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## Effects of Asanas and varied pranyama practices on bio-motor variables among inter collegiate players

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### Abstract

The purpose of this study was to find out the effects of Asanas and varied pranayama practices on Bio – motor variables among inter collegiate players. To achieve the purpose of the study (N=60) sixty inter collegiate players were randomly selected from three engineering College AIT, KCT and SRE College, Coimbatore and their age ranged between 18 and 25. The subjects were divided into three equal groups. Experimental Group I named as Asanas and varied Pranyama (Sithali and Sitkari), Experimental Group II named as Asanas and varied Pranyama (Bhasthirika and Kabalabathi) practices and Group III acted as control group (CG) pre – test was conducted for all the groups on selected variables and the score was recorded in their respective units as pre – test score. After pre – test the experimental group were treated with their respective training for three day per week for a period of twelve weeks. After completion of twelve weeks of training post – test was conducted on selected variables and the score were records in their respective units as post – test score. The pre and post test scores were analyzed with analysis of Co – variance and Scheffe’s post hoc test. In all the cases 0.5 level of significance was fixed. The results of the study showed that there was a significant difference found among the experimental groups. Asanas and varied Pranyama (Bhasthirika and Kabalabathi) practices Group is found to be better than other groups.

**Keywords:** Flexibility, leg explosive power, cardio - respiratory endurance, agility, abdominal strength and breath holding time

### Introduction

Yoga is universal and benefits people in every walk of life. Yogic research has proven its efficiency in effectively maintaining the psycho- physiological equilibrium and emotional stability is concerned, the yogic system is perhaps the best. Popular terminology associated with yoga, includes Hatha Yoga, Kriya Yoga, Tantra Yoga, Sidh Yoga and Transcendental Meditation.

On the other hand “Asana” means a state of being in which one can remain physically and mentally steady, calm, quiet and comfortable. Asanas are specific body positions which open the energy channels and psychic centers. They are tools to higher awareness and provide the stable foundation for our exploration of the body, breath, mind and beyond. 'Pranayama' is another term used always in yogasana literally means 'to expand Prana' (vital force). Pranayama is a process in which respiration is interrupted and Prana, that is, the vital force is controlled and regulated by the organs of the body. The purpose of Pranayama is to inspire, motivate, regulate and balance the vital force (Prana) pervading in the body.

In the context of sports, pranayama and asanas help the sportspersons to attain control over his actions in the game. Further, stress always hamper the performance of an individual in sports. This can only be conquered through Pranayama and asanas. In short, control of bio-energy is being occurred through asanas and pranayama. This study tries to predict the impact of Bio-motor variables and how far it affects and makes changes while performing and practicing asanas and pranayama.

### Methodology

The purpose of this study was to find out the effects of Asanas and varied pranyama practices on Bio – motor variables among inter collegiate players.

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time were selected variables were assessed by standardized tests.

**Analysis of the dada**

The dada collected from the experimental groups and control group on pre and after experimental on selected variables were statistically ermined by analyzes of covariance (ANCOVA) if there was any significant difference among the treatment means of each variable. Scheffe’s post hoc test was applied to test the significance of difference between the paired adjusted means at 0.05 level of confidence. The analysis of covariance (ANCOVA) on Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time of experimental groups and control group have been analyzed and presented in Table- 1.

**Table 1:** Analysis of covariance for experimental groups and control group on Bio – motor variables among inter collegiate players.

Variables	Adjusted post test means			SV	SS	df	MS	‘f’
	AVPSS	AVPKB	CG					
Flexibility	28.78	27.28	23.97	Between	241.21	2	120.60	17.04
				Within	396.19	56	7.07	
Leg explosive power	2.12	2.13	2.02	Between	0.15	2	0.08	9.21
				Within	0.48	56	0.01	
Agility	18.27	18.11	19.93	Between	40.48	2	20.24	34.08
				Within	33.25	56	0.59	
Abdominal strength	33.78	34.09	28.46	Between	263.36	2	131.68	66.22
				Within	111.35	56	1.98	
Cardio - Respiratory Endurance	2390.36	2420.04	2164.09	Between	665752.44	2	332876.22	71.80
				Within	259611.73	56	4635.92	
Breath Holding time	29.82	28.91	27.71	Between	43.38	2	21.69	27.39
				Within	44.33	56	0.79	

