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## Effect of Ashtanga Vinyasa Surya Namaskar practices on strength and balance among adolescence boys

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### Abstract

Today adolescence is in growing age they have lack of physical and mental fitness such as speed, strength, flexibility, balance, stress, anxiety, depression etc. The Ashtanga Vinyasa Surya Namaskar practices (AVSN) is the most popular contemporary style of yoga it helps the adolescence to improve their physical and mental fitness variables. The purpose of the study was to find out the “effect of Ashtanga Vinyasa Surya Namaskar A&B (AVSN) practices on strength and balance among adolescence boys”. To achieve the purpose of the present study, forty adolescence boys from Chennai district, Tamil Nadu were selected as subjects at random and their ages ranged from 15 to 19 years. The subjects were further classified at random into two equal groups of 20 subjects each such as Experimental Group and Control Group. Experimental Group underwent Ashtanga Vinyasa Surya Namaskar A&B (AVSN) Practices for thrice in a week for 6 weeks. Control Group (CG) did not participate in any special training apart from the regular day programme. The selected variables such as strength and balance were measured by using push up and Stork Balance Stand Test. The collected data were analysed statistically through analyse of covariance (ANCOVA) to find a significant difference. The results of the study showed that strength and balance were significantly improved due to Ashtanga Vinyasa Surya Namaskar A&B (AVSN) practices among adolescence boys.

**Keywords:** Ashtanga Vinyasa Surya Namaskar, strength, balance, adolescence boys

### Introduction

"Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture of tomorrow."

Swami Satyananda Saraswati (2002) <sup>[7]</sup>

Ashtanga yoga is based on the Antaranga yoga of Patanjali yoga system, it gives a practical and easy approach to reach higher states of consciousness. This is the most systematic method for attaining the highest state of meditation. The one who follows this type of yoga system which brings them into wisdom, control, harmony and equanimity, which embraces the accumulation of knowledge, esoteric, experience, arising of psychic powers, philosophy and meditation. Ashtanga yoga which is consist of eight fold system such as yama, niyama, asana, pranayama, prathyahara, dharana, dhyana, and samadhi (Krishan kumar suman, 2015) The word Vinyasa, means flow because of the poses run together in smooth way, and it's a broad classification that encompasses many different types of yoga, including Ashtanga and power yoga (Anna Pizer, 2019).

### Methodology

The purpose of the study is to find out the “effect of Ashtanga Vinyasa Surya Namaskar A&B (AVSN) practices on strength and balance among adolescence boys”. To achieve the purpose of the present study, forty adolescence boys from Chennai district, Tamil Nadu were selected as subjects at random and their ages ranged from 15 to 19 years. The subjects were further classified at random into two equal groups of 20 subjects each for Experimental Group and Control Group. Experimental Group underwent Ashtanga Vinyasa Surya Namaskar A&B (AVSN) Practices for thrice in a week for 6 weeks. Control Group (CG) did not participate in any special training apart from the regular day programme.

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**Training programme**

During the training period the experimental group underwent 6 weeks of Ashtanga Vinyasa Surya Namaskar A&B (AVSN) practices. The duration of training programme was planned for 60 minutes that is from 7.00am to 8.00am on Mondays, Wednesdays and Fridays. All the subjects involved in this study were carefully monitored throughout the training programmes, Each session 60 minutes consist of 5 min warm up exercise followed by Starting Prayer (2Min) Preparatory Practices-Warm up (13Min) Surya Namaskar-A&B (25Min) Loosening Exercise (5Min) Relaxation (13Min) Closing Prayer (2Min) After completion of 6 weeks of training period, the participants were retested.

**Warm up and loosening exercise**

Ankle Rolls, Knee Circle, Hip Circles, Sacrum Circles, Pelvic Rotations, Spine Rolls, Spinal Twist

**Surya Namaskar (A):** Inhale-Urdhva Hastasana, Exhale-Utanasana, Inhale-Urdvah Utanasana, Exhale-Chaturanga Dandasana, Inhale-Urdvah Mukha Svanasana, Exhale-Adho Mukha Svanasana, Inhale-Urdvah Utanasana, Exhale-Utanasana, Inhale-Urdhva Hastasana, Exhale- Samasthiti

**Surya Namaskar (B):** Inhale-Utkatasana, Exhale-Utanasana, Inhale-Urdvah Utanasana, Exhale-Chaturanga Dandasana, Inhale-Urdvah Mukha Svanasana, Exhale-Adho Mukha Svanasana, Inhale-Virabhadrasana I, Exhale-Chaturanga Dandasana, Inhale-Urdvah Mukha Svanasana, Exhale-Adho Mukha Svanasana, Exhale-Adho Mukha Svanasana, Exhale-Chaturanga Dandasana, Inhale-Urdvah Mukha Svanasana, Exhale-Adho Mukha Svanasana, Inhale-Urdvah Utanasana, Exhale-Utanasana, Inhale-Utkatasana, Exhale-Samasthiti

**Statistical tool**

The collected data were analysed statistically through analyse of covariance (ANCOVA) to find the significance difference.

**Analysis of the data**

The data collected prior and after the experimental periods on strength and balance of experimental group (AVSN) and control group (CG) were analysed and presented in table-I & II. The level of significance was fixed at 0.05 level of confidence to test the 'F' ratio obtained by analysis of covariance.

