

# Simplified Kundalini Yoga Improves Motor Skills and Behavioural in Children with Attention Deficit Hyperactive Disorder (ADHD)

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**Abstract:** *Reviewing the scenario in our country needs professional's attention for Attention Deficit Hyperactive Disorder population. The prevalence rate of ADHD was found to be 3.66% among school-going children in a part of rural India. Recent investigations assessment the worldwide prevalence of ADHD in children to be 7%, which is a substantial development compared to a decade ago. The aim of the present study was to observe the potential benefit of enriching Motor skills with Simplified Kundalini Yoga and the effect of Simplified Kundalini Yoga Training (SKYT) on the severity of Hyperactive in children with High function of Attention Deficit. Thirty children aged 11 to 15 years were randomly allotted either Yoga training or Control group. The children in the SKYT group received the 20 weeks (100 sessions) Simplified Kundalini Yoga Training. Parents or caregivers of children completed ADHD evolution checklist (AEC) at baseline and the completion of the intervention. The result of the analysis showed that there were significant differences between the two groups with regards to all AEC sub-scores except AEC-I (Motor Skills (MS) / ADL (Activities of Daily Living) / Domestic-Social (DS) / Violent and Destructive Behaviour (VDB). This study provides support for the implementation of a SKY Yoga Training and identifies specific procedural enhances to reduce the severity of symptoms in children with Attention Deficit Hyperactive Disorder. ADHD is one of the most common childhood chronic & neurodevelopmental disorders. ADHD contains a combination of persistent problems, such as difficulty sustaining attention, hyperactivity and impulsive behaviour. SKY Yoga can aid to create a healthy mind body connection, improving their coordination, behaviour, moods, physical activity & social skills.*

**Keywords:** SKY Yoga, ADHD, Motor Skills, Behavioural problems, Impulsive & Bipolar disorder

## 1. Introduction

All the wonders of current science will not bring joy, peace of mind, well-being or a long lifespan. Although wonders have been achieved in our external environment – space travel, computers, etc. our internal aspect has been neglected. Thousands of years ago the ancient yogis turned their minds inwards and discovered the true nature. This permitted them to work out a system of body and breathing exercises which results in strength, transformation and peace of mind. The human body instinct has basic rhythms that control its autonomic functions. These functions purposely are not accessible to the conscious mind. In India where the practices of yoga have been studied and pursued for over 5,000 years, basic techniques to bring the unconscious functions of the body under conscious control have been developed. Upanishads, a repository of Indian lineage, contains several yoga applications which assure us healthy ageing.

A neurological condition known as attention deficit hyperactivity disorder affects the areas of the brain that assist us in organizing, concentrating on, and carrying out tasks. ADHD is a developmental impairment of the brain's executive functions. [William Dodson, 2019], People with ADHD have trouble with impulse-control, focusing, and organization. Many symptoms of ADHD can be typical childhood behaviours, so it can be difficult to know if a child is displaying ADHD symptoms. Since they frequently exhibit hyperactivity, impulsivity, and

impatience as well as inappropriate interruptions, children with hyperactive-impulsive ADHD may first be perceived as disruptive or misbehaving. In elementary school, the majority of kids with ADHD are diagnosed. A few key findings are provided by neuroscience, brain imaging, and clinical research: It is not a behaviour disorder to have ADHD. ADHD is not a mental illness. ADHD is not a specific learning disability. Instead, ADHD is a developmental disorder of the brain's self-regulation system. ADHD can be diagnosed in both adults and children.

Children with ADHD have very different sensory experiences from other people, and these responses often cause their bodies to get stuck in fight, flight, or freeze modes that divert blood from the digestive organs to the skeletal muscles. Anxiety can be easily triggered by this activity since it causes disturbed digestion, an elevated heart rate, and shallower breathing. [Hannah Brandstaetter, 2012] ADHD educators often highlight the importance of Yogic practices.

