the effect of super brain yoga on selective attention of student.

Materials and Methods: An experimental study was carried out on students of Physiotherapy at Indian Academy of Fitness Training,Kankanady Mangalore, by assessing attention before practicing SBY and then students have to perform SBY for thirty days and attention was again assessed by D2 selective attention test on 19 students.

Result: The result of this study shows a significant increase in the selective attention of student after practicing SBY for one month. The p value is <0.05 so we can reject the null-hypothesis and can say that practicing SBY improves the selective attention of the students.

Conclusion: This study indicates that SBY improves the selective attention of the students. This would be very beneficial for the students as it could help them in academic performance and learning process.

Key words: Selective attention, super brain yoga.

INTRODUCTION

In the present time, the short term memory of children has become limited due to constant multiple tasking, excessive usage of phones and other electronic devices. Recent study has shown that this kind of multitasking reduce the efficiency and performance because the brain can only focus on one thing at a time [5,13,14] . Selective attention refers to the processes that allow an individual toselect and focus on particular input for further processing while simultaneously suppressing irrelevant or distracting information. The competing informationcan occur both externally, as in extraneous auditory or visual stimulation in the environment, or internally, as in distracting thoughts or habitual responses which get in the way of performing the task at hand[21].

Selective attention is a cognitive process in which a person attends to one or a few sensory inputs while ignoring the other ones. Selective attention can be linked to the manner by which a bottleneck restricts the flow rate of a fluid. The bottleneck doesn't allow the fluid to enter into the body of the bottle all at once; rather, it lets the fluid to enter in certain amounts depending on the flow rate, until all of it has entered the bottle's body. Selective attention is necessary for us to attend consciously to sensory stimuli in such a way that we will not experience sensory overload[22].

There is a recent surge of interest in the West for the practice of an ancient oriental Exercise, which has come to be known there as super brain yoga. It was first popularized by Master Choa as a form of regular exercise to boost overall physical and mental well-being [2, 10]

In India, this exercise constitutes a traditional form of worship of the elephant-headed deity Lord Ganapati, more commonly known by the Sanskrit term Thoppukaranam [2, 11]. Superbrain yoga practiced over several months has a positive impact on social behavior in Children with autism and attention deficit hyperactivity disorder [2,12] .Superbrain yoga is simple exercise which involve squeezing one's earlobe's with thumb and forefinger in particular position and squatting following a prescribed breathing technique facing a particular direction[6] .Superbrain yoga also help in enhancement of short term memory, selective attention, and academic performance in the school.[6]

Whereas, Super Brain Yoga is a technique which enhances alpha waves inthe brain and synchronization of left and right brain hemispheres (Sui, 2005). Increase in alpha waves in the brain indicates that the body has become relaxed and thus Super Brain Yoga is an effective tool to manage anxieties.[3]

Students having integrated brain are efficient in solving mathematical problems by using resources of both left and right hemisphere (Oliver, Erin Michelle, 2009). Thus practicing Super Brain Yoga everyday helps to alleviate mathematical anxiety and also increases scholastic performance of the students in Mathematics exam by

enhancing the integration of the brain[3]

The aim of this study is to assess the selective attention of the Physiotherapy students after practicing Super brain yoga.

METHODOLOGY

- **Study design:** Before and after without control experimental study
- **Study setting:** At Indian Academy of Fitness Training, Kankanady, Mangalore.
- **Study Duration:**4 Months
- **Sampling method:** Convenient sampling
- **Sample size:** 20
- **Inclusion & Exclusion criteria**

Inclusion criteria:

Gender: Female

Students of Final year Physiotherapy

Individuals who have given consent to participate in the study.

Exclusion criteria:

Students with musculoskeletal injury

Students reported with any psychological issues

- **Variables with operational definition**

➢ **Independent variables :**

▪ **Superbrain yoga**

There is a recent surge of interest in the West for the practice of an ancient oriental Exercise, which has come to be known there as super brain yoga. Super brain yoga is a simple exercise which involve squeezing one's earlobe's with thumb and forefinger in particular position and squatting following a prescribed breathing technique facing a particular direction[6]. .According to Sui while doing

Superbrain yoga the right earlobe is gently squeeze with the left thumb and theleft index finger and left earlobe with the right[6, 23].

➢ **Dependent variables :**

▪ **Selective attention**

Selective attention is the process of focusing on a particular object in the environment for a certain period of time. Attention is a limited resource, so selective attention allows us to tune out unimportant details and focus on what really matters[3].

