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THE EFFECT OF ASANAS AND PRANAYAMA ON SELECTED PHYSIOLOGICAL VARIABLES OF KABADDI PLAYERS

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INTRODUCTION

The application of psychological principles to the improvement of performance in the sports has received greater attention in these days . there are certain accepted psychological principles which have to be applied so that the athletes and players are able to show their best in their performance.

Eventually stress may manifest itself in the form of physical disease or mental breakdown. Yoga has a lot to offer as we approach the 21st century. It gives us means to compliment medical technology with a system of health care that addresses the problems of the mind and spirit, as well as those of the body.

Yoga alone can faster a balanced muscular system, elasticity of the bones, proper circulation of blood in the body and a proper functioning of the glandular system. Not only this; Yoga can also set right the most important systems in our body namely, our nervous system, the digestive and respiratory systems etc. Moreover, yoga can vitalize such important organs of the body without which life is impossible, such as Brain, heart, Kidney etc.

STATEMENT OF THE PROBLEM

The purpose of the study was to investigate the effect of Asanas and Pranayama on selected physiological variables of Kabaddi players.

Limitations -1. The study was confined to the male Kabaddi players of Meerut Distic ranging from 15-20 years of age.

2. The study was delimited to following Asanas - Surya Namaskar, Halasana, Naukasana, Bhungasana, Shalbhasana, Paschimottanasana and Ustrasana. The pranayama as breathing exercise was nadi shodhana pranayama.

3. The study was restricted to the following variables :

Physiological Variables ~

1.Resting Heart Rate

2.Resting Blood Pressure(i)SystolicPressure(ii)Diastolic Pressure

Hypothesis -It was hypothesized that there would be differential changes in the selected Cardio-Respiratory variables as a result of Yogic Asanas and Pranayama.

REVIEW OF RELATED LITERATURE

Milton (1967) selected 463 college males and studied the effects of three programmes of long distance running and an isometric exercise prograqmme on the development of cardio-vascular efficiency. The subjects trained four days a week either running 10,20 or 30 minutes, each session or with isometric exercises and no running. All the four groups made significant gains in cardio-vascular efficiency. The three running groups improved more than the isometric group but with no differences among the three group. Although running was superior to isometric exercise, the amount of running showed no relation to cardio-vascular endurance.

Nandi and Adhikari (1999) conducted a study on the effect of selected yogic practices on cardio respiratory endurance of school boys. The present study was undertaken on 20 male students of Rajagram S.B. Raha Institution, Bankura. Cardio respiratory endurance was measured using Cooper's 12 minute Run/Walk test. During the experimental period the subjects were given yogic

exercises for a period of eight weeks. The final test was conducted after eight weeks. The data showed a significant improvement in the fitness test as a result of Yogic practices.

Khodaskar conducted a comparative study of effects of Yogic and non yogic exercises on selected physiological variables of kabaddi players. This study was Conducted on 75 male kabaddi players of age group 18-25 years of local physical education training college.

The result showed that the training based on some Yogic exercises had more positive effects compared to non yogic exercises on the selected physiological variables.

Santra and Associates (1999) conducted a study on the effect of selected yogic practices on Asthma. Ten adult chronic asthmatic patients of age ranging between 30 to 55 years were selected as subjects. The programme of selected Yogic practices was planned and administered for a period of one year in three phases. The first phase consisted of a total of thirteen asanas of which five were old and eight were new, in. After completion of the training programme, it was found that the number of Asthmatic attack was noticeably reduced for all the subjects. In case of attach, the intensity was mild and the subject rarely needed any oral medicine.

PROCEDURE

Selection of Subjects For the present study sixty male kabaddi players were selected randomly from Meerut district the range of age of the subjects were 14-20 years.

ANALYSIS OF DATA AND RESULT OF THE STUDY

The analysis of covariance was employed to assess comparative effect of selected Asanas and Pranayama on Physiological variables.

During the treatment period of twelve weeks both the groups participated in one of the Yogic practices (Asanas and Pranayama) programme regularly.

For testing of obtained F-Ratio the level of significance was set at 0.05 level of significance. The reason to set this level was based upon the non availability of highly sophisticated equipments in the study.

Findings-Findings of the research study related to selected Physiological variables and the discussion of the findings have been presented.

Resting Heart Rate

The result pertaining to Resting Heart Rate are presented in Table 1 and 2.

Table - 1

ANALYSIS OF COVARIANCE FOR RESTING HEART RATE

	Asanas	pranayama	control	S.V.	Df	SS	MSS	F-ratio
Pre Test means	69.42	66.86	68.71	A.G. W.G.	2 18	24.67 346	12.33 19.22	0.64
Post Test Means	66.29	64.00	68.00	A.G. W.G.	2 18	56.38 243.43		2.08
Adjusted Post Test Means	65.48	66.40	67.40	A.G. W.G.	2 17	28.00 56.75	14.00 3.34	4.44*

F = 0.05 (2.17) F 0.05 (2.18) = 3.55

The Table-1 of analysis of covariance for Resting Heart Rate for Asanas, Pranayama and Control Group indicates insignificant F-ratio of 0.642 and 2.085 for the pre test and post test means respectively. However, the F-ratio for the adjusted post test means reveals a value of 4.44 which was not significant for being greater than the required F value of 3.55 at 0.05 level of

significance. This indicates that there were no significant differences from the adjusted post test means of Asana, Pranayama and Control Group in Resting Heart Rate.