### Characteristics of ADHD

- **Difficulty in language and communication:** Restricted generally to expression of wants, needs and the use of language to express thoughts, emotions and ideas if at all, is very rudimentary.
- **Short attention span:** Tends to get distracted very fast, poor concentration when dealing with challenging tasks.

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- **Lack of concentration:** General scholastic difficulties are experienced because of poor rate of learning, poor grasp of the matter thought, slow reactions to environmental demands, poor problem-solving skills.
- **Inability to understand quickly:** Difficulties experienced in thinking and generalization and imaging. The affects concept formation, a conceptual understanding, difficult to understand nutrition (food he understands), latitudes, longitudes etc.
- **Poor memory and Motor integration:** Difficulties in retaining information for a sufficient length of time. This is related to poor information processing. Poor problem-solving ability. Clumsy an in-coordinated motor skill. Hence, they have problems in developing adaptive skills. Example Brushing, Dressing, Eating etc.
- **Behavioural Disturbances:** Unintentional Injuries, Feelings of parental incompetence, Aggressive tendencies, Academic impairment, Difficulties in social interaction often tolerated by peers, Lower self-esteem and Anti-social behaviour.

## 2. Holistic Effects of Yoga

The beauty of Yoga is that it is a concept for everyone. It is a combination of physical and mental disciplines which make the body stronger and healthier and the mind calmer and controlled, aiding towards self-realisation. [Sunil Kumar Yadav, 2015] It is about getting to know ourself. Integrating the many aspects of self and putting one in control of mind; bringing about health awareness and a change of attitude towards oneself and the world around us. The science of Simplified Kundalini yoga has a special advantage in that it can delay the ageing process. Disease, old age, and death are the three major problems which have been inviting the attention of medical scientists for centuries and in a different way, that of philosophers as well. Vethathiri Maharishi founded the Simplified Kundalini Yoga for the benefit of humanity. This aim was to bring about peace around the world. A good healthy body awakens the good soul within us. This helps to maintain peace in and around each individual which finally helps to achieve, the goal of SKY trust. For this Vethathiri Maharishi introduced Kaya Kalpa technique to the Humanity. Kaya Kalpa Yoga is a rejuvenating technique which was discovered by our Sidhars, and lost during due course of time.

Traditionally, the goal of Yoga Asana practice was not to build muscle or achieve perfect balance. Physical practice was always intended to prepare the body for meditation. Most casual yoga students today have other goals in mind. They want to de-stress, gain strength, improve flexibility, and simply unwind. [Dr Sheeba Joseph] All of these are excellent reasons to practice yoga. Yoga is a systematic path to enlightenment and self-realization, yoga means union between the individual self and universal consciousness, and the goal of yoga is to achieve perfect control over the mind's modifications. As students become more involved in the physical practice, they may be called to try their hand at a meditation practice as well, and discover that this is where real change begins. Yoga benefits provide both immediate

gratification and long-term transformation. Yoga has the ability to quickly change our physical and mental capacity while also preparing the mind and body for long-term health.

Pranayama have established that the practices reduce stress and hypertension, normalize blood pressure (both high and low), alleviate heart disease, increase vitality and lung capacity, and balance the relationship between the brain hemispheres. It has also been found that pranayama results in a synchronous flow of alpha, delta and theta waves, which harmonizes brain and heart activity. Pranayama practices combined with asanas and/or relaxation practices have produced significant, and in some cases remarkable, improvements in chronic diseases. Heart disease and hypertension have received the most attention. There have also been significant results for chronic lung disease. [Naveen KV, 1997] The stress reduction benefits of slow, deep, diaphragmatic breathing suggest that pranayama practices are a valuable component of integrated treatment programs. Nadi Shodhana Pranayama breathing practices and a physical relaxation procedure produced lower state and trait anxiety than either the breathing or relaxation treatments alone.

