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Effect Of Surya Namaskar On Cognitive Psycho Functions In School Children

Submitted by Hitendra Singh Naruka (Research Scholar)

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Dr. Shatrughan Singh

Jagadguru Ramanandacharya Rajasthan Sanskrit University, Village Madau, Post Bhankrota, Jaipur

Abstract

This study explores the influence of Surya Namaskar, a classical yogic practice, on the cognitive and psycho-social functions of senior secondary school students aged 15–18. Surya Namaskar, a sequence of twelve physical postures synchronized with breath, is traditionally known to improve both physiological and psychological well-being. In this study, an 8-week intervention was conducted involving daily practice sessions among selected students. Post-intervention evaluations showed substantial improvements in memory, attention span, emotional balance, and behavioral adjustment. These findings reinforce the potential of Surya Namaskar as a valuable component of school wellness programs, contributing to the holistic development of adolescents.

Introduction

Surya namaskara is a well known and vital technique within the yogic repertoire. Its versatility and application make it one of the most useful methods to induce a healthy, vigorous, active life and at the same time prepare for spiritual awakening and the resultant expansion of awareness. In recent years more and more people have moved away from mere ritual and are turning to yoga as a method for exploring and improving their inner lives. Though the need for techniques to enhance physical, mental and spiritual evolution has been recognized, the fast pace of modern living makes it difficult for even the most determined individual to implement yoga practice. And it is practice which is the most important and fundamental issue in terms of our betterment. It is with these thoughts in mind that this book has been written, for surya namaskara is almost a complete sadhana in itself, containing asana, pranayama and meditational techniques within the main structure of the practice. For most of us, today's lifestyle accentuates mental tensions, worries and seemingly insoluble problems at many levels, such as personal

interrelationships, economics and even geopolitical threats of war and destruction. At the same time the amount of sedentary or semi-sedentary work is increasing due to the increase in technology and labour-saving devices. This has led to a situation in which mental and physical ill health is increasing. Without an antidote there seems to be little hope. Surya namaskara is composed of the three elements of form, energy and rhythm. The twelve postures create the physical matrix around which the form of the practice is woven. These postures generate prana, the subtle energy, which activates the psychic body. Their performance in a steady, rhythmic sequence reflects the rhythms of the universe, such as the twenty-four hours of the day, the twelve zodiac phases of the year and the biorhythms of our own body. The rhythmic superimposition of this form and energy on our present body mind complex is the transforming force which generates the nucleus of a fuller and more active life and a greater appreciation of the richness of the world we live in. The origins of surya namaskara date far back to the earliest epochs of history, when human beings first became aware of a spiritual power within themselves that is also reflected in the material universe. This awareness is the foundation of yoga. Surya namaskara, meaning 'salutation to the sun', can be seen as a form of worship of the sun, and all that it represents on the micro and macrocosmic levels. In yogic terms this indicates that surya namaskara awakens the solar aspects of an individual's nature and releases this vital energy for the development of higher awareness. This can be realized by the practice of surya namaskara each morning, as well as being a fine way to pay tribute to the source of creation and life, thereby carrying on the solar tradition.

Adolescence, particularly between the ages of 15 and 18, is a critical phase marked by rapid physical, emotional, and cognitive changes. During this time, students are often burdened with academic expectations, peer pressure, and emotional fluctuations, which can negatively impact their concentration, memory, and psychological health.

Modern educational systems emphasize academic achievements but often overlook the mental and emotional health of students. To address this gap, there is growing interest in incorporating yoga-based interventions within schools.

Surya Namaskar (Sun Salutation) is a comprehensive yogic practice that integrates physical movement, controlled breathing, and mindfulness. It is believed to stimulate the nervous system, improve oxygen supply to the brain, and regulate the hormonal balance, thereby enhancing both mental and emotional functions. This research aims to assess the impact of Surya Namaskar on cognitive and psycho-social functions among school children.

Previous research supports the beneficial effects of yogic practices on cognitive and emotional health and Swami Satyananda Saraswati (2004) emphasized that Surya Namaskar harmonizes body, breath, and mind, which enhances mental clarity and self-control.

A study by Telles et al. (1993) found that yoga practices improved reaction time and memory among school-aged children.

Kauts and Sharma (2009) reported that students practicing yoga regularly demonstrated reduced academic stress and improved performance.

These findings collectively point to the potential of Surya Namaskar as a multi-dimensional tool for improving brain function and emotional balance in adolescents.

Methodology

Objectives:

1. To examine the effects of Surya Namaskar on cognitive functions such as attention, memory, and executive functioning.
2. To evaluate changes in emotional control, behavior, and interpersonal relationships as indicators of psycho-social functioning.

Hypothesis:

Regular and structured practice of Surya Namaskar leads to significant improvement in cognitive and psycho-social functions in school students aged 15–18.

Participants:

Sample Size: 60 students (30 male, 30 female), aged between 15 and 18 years.

Groups: Randomly divided into two groups:

1. **Experimental Group** (n=30): Practiced Surya Namaskar.
2. **Control Group** (n=30): Continued regular school schedule without yoga.

Inclusion Criteria:

- * Healthy adolescents without any diagnosed cognitive or psychiatric disorders.
- * Students not involved in any structured yoga program previously.

