



## EFFECT OF YOGIC PRACTICES WITH MANTRA CHANTING ON CORTISOL AND STUDY SKILLS AMONG URBAN SCHOOL BOYS SUFFERING WITH DYSLEXIA

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### ABSTRACT

*The purpose of the random group experimental study was to find out the effect of Yogic Practices with mantra chanting on Cortisol and Study Skills among Urban School boys suffering with Dyslexia. For the purpose of the study, 30 Urban School boys suffering with Dyslexia were selected randomly using random sampling method from Chennai between the age group of 8 and 12 years and they were divided into two groups I, and II with 15 subjects each. It was hypothesized that there would be significant differences among the Urban School boys suffering with Dyslexia on selected hormonal and psychological variables such as Cortisol and Study Skills than the control group. Preliminary test was conducted for two Groups on Cortisol and Study Skills before the start of the training program. Group I subjects were given Yogic practices with mantra chanting for 60 minutes, six days a week for a total period of eight weeks. Group II (Control Group) were in active rest. After the experimental period, the two groups were retested again on the same selected dependent variables. Analysis of co-variance (ANCOVA) was used to find out the significant differences between the experimental group and the control group. The test of significance was fixed at 0.05 level of confidence. The results of the study proved that the Experimental Group showed significant differences on selected hormonal and psychological variables such as Cortisol (decreased) and Study Skills (improved) than the Control Group due to Yogic practices among Urban School boys suffering with Dyslexia. The hypothesis was accepted at 0.05 level of confidence. Hence it is concluded that Yogic practices are beneficial to the Urban School boys suffering with Dyslexia to control Cortisol and to promote Study skills.*

**Key words:** *Yogic Practices with Mantra Chanting, Cortisol, Study skills, Dyslexia, School boys.*

### I. INTRODUCTION

In school life, the ability to learn, to read and write is the most important stepping stone for the children. Literacy is the main benchmark in this competitive world. It is the door to various options that a child could choose in its forthcoming stages in life. The earliest and the foundation step in education is reading and reproducing that reading in the written form which is called as writing. Any deficit in reading is called as Dyslexia.

Dyslexia is the most common and carefully studied of the learning disabilities in school-age children. It is characterized by a marked impairment in the development of reading skills, and affects a large number of people (5-10%). Reading difficulties may also arise from poor vision, emotional problems, decreased hearing ability, and behavioral disorders, such as attention-deficit hyperactivity (ADHD). Although many areas of the brain are involved in reading, analysis of postmortem brain specimens by a variety of imaging techniques most consistently suggests that deficiency within a specific component of the language system - the phonologic module - in the temporo-parietal occipital brain region underlies dyslexia. It is a highly familial and heritable disorder with susceptibility loci on chromosomes 1, 2, 3, 6, 11, 13, 15 and 18. Recently, four candidate genes (KIAA 0319, DYX1C1, DCDC2 and ROBO1) are shown to be associated with dyslexia. Although some of these results are controversial because of the genetic heterogeneity of the disorder, the available evidence suggests that dyslexia could be due to the abnormal migration and maturation of neurons during early development. Interestingly, in spite of genetic heterogeneity, the pathology appears to involve common phonological coding deficits. The condition can be managed by a highly structured educational training exercise.

Dyslexia refers to any reading difficulty not associated with obvious problems like bad eyesight .dyslexia occur more often in boys and among left hand individuals. Common dyslexia include the inability to name letters, to read words and sentences, or to recognize words directly even though they can be sounded out. Each kind may reflect different deficits, such as in speech-sound processing or memory for words meanings. Since difficulties with reading, writing and math are recognizable problems during the school years, the signs and symptoms of dyslexia are most often diagnosed during that time. A learning disability cannot be cured or fixed; it is a lifelong challenge. However, with appropriate support and intervention, people with dyslexia can achieve success in school, at work, in relationships, and in the community.

#### Causes:

Dyslexia is a congenital condition and is determined at birth. There are various factors attributed to it, and the most common one is the genetic factor. It is a neurological conditions contributing to it and its basis are analyzed and explained by many groups of clinical Psychologists and neurologists. Yet another angle is given to this ailment by the factors such as injuries to the certain part of the brain, Bio- chemical disorder and certain deficiency. The causes for Dyslexia include architecture of the brain, Biological basis, Neurological, Parental, Natal, Post Natal, Genetical, Bio-chemical, Psychological and environmental factors.

#### Symptoms:

Dyslexia children have the following conditions

1. Difficulties with learning on how to decode at the word level, to spell, and to read accurately and fluently.
2. Difficulties to copy from the board or book.
3. Difficulty with right and left is common, and often dominance for either hand is not established.
4. Difficulty moving to the rhythm of the music.
5. Recalling sequence of things and more than one command at a time is difficult.
6. May become withdrawn and appear to be depressed.