Surya Namaskar is globally acclaimed as the best body exercise for all the persons of all the age groups. [L. Prasanna Venkatesha, et. al. 2021] , It is a real training to our body soul and mind to maintain health and happiness every day. Surya Namaskar is a personal Saadhana, it is a Nitya Karma- a compulsory routine for everybody, every day. It is a great celestial contribution of the Hindu Vedic Civilization to the world to enhance health and happiness of every human being. The body postures in Surya Namaskar, if done with the awareness of breathing, give the desired results. It gives ease to perform the postures. The series of body postures tuned with breathing become rhythmic and graceful without any stops or jerks or halts. It puts the cells in the muscles on the active mode to generate energy and power.

### Objective of the Study:

The impact of Surya Namaskar with selected SKY Yoga Exercises like Neuro Muscular Breathing Exercise, Kapalabhati & Makarashanam practices improves Motor Skills and reduce the behavioural problems of Difficulty in language and communication, Short attention span, Lack of concentration, Inability to understand quickly, Poor memory and Motor integration and Behavioural Disturbances in Attention Deficit Hyperactive Disorder children.

### Statement of the Problem:

The purpose of the study was to find out the impact of Surya Namaskar with selected SKY Yoga Exercises improves Motor Skills and reduce the behavioural problems in Attention Deficit Hyperactive Disorder children.

**Hypothesis**

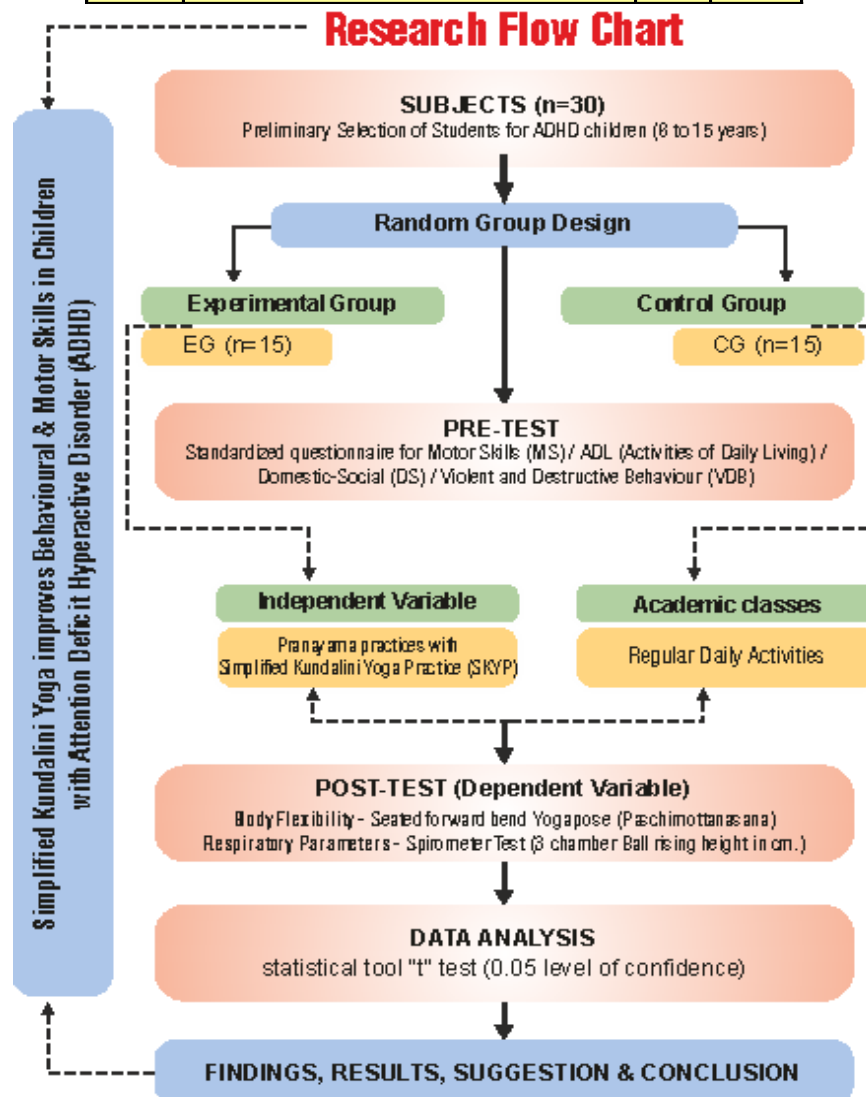
It is hypothesized that there would be significant improvement in selected Psychological and physiological variables with respiratory parameters for the Special Children.