TABLE - 2

PAIRED ADJUSTED FINAL MEANS AND DIFFERENCE BETWEEN MEANS OF THREE DIFFERENT GROUPS OF RESTING HEART RATE

Asanas	Pranayama	Control	Mean Difference	Critical Difference
65.48 65.48	66.40	 67.49	1.68* 3.01	1.65 1.65
	66.40	67.49	1.33	1.65

Table - 2 indicates that the difference between the paired adjusted final means of Asana, Pranayama and Control Group in Resting Heart Rate reveals significant value of 1.68 and 3.01 which emphasized greater means value observed for Asana group as compared to the Pranayama group.

Discussion of Findings :

By judicious Asanas and Pranayama one attains sound internal health, steady and peaceful mind and slim and lustrous body. By these practices the control over the autonomic nervous system is attained which in turn controls the functioning of various organs of the body. In the undertaken research study the Resting Heart Rate was improved by Asanas practices. The findings of the study are in consonance with Bhole and Karambelkar The change in the Resting Heart Rate of the subject involved in the study might have been because of the experimental treatment and also because of the fact that they were physical educationist who was participating in different games and sports. Therefore proposed hypothesis has been accepted in case of Resting Heart Rate.

Resting Blood Pressure

The results pertaining to Resting Blood Pressure are presented in Table 3 and 4.

Table - 3

ANALYSIS OF COVARIANCE FOR SYSTOLIC BLOOD PRESSURE

	Asanas	pranayama	control	S.V.	Df	SS	MSS	F-ratio
Pre Test Means	122.28	121.42	123.71	A.G. W.G.	2 18	18.67 1572.57	9.33 87.36	0.107
Post Test Means	121.14	120.28	123.85	A.G. W.G.	2 18	48.67 1615.14	24.34 87.76	0.27
Adjusted Post Test Means	121.30	121.557	122.62	A.G. W.G.	2 17	9.67 58.51	4.84 3.44	0.01

The Table - 3 of analysis of covariance for Systolic Blood Pressure of Asana, Pranayama and Control Group indicates insignificant F-ratio of 0.107, 0.27 and 0.01 for the pre-test and post test means respectively which were not significant as they values were lesser than the F-ratio of 3.55 and 3.59 respectively required for significant at 0.05 level of significance.

Table - 4

ANALYSIS OF COVARIANCE FOR DIASTOLIC BLOOD PRESSURE

	Asanas	Pranayama	Control	S.V.	Df	SS	MSS	F-ratio

Pre Test Means	69	72.57	69.71	A.G.	2	49.99	24.995	0.33
				W.G.	18	1369.82		
Post Test Means	67.71	71.85	69.71	A.G.	2	60.09	30.04	0.15
				W.G.	18	3563.15	197.95	
Adjusted Post Test Means	174.806	90.303	123.258	A.G.	2	280956.99	140478.49	0.318
				W.G.	17	7508318.08	441665.77	

F = 0.05 (2.17)= 3.59 F=0.05 (2.18) = 3.55

The Table-4 analysis of covariance for Diastolic Blood Pressure of Asanas, Pranayama and Control Group indicates insignificant F-ratio of 0.33 0.15 and 0.318 for the pre test and post test means respectively which were not significant as these values were lesser than the F ratio of 3.55 and 3.59 respectively required for significant at .05 level of significance.

Discussion of Findings

Based on available evidence a prudent recommendation is to include exercise in most therapeutic programme to manage hypertension. Both Systolic and Diastolic Blood Pressure can be significantly lowered with a regular programme of exercise. The findings of the study did not show any change in the Blood Pressure as a result of Asanas and Pranayama practices. As indicated by Gore the movement to acquire and than to release to any Asanas are very smooth and slow. These slow movements and maintenance of Asana in a relaxed way required minimum muscular activity and energy and therefore do not put any burden on the system. Thus, heart rate and respiratory rate remain in a normal range. This indicates no change on physiological mechanism. The reason for no change in Blood Pressure could be that had been performed more frequently and for longer duration of time, I could have brought changes in Blood Pressure.

Consequently, the hypothesis that there will be differential change in Resting Blood Pressure as a result of Asanas and Pranayama practices has been rejected.

CONCLUSIONS

Within the limitations of the present study the following conclusions may be drawn :-

Differential change was found on Resting Heart Rate between Asanas Pranayama and Control groups.

Practice of selected asanas and pranayama did not show any differential change on Resting Blood Pressure.

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