#### Complications:

1. Low self Esteem
2. Behavioral Problems
3. Anxiety
4. Aggression
5. Withdrawal from parents, friends and teachers.

#### OBJECTIVES OF THE STUDY

- To find out whether there would be any significant difference on Cortisol due to yogic practices with mantra chanting among Urban School boys suffering with Dyslexia.
- To find out whether there would be any significant difference on Study Skills due to yogic practices with mantra chanting among Urban School boys suffering with Dyslexia.

#### STATEMENT OF THE PROBLEM

The purpose of the study was to find out the effect of yogic practices with mantra chanting on Cortisol and Study Skills among Urban School boys suffering with Dyslexia.

#### HYPOTHESIS

It was hypothesized that there would be significant differences on Cortisol and Study skills among Urban School boys suffering with Dyslexia due to yogic practices with mantra chanting than the control group.

#### DELIMITATIONS

- The study was delimited to the Urban School boys suffering with Dyslexia only
- The age group of the subjects was aged between eight and twelve years only.
- The study was delimited to Urban School boys suffering with Dyslexia residing in Chennai only.
- The study was delimited to the Independent variable Yogic practices with Mantra Chanting only.
- The study was delimited to the following dependent variables only.
  - Cortisol
  - Study skills

#### LIMITATIONS

- The factors like life style, body structure, and social activities were not taken in to consideration for this study.
- The factors like family heredity and motivational factors were not taken into consideration for this study.
- Certain factors like environmental and climatic conditions, economical background and also day to day work were not taken into consideration.
- The factors like diet, medication and personal habits were not taken in to consideration for the study.

## II. REVIEW OF RELATED LITERATURE

**Bethany Butzer et.al., (2014)** conducted a pilot study on the effects of a classroom-based yoga intervention on cortisol and perceived behavior in children. Students of second and third grade classroom underwent 10-week yoga intervention. Salivary cortisol responses were measured at 3 time points. Classroom teachers also noted down their perceptions of students' cognitive, social, and emotional skills. Second grade students showed significant decrease in the cortisol levels. Second and third graders showcased decreases in cortisol from before to after a cognitive task. The second-grade teacher saw a notable improvement in the students' behavior. The third-grade teacher saw very few improvement in the students' behavior. Results show that yogic practices for school children may be beneficial for stress management and behavior.

**Hamilton SS et.al., (2006)** Evaluation of Children with Reading Difficulties carried out her studies on children with reading difficulties. According to her reading difficulties are common and are associated with poor long-term academic achievement. Evaluation of a child's developmental, educational and family histories in conjunction with standardized screening tests an increase recognition of risk factors for reading difficulties. Validated, office-based, standardized screening tests and school-administered standardized achievements tests (e.g. California Achievement Tests, low a Test of Basic Skills, Metropolitan Achievement Tests, Stanford Achievement Test) can be used to assess school age children with reading difficulties. Reading difficulties in children often are caused by environmental and organic risk factors. However, many children have reading or learning disabilities and will have lifelong difficulties with reading despite adequate intervention. Child with substantial reading difficulties should receive a full educational assessment. The findings is good evidence that individualized instruction emphasizing increased phonologic awareness can have a favorable long-term effect on academic achievement.

## III. RESEARCH METHODOLOGY

To achieve the purpose of the random group experimental study 90 Urban School boys suffering with Dyslexia aged between eight and twelve years were invited, they were screened into 60 subjects and finally through random group sampling method 30 subjects were selected randomly. They divided into two groups. One group was given yogic practices with mantra chanting and the other was taken as control group. The dependent variables chosen are Cortisol and Study skills. Random group experimental design was used. The practice of yoga techniques like Asana, Pranayama, Meditation, Mudra, etc. helps to overcome any imbalances and creates harmony in the physical, mental, psychological and spiritual aspects of human personality. The experimental group underwent training period of Six days per week for the maximum of an hour in the morning for eight weeks and the control group did not undergo any training. The Analysis of co-variance (ANCOVA) was used as a statistical technique to find out the significant mean differences between the groups. The level of significance was fixed at 0.05%.

## IV. RESULTS AND DISCUSSIONS

The data pertaining to the variable collected from the two groups before and after the training period were statistically analyzed by using Analysis of Co-variance (ANCOVA) to determine the significant difference and the hypothesis was tested at 0.05 level of confidence.

These are shown in Tables below.