**Selection of the subjects:**

To achieve the purpose of the study 30 ADHD children active subjects were randomly selected from Govt. High

School, Edayarpalayam, Coimbatore. To achieve the purpose of the present study, thirty special children from Coimbatore district at school level were selected as subjects at random and their ages ranged from 11 to 15 years. The selected subjects divided into two groups (N=30), one group underwent 5 months (100 sessions) of Surya Namaskar with Simplified Physical Exercises training and another group was Control Group.

Training Programme Schedule			
Sl.No.	Name of Practices	duration	
1	Prayer Song	5	mins.
2	Pranayama practices	10	mins.
3	Simple Meditation	5	mins.
4	Chant & Blessings	5	mins.
5	Surya Namaskaram	20	mins.
6	Neuro Muscular Breathing	10	mins.
7	SKY Kapalapathy Exercise	5	mins.
8	SKY Makarasanam Part 1 & 2	20	mins.
9	Relaxation	10	mins.
Total		90	mins.



**Selection of Variables:**

To find out the impact of training the researcher selected the following dependant Variables for the Present Study.

Respiratory Parameters: Breath holding time

Muscular Strength Endurance: Seated forward bend Yoga pose (Paschimottanasana)

**Statistical Analysis:**

The collected data on the selected dependent variables were statistically analysed by paired “t” test to find out the significant improvement between pre and post-tests of training and control groups at the 0.05 level of confidence.

**3. Analysis and Results of the Study****Table 1:** Paired “t” test (Pre & Post) for Experimental Group of selected Variables

**Null Hypothesis:** There is no statistically difference in pre and post-test of Experimental group on selected variables.

Experimental Group	Variables	Pre Test		Post Test		t-Value	p Value	S/NS
		Mean	S.D	Mean	S.D			
Psychological Variables	Motor Skills (MS)	131.3	12.6	155.9	19.0	-8.992	0.000	S
	Activities of Daily Living (ADL)	54.6	3.0	75.4	2.0	-16.999	0.000	S
	Domestic-Social (DS)	73.5	5.9	95.9	8.6	-11.256	0.000	S
	Violent& Distractive Behavior (VDB)	13.2	3.0	6.6	2.9	14.164	0.000	S

Control Group	Variables	Pre Test		Post Test		t-Value	p Value	S/NS
		Mean	S.D	Mean	S.D			
Physiological Variables	Breath Holding Time	12.4	6.2	20.6	6.1	-17.018	0.000	S
	Muscular Strength Endurance	5.9	1.6	1.8	1.2	11.208	0.000	S

(Source: Primary Data)

The relevant results for the paired t-test of experimental group Psychological Variables that row observe the t statistic values, t = -8.992 (Motor Skills), -16.999 (Activities of Daily Living), -11.256 (Domestic-Social) and 14.164 (Violent & Distractive Behaviour) respectively. The p values = 0.000;. The null hypothesis

is rejected, since  $p < 0.05$  (in fact  $p = 0.000$ ). The null hypothesis is rejected, since  $p < 0.05$  (in fact  $p = 0.000$ ). This confirms that, although the difference in pre test and post test is statistically significant. **Thus, we concluded that there is a significant improvement by the ADHD children after practicing the SKY Yoga.**