**Table 1:** Ianalysis of covariance for pre and post data on strength (Scores in Numbers)

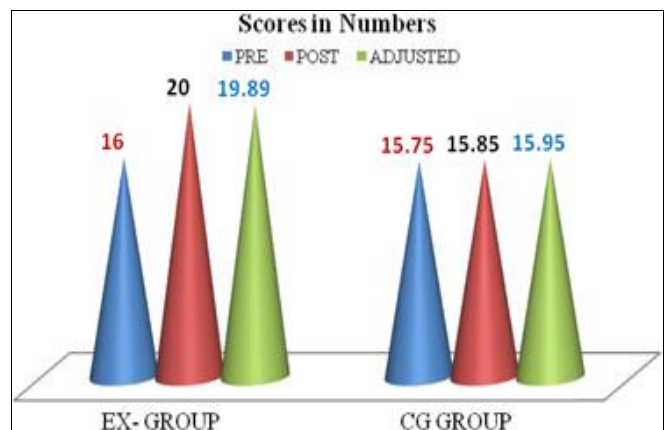
Test	Experimental Group (AVSN)	Control Group (CG)	Source of variance	Sum of Squares	DF	Mean square	F
Pre-test mean	16.00	15.75	Between	0.625	1	0.625	0.13
			Within	177.75	38	4.67	
Post-test mean	20.00	15.85	Between	172.22	1	172.22	40.76
			Within	160.55	38	4.22	
Adjusted mean	19.89	15.95	Between	154.69	1	154.69	162.46
			Within	35.23	37	0.95	

\* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 level of confidence with DF 1 and 38 and 1 and 37 were 4.09 and 4.10 respectively).

**Discussion on findings of strength**

The obtained F value on pre test scores 0.13 was lesser than the required F value of 4.09 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 40.76 was greater than the required F value at 4.09. This proved that the differences between the post-test mean at the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 162.46 was greater than the required F value at 4.10. This proved that there was Significant differences among the means due to six weeks of Ashtanga Vinyasa Surya Namaskar practice A & B (AVSN) on strength.

The obtained adjusted mean values were presented through bar diagram in figure 1.



**Fig 1:** Bar diagram showing the mean values Experimental group and Control group on strength

**Table 2:** Analysis of covariance for pre and post data on balance (scores in seconds)

Test	Experimental Group (AVSN)	Control Group (CG)	Source of variance	Sum of Squares	DF	Mean square	F
Pre-test mean	14.35	14.50	Between	0.22	1	0.22	0.05
			Within	161.55	38	4.25	
Post-test mean	18.15	14.55	Between	129.6	1	129.6	25.76
			Within	191.5	38	5.03	
Adjusted mean	18.21	14.48	Between	138.55	1	138.55	64.39
			Within	79.60	37	2.15	

\* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 level of confidence with df 1 and 38 and 1 and 37 were 4.09 and 4.10 respectively).

### Discussion on findings of balance

The obtained F value on pre test scores 0.05 was lesser than the required F value of 4.09 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 25.76 was greater than the required F value at 4.09. This proved that the differences between the post-test mean at the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 64.39 was greater than the required F value at 4.10. This proved that there was Significant differences among the means due to six weeks of Ashtanga Vinyasa Surya Namaskar practice A & B (AVSN) on balance.

The obtained adjusted mean values were presented through bar diagram in figure 2.

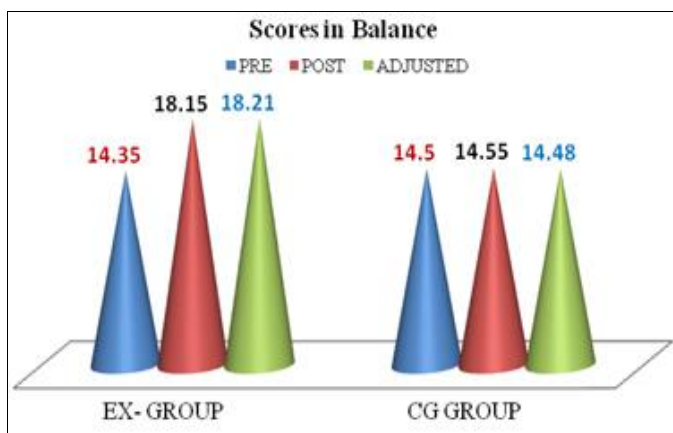


Fig 2: Bar diagram showing the mean values Experimental group and Control group on Balance

### Conclusion

Adolescence refers to the period of transition from childhood to adulthood. During this period young boys and girls develop to sexual maturity. Developing one's own identity, dealing with sexual maturation and development, emancipation from home, re-examination of beliefs are the major physical and psychological developments for the adolescent. Ashtanga Vinyasa Surya Namaskar practice (AVSSN) postures not only help to strengthen bones and muscles, but when one reaches the adolescence stage, the execution of the postures is done with more time and awareness than when one is younger and the body is still developing. Physical movements from one posture to another provide strength, balance, flexibility and health in general to the bones and muscles; maintaining the positions for a period of time brings about internal, hormonal and cellular changes.

1. It was concluded that selected criterion variables strength was significantly improved due to Ashtanga Vinyasa Surya Namaskar A&B (AVSN) practice among adolescence comparing to the control group.
2. It was concluded that selected criterion variables balance was significantly improved due to Ashtanga Vinyasa Surya Namaskar A&B (AVSN) practice among adolescence comparing to the control group.

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