Exclusion Criteria:

1. Students with chronic illnesses or psychological conditions.
2. Students already practicing yoga regularly.

Intervention Design:

- * Duration: 8 weeks
- * Frequency: 5 sessions per week
- * Session Length: 30 minutes (10 rounds of Surya Namaskar per session)
- * Environment: School yoga room or open playground, supervised by trained yoga instructors

Assessment Tools:

1. Cognitive Assessments:

- Digit Span Test (working memory)
- Trail Making Test (visual attention and task switching)
- Stroop Color-Word Test (executive control)

2. Psycho-Social Assessments:

- Strengths and Difficulties Questionnaire (SDQ) for self-assessment
- Teacher Rating Scale for classroom behavior observation

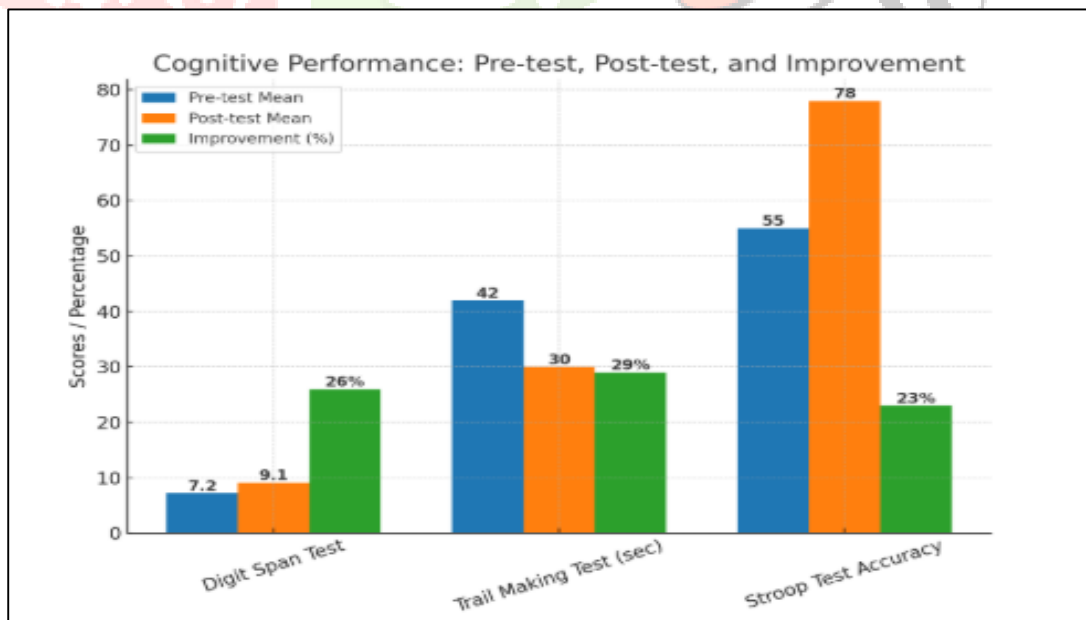
Data Collection:

Data were collected before the intervention (pre-test) and after 8 weeks (post-test). Statistical analysis was conducted using paired t-tests and ANOVA to evaluate differences.

Results

Cognitive Performance:

Test	Pre-test Mean	Post-test Mean	Improvement
Digit Span Test	7.2	9.1	26%
Trail Making Test (sec)	42 sec	30 sec	29%
Stroop Test Accuracy	55%	78%	23%



The experimental group showed statistically significant improvements in working memory, attention span, and executive function. The control group showed minimal or no change.

Psycho-Social Functioning:**SDQ Scores (Experimental Group):**

- Emotional symptoms decreased by 31%
- problems reduced by 26%
- Hyperactivity reduced by 24%
- Prosocial behavior increased by 18%

Teacher Observations:

- Better classroom focus
- Improved self-discipline
- Reduced instances of aggression or restlessness
- Increased participation in group activities

These results suggest that Surya Namaskar contributes to both mental clarity & emotional well-being among students.

Discussion

The present findings confirm that regular practice of Surya Namaskar can lead to significant improvements in both cognitive and psycho-social domains in adolescents. The rhythmic flow of movement synchronized with breath in Surya Namaskar activates the autonomic nervous system and helps maintain neurochemical balance.

By increasing oxygenation to the brain and reducing cortisol levels, the practice enhances memory and attention while reducing emotional reactivity. The meditative component of Surya Namaskar further supports mindfulness and concentration.

Teachers also noticed behavioral changes, suggesting that the benefits of this practice extend beyond individual cognition to interpersonal and academic functioning. These results align with earlier studies that emphasize the neuropsychological benefits of yoga in adolescent population's.

Conclusion

This study concludes that Surya Namaskar is a scientifically beneficial practice for enhancing the mental and emotional well-being of students aged 15–18. Regular practice improves attention, memory, emotional regulation, and behavior, which are essential for academic and social success.

Given its accessibility, time efficiency, and positive outcomes, Surya Namaskar can be effectively integrated into school routines. It not only supports academic performance but also contributes to shaping mentally alert, emotionally stable, and socially responsible individuals.

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