\*Significant at 0.05 level of confidence

**(The table value required for significance at 0.05 level with df 2 and 55 is 3.16)**

Table 1 shows that the adjusted post test mean value of Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time for Group I named as Asanas and varied Pranyama (Sithali and Sitkari) practices, Group II named as Asanas and varied Pranyama (Bhasthirika and Kabalabathi) practices and Group III acted as control group (CG) were (28.78, 27.28, 23.97), (2.12, 2.13, 2.02), (18.27, 18.11, 19.93), (33.78, 34.09, 28.46), (2390.36, 2420.04, 2164.09) and (29.82, 28.91, 27.71)

respectively. The obtained ‘f’ – ratio (17.04), (9.21), (34.08), (66.22), (71.80) and (27.39) for the adjusted post test mean was more than the table value 3.16 for df 2 and 55 required for significance at 0.05 level of confidence. The results of the study indicate that there was a significant mean difference on post test means of experimental group and control group on the decrease of Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time. To determine which of the paired mean had a significant difference Scheffe’s post hoc test was applied and the results are presented in table 2

**Table 2:** The scheffe ’s test for the difference between the adjusted post tests paired mean on Bio – motor variables among inter collegiate players.

Certain Variables	AVPSS	AVPKB	CG	MD	CI
Flexibility	28.78	27.28	--	1.5	2.11
	28.78	--	23.97	3.31	
	--	27.28	23.97	4.81	
Leg explosive power	2.12	2.13	--	0.01	0.08
	2.12	--	2.02	0.10	
	---	2.13	2.02	0.11	
Agility	18.27	18.11	--	0.16	0.60
	18.27	--	19.93	1.66	
	---	18.11	19.93	1.82	
Abdominal strength	33.78	34.09	--	0.31	1.15
	33.78	--	28.46	5.32	
	---	34.09	28.46	5.63	
Cardio - Respiratory Endurance	2390.36	2420.04	--	29.68	54.04
	2390.36	--	2164.09	226.27	
	---	2420.04	2164.09	255.95	
Breath Holding time	29.82	28.91	--	0.91	0.70
	29.82	--	27.71	1.20	
	---	28.91	27.71	2.11	

\*Significant at 0.05 level of confidence

Table 2 shows that the adjusted post mean for differences on Asanas and varied Pranyama (Sithali and Sitkari) practices, Asanas and varied Pranyama (Bhasthirika and Kabalabathi) practices and control group on Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time were (1.50, 3.31,4.81), (0.01, 0.10, 0.11), (0.16, 1.66, 1.82) (0.31, 5.32, 5.63)(29.68, 226.27, 255.95) and(0.91, 1.20, 2.11) respectively. The values are greater than the confidence interval value (2.11),(0.08), (0.60), (1.15), (54.04) and (0.70)which shows significant differences at 0.05 level of confidence. The adjusted post test means values of experimental group and the control group on Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time were graphically represented in the figures.

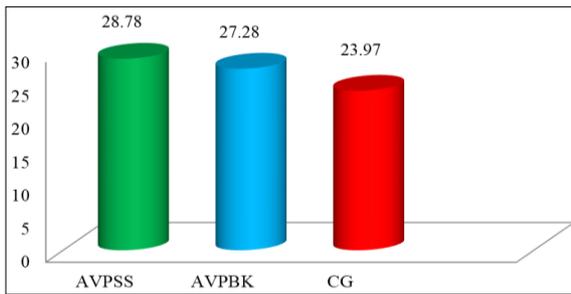


Fig 1: Bar diagram on ordered adjusted mean on flexibility for (AVPSS), (AVPBK) and (CG)

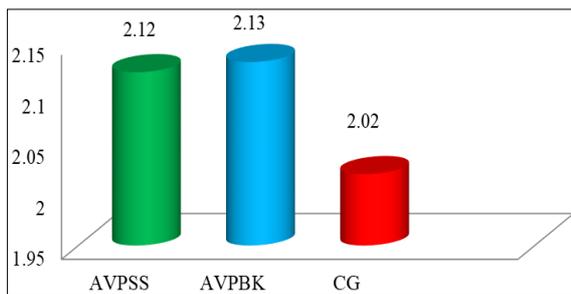


Fig 2: Bar diagram on ordered adjusted mean on leg explosive power for (AVPSS), (AVPBK) and (CG)

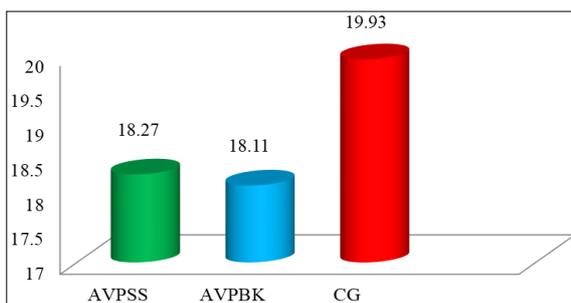


Fig 3: Bar diagram on ordered adjusted mean on agility for (AVPSS), (AVPBK) and (CG)