**Table 2:** Paired “t” test (Pre & Post) for Control Group of selected Variables

**Null Hypothesis:** There is no statistically difference in pre and post-test of Control group selected Variables.

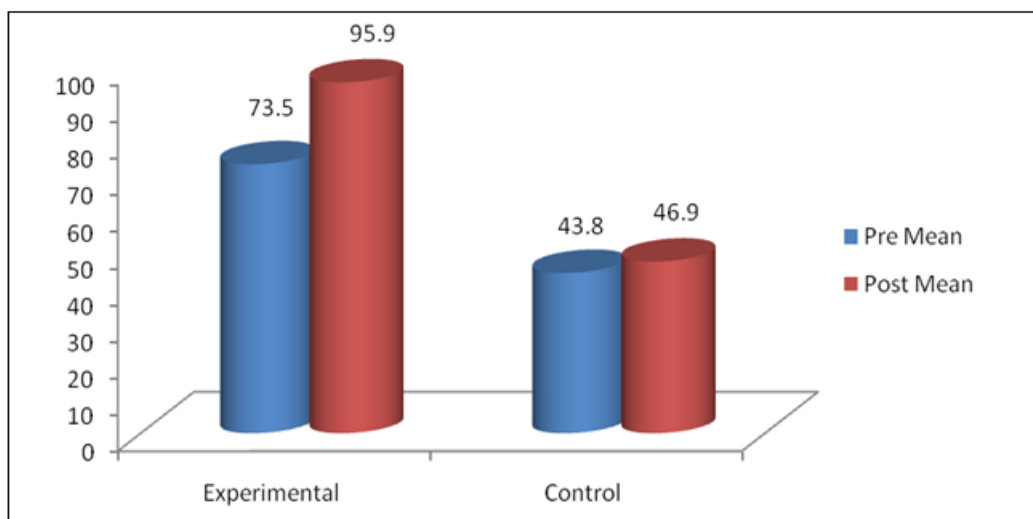
Control Group	Variables	Pre Test		Post Test		t-Value	p Value	S/NS
		Mean	S.D	Mean	S.D			
Psychological Variables	Motor Skills (MS)	80.7	19.6	87.0	21.4	-11.185	0.000	NS
	Activities of Daily Living (ADL)	39.1	19.7	41.8	18.2	-3.508	0.003	NS
	Domestic-Social (DS)	43.8	18.6	46.9	19.6	-3.826	0.002	NS
	Violent& Distractive Behavior (VDB)	22.4	12.7	19.73	13.56	4.781	0.000	NS

Control Group	Variables	Pre Test		Post Test		t-Value	p Value	S/NS
		Mean	S.D	Mean	S.D			
Physiological Variables	Breath Holding Time	3.6	1.7	4.3	1.9	-3.862	0.002	NS
	Muscular Strength Endurance	10.1	4.4	9.2	4.5	5.773	0	NS

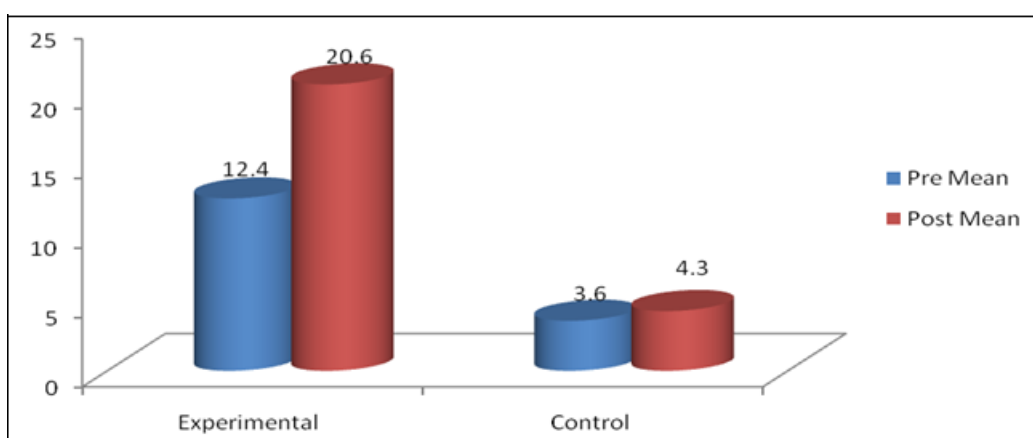
(Source: Primary Data)