TABLE-I

### COMPUTATION OF ANALYSIS OF COVARIANCE OF TRAINING GROUPS AND CONTROL GROUP ON CORTISOL (mcg/dL)

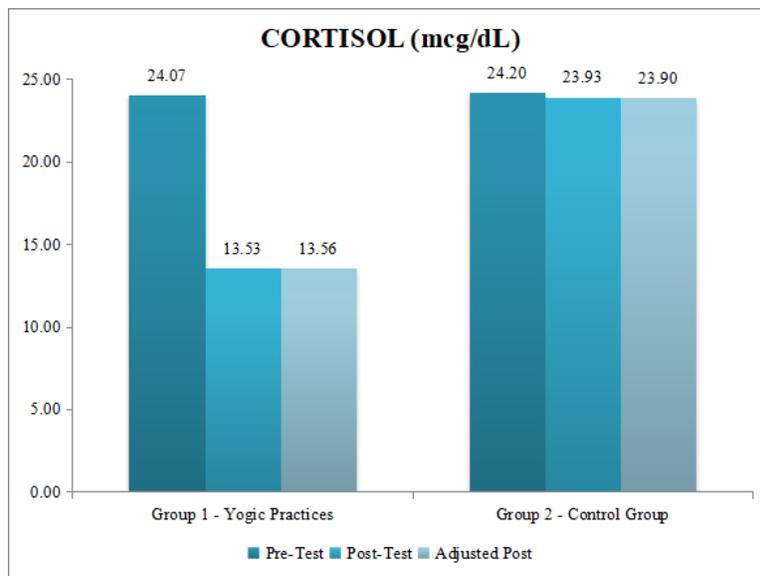
TEST	GROUP 1 YOGIC PRACTICES	GROUP 2 CONTROL GROUP	SOURCE OF VARIANCE	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SUM OF SQUARES	F- RATIO
Pre	24.07	24.2	Between	1	24.20	24.20	1.97
			With in	28	343.33	12.26	
Post	13.53	23.93	Between	1	811.20	811.20	103.87
			With in	28	218.67	7.81	
Adjusted Post mean	13.56	23.9	Between	1	801.67	801.67	143.55
			With in	27	150.78	5.58	

\*Significant at 0.05 level of confidence. (Table F-ratio at 0.05 level of confidence for 1 and 28 (df) =4.2, 1 and 27 (df) =4.21)

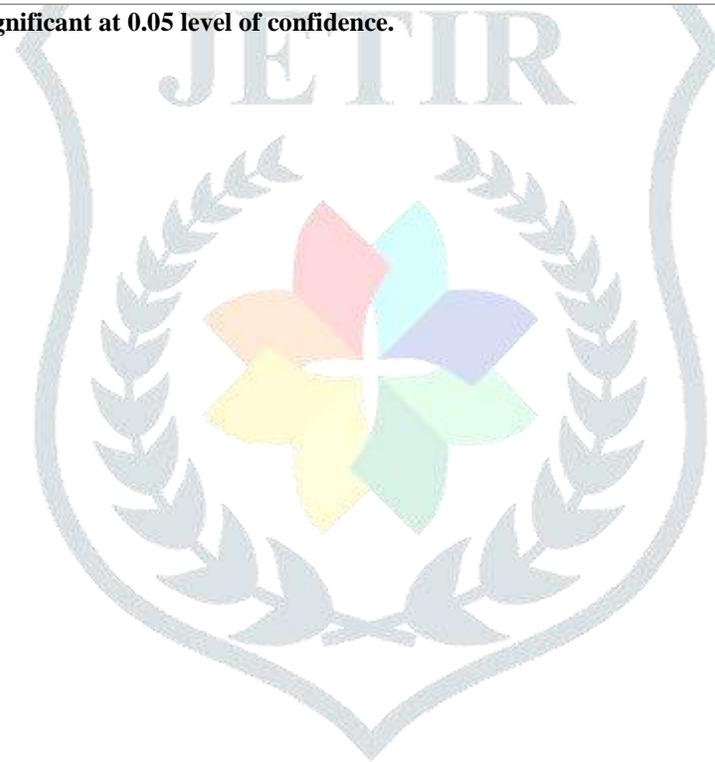
The obtained F value on pre test scores 1.97 was lesser than the recommended F value of 4.2 is significant at 0.05 level. This shows that there was no significant difference between the groups before the training period. There is significant difference between groups after the completion of training program, as obtained F value 103.87 was greater than the required F value of 4.20. This proved that the differences between the post-test means of the subject were significant. On account of adjusted pre-post-test mean scores, the obtained F value 143.55 was greater than the required F value of 4.21. This proved that there was a significant difference among the means due to eight weeks of yogic practices on Cortisol in line with the study conducted by **Bethany Butzer et.al., (2014)**. The ordered adjusted means on Cortisol were presented through bar diagram for better interpretation of the outcome of this study in Figure -1.