DATA COLLECTION TOOL

D2 selective attention test

Pen

PROCEDURE

Step 1-Screening of participants was done based on inclusion and exclusion

Step 2-Eligile candidates (N=20) were selected

Step 3-Informed consent was taken

Step 4-Baseline D2 selective attention test was taken

Step 5-**D2 selective attention test**: D2 test sheet was given to the participants , they were instructed To Cancel or cross the d with the two dashes ,and they need to tcomplete each line in 20 sec, after 20sec they are instructed to change and they have to
move in to next line, there are 14 lines in total.

Step 6-Superbrain yoga was taught to them which was performed once in a day for 14repetitions.

Step 7-Candidate was asked to perform this for 30 days and mark it in calendar.

Step 8-One candidate dropped out of study

Step 9-Post D2 selective attention test was taken(N=19)

Step 10-Data were analyzed using SPSS software version 23

RESULT

	Mean	SD
Age (Years)	18.00	.00
BMI (kg/m^2)	20.50	4.20

Table 1: Demographic Data

	Minimum (No)	Maximum (No)	Mean (No)	SD (No)
Total character processed (TN)	146.0	282.0	206.05	35.02
TN-E	-23.0	261.0	104.31	71.40
Errors of Omission (O)	21.0	163.0	99.73	36.48
Errors of Commission(C)	.0	10.0	3.26	3.07
Error (E)	21.0	169.0	103.00	37.98
Percent ofError (% E)	.07	1.15	.54	.26
FluctuationRate (FR)	4.0	13.0	7.63	2.16

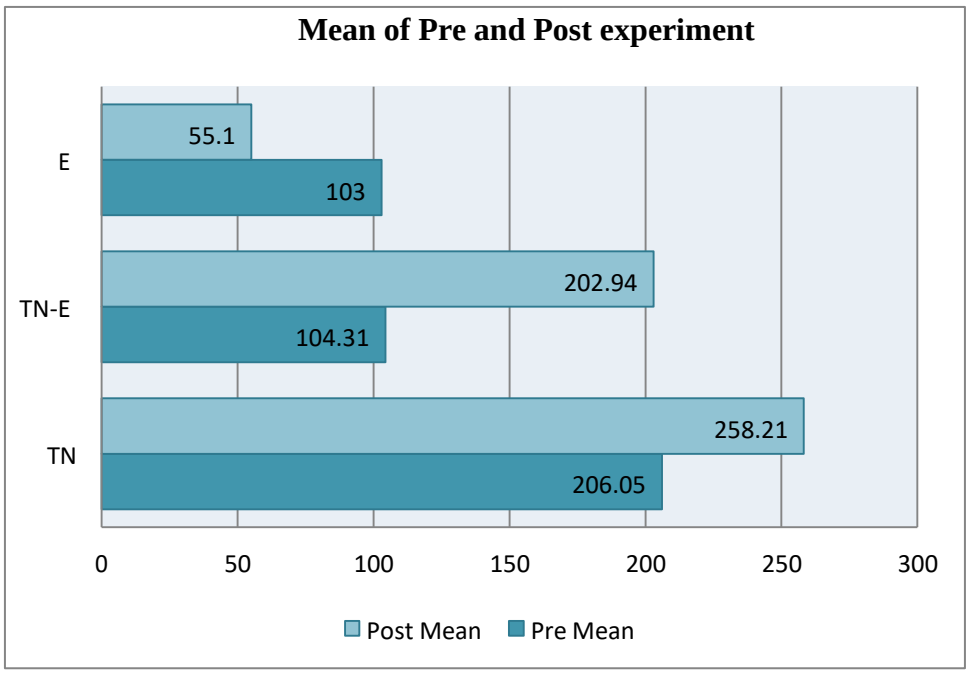
Table 2: Pre experiment Data

	Minimum (No)	Maximum (No)	Mean (No)	SD (No)
Total character processed (TN)	202.0	297.0	258.21	22.40
TN-E	117.0	263.0	202.94	43.69
Errors of Omission (O)	20.0	101.0	50.21	22.82
Errors of Commission (C)	0	18	5.00	4.83
Error (E)	21.0	109.0	55.10	23.65
Percent of Error (% E)	.073	.45	.22	.11
Fluctuation Rate (FR)	-6.0	12.0	6.52	4.08

Table 3: Post Experiment Data

	Variables	Mean (No)	SD (No)	P Value
1	**TN (PRE)**	206.05	35.02	.001
	TN (POST)	258.21	22.40	
2	**TN-E (PRE)**	104.31	71.40	.000
	TN-E (POST)	202.94	43.69	
3	**O (PRE)**	99.73	36.48	.001
	O (POST)	50.21	22.82	
4	**C(PRE)**	3.26	3.07	.016
	C (POST)	5.00	4.83	
5	**E (PRE)**	103.00	37.98	.001
	E (POST)	55.10	23.65	
6	**E% (PRE)**	.54	.26	.000
	E% (POST)	.22	.11	

Table 4: P value



Graph 1: Mean of Pre and post experiment Data

DISCUSSION

The purpose of this study is to find out the effectiveness of Super brain Yoga on selective attention of Physiotherapy students. The selective attention of students is assessed before practicing the SBY for 19 students by d2 selective attention test and attention is again assessed after practicing SBY for Thirty days.