The relevant results for the paired t-test of Control group Psychological Variables that row observe the t statistic values, t = -11.185 (Motor Skills), -3.508 (Activities of Daily Living), -3.826 (Domestic-Social) and 4.781 (Violent & Distractive Behaviour) respectively. The p values = 0.000, 0.003, 0.002 and 0.000; The null

hypothesis is rejected, since  $p < 0$ . This confirms that, although the difference in pre test and post test is statistically not significant. **The above results proved that the Control Group do not have significant improvement because the children didn't practice the SKY Yoga.**



**Chart 1:** Pre and post mean values of experimental & control group on Body Flexibility



**Chart 2:** Pre and post mean values of experimental & control group on Respiratory Parameters

(Source: Primary Data) (Need Change the Values Repetation)

#### 4. Findings of the study

Based on the results of the study the following findings were drawn:

- 1) Within the limitation and on the basis of the findings of the study, it was very clear that 5 months of Surya Namaskar with selected SKY Yoga Exercises like Neuro Muscular Breathing Exercise, Kapalabhati & Makarashanam practices improves Motor Skills and reduce the behavioural problems in Attention Deficit Hyperactive Disorder children.
- 2) It was also concluded that the control group did not show any significant difference in selected psychological variables of Motor Skills (MS), Activities of Daily Living (ADL), Domestic-Social (DS), Violent & Distractive Behaviour (VDB) and Physiological variables of Breath Holding Time and Muscular Strength Endurance of behavioural problems in Attention Deficit Hyperactive Disorder children.
- 3) Further, it was inferred that Surya Namaskar practices with selected Simplified Physical Exercises programme appears to be a safe and practical intervention tool for improving Psychological and physiological variables of Attention Deficit Hyperactive Disorder children. Special attention in an institutional setting. This study promotes the

importance of the Simplified Kundalini Yoga practices among the ADHD Children.

- 4) From the Pre & Post “t-Test” paired Correlations of Experimental and Control groups, we inferred that SKY Yoga Practices will decrease the behavioural problems of ADHD Children and improve their Motor Skills. And the Muscular Strength Endurance was improved to the ADHD children.

#### 5. Suggestion

Depression is quite common in ADHD people who have a lot of theta brain waves, so it's important to be very cautious about exhibiting symptoms. [Kenneth Blum, 2008] The best way to treat ADHD is a combination of behaviour therapy and medication. Particularly training for parents, is advised as a first course of treatment before trying medication. What works best will vary from child to child and family to family. Good treatment plans will include close monitoring, follow-ups, and making changes, if needed, along the way.

All children need to be healthy, but children with ADHD may need to be especially careful about their health. A healthy lifestyle can help the child to manage the symptoms of ADHD in addition to behavioural therapy and medication.

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**The following healthy habits could be beneficial:**

- Forming wholesome eating practices, such as consuming an abundance of fruits, vegetables, whole grains, and lean protein sources.
- Limiting the amount of time, they spend using screens every day, such as TVs, computers, phones, and other electronics.
- Getting the recommended amount of sleep each night based and engaging in daily physical activities in accordance with their age.

**6. Conclusion**

Teaching yoga to the children is that only beneficial to their physical development, it is also crucial for their emotional development and overall wellbeing. Based on the discussion of the results, increased body flexibility can improve physical fitness, muscular strength, endurance & agility. The neuromuscular breathing exercise shows the ability of central and peripheral nervous system in operation of breath holding and controlling. Deep breathing can be very beneficial for students who struggle with emotional regulations. [Xiao Ma, et al, 2017] SKY Neuro Muscular Breathing exercise can also help the children with asthma or other breathing difficulties.

“The parent's reaction (Vinai Thodar) is the child. For a good child, parents should maintain the body, life Force and Karma. During the time of the mother's pregnancy, the family should look after her mind to be cheerful. The child's knowledge of the knowledge of such knowledge, the intellectual interests of the family and the society got a great gift. Yoga is a well- balanced and perfect process for success and Peace in Life” – Vethathiri Maharishi

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