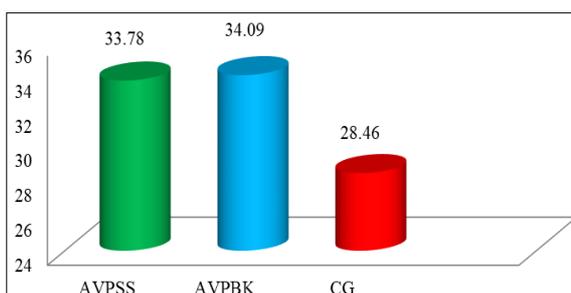


Fig 4: Bar diagram on ordered adjusted mean on abdominal strength

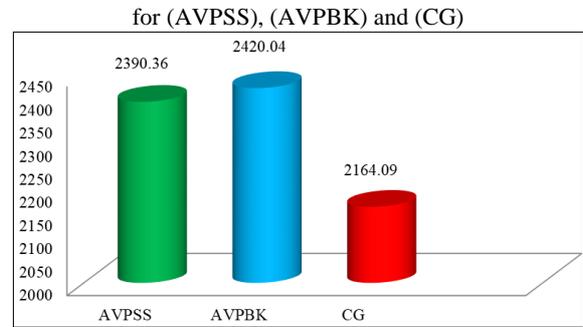


Fig 5: Bar diagram on ordered adjusted mean on cardio - respiratory endurance for (AVPSS), (AVPBK) and (CG)

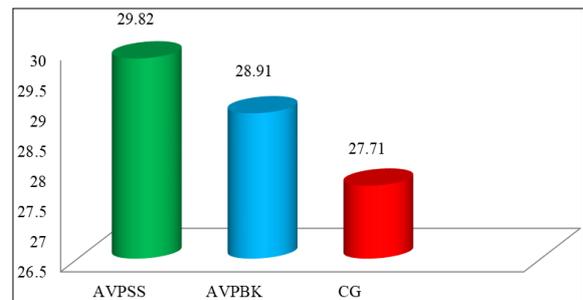


Fig 6: Bar diagram on ordered adjusted mean on breath hold time for (AVPSS), (AVPBK) and (CG)

**Finding**

From the results of the study that there was a significant difference in Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time between the adjusted post test mean of Asanas and varied Pranyama (Sithali and Sitkari) practices, Asanas and varied Pranyama (Bhasthirika and Kabalabathi) practices and control group. However the Asanas and varied Pranyama (Bhasthirika and Kabalabathi) practices increased in Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time was significantly. Decrease in Asanas and varied Pranyama (Sithali and Sitkari) practices. Therefore it may be result that the Asanas and varied Pranyama (Bhasthirika and Kabalabathi) practices group was found to be better than the Asanas and varied Pranyama (Sithali and Sitkari) practices.

**Discussion on finding**

Both the experimental groups showed significant improvement on pre to post - test on Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time with control group. When comparing the effects of (AVPSS) and (AVPBK) the Asanas and varied Pranyama (Bhasthirika and Kabalabathi) practices group showed significant improvement on Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time of inter collegiate players. (Sukhdev Singh *et al.*, 2011) These data provide more evidence to support the beneficial effect of yoga asana training on agility and muscular strength and thus, such training may be recommended to enhance sports performance. (Surender Kumar *et al.*, 2013) Regular practice of yogic exercise has improved the flexibility, endurance, agility, strength and speed of the subject. (Mark Tra *et al.*, 2001) [5], In summary, the results of this investigation indicate that 8 weeks of hatha yoga practice can significantly improve multiple health-related aspects of physical fitness in young, healthy, predominantly female

subjects. More specifically, yoga training can increase muscular strength, muscular endurance, flexibility, and cardio respiratory endurance. However, in the present study, hatha yoga did not have a significant effect on either body composition or pulmonary function.

### Conclusion

1. The result of the studying reveals that, both experimental groups (ASSPG & ABKPG) were significantly improvement on selected Bio - motor variables such as Flexibility, Leg explosive power, Agility, Abdominal strength, Cardio - respiratory endurance and Breath holding time then control group.
2. When comparing the results of experimental groups, ASSPG was shown better influence in the improvement of flexibility and breath holding time. Further the experimental group ABKPG was shown better results in the improvement of leg explosive power, cardio - respiratory endurance, agility and abdominal strength then ASSPG.

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