Before the experiment mean and standard deviation for Total Number Processed (TN) was 205.95 ± 34.09 ,TN-E was 104.55 ± 69.50, Error of omission was (O) (99.25 ± 35.57), Error of commission was (C) 3.35 ± and Total error (E) was 102.6 ± 37.019. The mean and standard deviation was after Thirty days of SBY is TN 258.21 ± 22.406, TN-E is 202.94 ± 43.69, O is 50 ± 22.826, C is 5 ± 4.8304 and total error, E is 55.105 ± 23.65.

Paired T -Test was done to compare the mean of pre and post experiment data. The p value received was less than 0.05 for all TN,TN-E,O,C,E and E% respectively. Based on p value ,our study concluded that there is significant improvement in selective attention of students after Thirty days.

The results are in line with a study by Chandrasekaran et al. who found that Thoppukaranam, which is very similar to SBY has a significant enhancing effect on attentional control and psychological states compare to the control simple squat group[2, 1]

A study by Budde a indicate that coordinated exercise increase attention in human. SBY being practiced on a regular basis become coordinated exercise[6, 18]. SBY has a positive impact on both attention control working memory components of cognition[6, 19]. Research by Hillman has found that there is a positive effect of any physical activity in improving

attention and enhancement of cognitive performance and brain functions[6, 17].

Earlier studies of SBY has revealed that it is a very simple exercise performed within two minutes that can transform and help the student and even elder to remain active mentally and intellectually[6,20,5] SBY can play an efficient role in the enhancement of mental activities among college going adolescent[6,8]

The component of holding the earlobes seen only in the practice of SBY may account for the significant improvement in attention scores. Overall, the reduction in state anxiety and increased present moment awareness may be cited as a possible mechanism for the improved performance. Further, the role of stimulating acupuncture points on earlobes may enhance performance[1].

CONCLUSION

This study indicates that SBY improves the selective attention of the Physiotherapy students. This could be very beneficial for the students since it could help them in academic and learning process.

In the previous study, it is also proven that enhancement of energy in the participants after practice of SBY has resulted in the participants benefiting psychologically[5]. SBY provides the energy fuel that keeps the brain fit and functional and helps to counter common effects of aging, memmory loss, dementia and Alzheimer's disease[5, 23].

Overall, SBY is proven to be highly effective exercise which can be performed within two minutes in a day to improve selective attention. The result must be consider some study limitation such as, the fact that only female were recruited for the study and the sample size may not be sufficient to allow for the generalization two a larger population.

Practicing SBY can help to compensate the attention which has been reduced due to constant multitasking and use of electronic device in a short period of time. Schools and colleges can implement SBY to improve the academic performance of students.

DATA COLLECTION SHEET

Name: _____ Age: _____ DATE: _____

Gender: _____

Height: _____ Weight: _____ BMI: _____

	TN	TN-E	O	C	E	E%
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						

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SUPER BRAIN YOGA PROCEDURE

1. Remove any jewellery. Face in east direction.
2. Roll tongue in the inward direction and press it firmly towards the roof of mouth
3. Raise left arm in front of body. 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 finger 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 the right earlobe.
9. Inhale deeply through your nose and simultaneously squat down gently to a sitting Position, while keeping your arms as above. .If you can go down almost to Floor level, that is best[8].

D2 SELECTIVE ATTENTION TEST DESCRIPTION

The d2 attention test is a timed test of selective attention and mental concentration. The page Test consists of 14 lines, each comprising of 47 characters of letters "d" and "p" were one subject is Required to scan across each line to identify and cross out all "d" with two dashes. The subject is Allowed 20 seconds per line. All other combinations of letters and dashes are considered irrelevant in a series of tests-retests, in intervals of up to 40 months. d2 test indices, total number of items processed (TN), total performance (TN-E, where E is error), and concentration performance (CP) demonstrate satisfactory to good reliability (r > 70). Further, over a 5-h interval in adults, the test has shown good test-retest reliability.[1]