Figure-1

BAR DIAGRAM SHOWING THE MEAN DIFFERENCE AMONG EXPERIMENTAL AND CONTROL GROUPS ON CORTISOL (nmol/L)



\*Significant at 0.05 level of confidence.



**COMPUTATION OF ANALYSIS OF COVARIANCE OF TRAINING GROUPS AND CONTROL GROUP ON STUDY SKILLS (SCORES IN MARKS)**

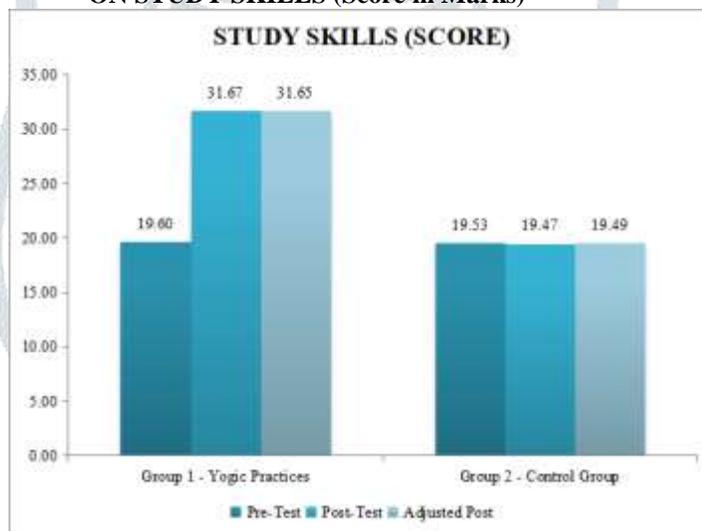
TEST	GROUP I YOGIC PRACTICES	GROUP 2 CONTROL GROUP	SOURCE OF VARIANCE	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SUM OF SQUARES	F RATIO
Pre	19.6	19.53	Between	1	19.53	19.53	1.62
			With in	28	337.33	12.05	
Post	31.67	19.47	Between	1	1116.30	1116.30	165.32
			With in	28	189.07	6.75	
Adjusted Post mean	31.65	19.49	Between	1	1109.32	1109.32	366.38
			With in	27	81.75	3.03	

\*Significant at 0.05 level of confidence. (Table F-ratio at 0.05 level of confidence for 1 and 28 (df)=4.2, 1 and 27 (df) =4.21)

The obtained F value on pre test scores 1.62 was lesser than the recommended F value of 4.2 to be significant at 0.05 level. This shows that there was no significant difference between the groups before the training period. There is significant difference between groups after the completion of training program, as obtained F value 165.32 was greater than the required F value of 4.20. This proved that the differences between the post-test means of the subjects were significant. On account of adjusted pre-post-test mean scores, the obtained F value 366.38 was greater than the required F value of 4.21. This proved that there was a significant difference among the means due to eight weeks of yogic practices with mantra chanting on Study Skills in line with the study conducted by **Hamilton SS et.al., (2006)**. The ordered adjusted means on Study Skills were presented through bar diagram for better interpretation of the outcome of this study in Figure-2.

**Figure-2**

**BAR DIAGRAM SHOWING THE MEAN DIFFERENCE AMONG EXPERIMENTAL AND CONTROL GROUPS ON STUDY SKILLS (Score in Marks)**



\*Significant at 0.05 level of confidence.

The outcome of the study exhibits that Cortisol decreased and Study Skills improved significantly due to Yogic Practices for Group-I than Group II. Hence the hypothesis was accepted at 0.05 level of confidence. The above findings were also substantiated by the observations made by the expert **Bethany Butzer et.al., (2014)** and **Hamilton SS et.al., (2006)**.

### DISCUSSION ON HYPOTHESIS

It was hypothesized that there would be significant differences on selected Hormonal variable such as cortisol and Psychological variable such as study skills due to Yogic Practices with mantra chanting among Experimental Group than the control group. The results proved that there were significant differences on Cortisol (Decreased) and Study skills (Improved) due to Yogic Practices with mantra chanting than the control group among Urban School boys suffering with Dyslexia at 0.05 level of significance.

### CONCLUSION

It is concluded that Yogic Practices with mantra chanting decreased Cortisol and improved Study Skills among Urban School Boys suffering with Dyslexia. Hence, Yogic practices with mantra chanting are good for Urban School boys suffering with Dyslexia to maintain healthy Cortisol and to improve Study skills.

## V. REFERENCES

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