

Isolated and Combined Effect of Fartlek and Weight Training with Pranayama Practice on Selected Physiological Variables among Football Players

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KEYWORDS

Fartlek Training,
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Capacity, Systolic
Blood Pressure
and Diastolic
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ABSTRACT

Introduction: Fartlek training is a kind of running training which involves random variations in speed and intensity. A Fartlek workout allows the body to adapt to using both sources of energy, with the desired adaptation towards fat metabolism occurring during slower periods. Weight training is known as resistance or strength training, builds lean, stronger muscles, strengthens the bones and joints, help to improve the muscle mass and mobility, as well as improve psychological wellbeing. Yogic practices, which aim at physical and mental self culture, have convincing scientific bases and produce consistent physiological changes. It has been reported that yogis are capable of remarkable feats of endurance and controlling their autonomic functions.

Objectives: The study's goal was to determine the isolated and combined effects of fartlek and weight training with pranayama practice on selected physiological variables among football players.

Methods: For that accomplish, sixty (60) college-level men football players were chosen at random from various colleges affiliated with Anna University in and around Coimbatore, Tamil Nadu, India. They ranged in age from 18 to 22. They have been split into 4 categories of fifteen students each. Specifically, group I trained on fartlek with pranayama, group II trained on weight with pranayama, group III combined fartlek and weight training with pranayama and group IV did not participate in any specific training session and acted as the control group. Before and after the training session, they underwent two tests. For six weeks, the study's training phase consisted of three alternate days each week. The physiological variables like vital capacity, systolic blood pressure and diastolic blood pressure was selected as criterion variables. A spirometer was used to measure vital capacity in liters per second, and a digital heart rate/blood pressure monitor was used to measure blood pressure in millimeters per hour. A few selected dependent variables were used to assess subjects in each of the four groups before and right after the training program. The difference was ascertained using the dependent "t" test, and the percentage change was also calculated. The groups were examined for significant differences using the analysis of covariance (ANCOVA). The 0.05 level of confidence was used for the hypothesis. For the hypothesis, the 0.05 level of confidence was selected.

Conclusions: The isolated as well as combined effects of fartlek and weight training with pranayama practice on chosen physiological variables of football players resulted in a substantial change.

1. Introduction

Players who play football are no different from other athletes in that they must maintain a specific degree of fitness to demonstrate their abilities in all sports and games. The energetic, dynamic character of football is its most thrilling aspect. In the game, the player is never able to unwind for even a moment. Individual speed is the ability to perform consecutive motions of the same pattern with greater speed. Whether they are performed in a team environment or alone, football drills are a key component in the development of exceptional football players. The success of a football exercise is largely dependent on how well it is executed. It takes more than just drills to produce good football players and teams **(Owen, et. al., 2011)**.

Many training techniques were created to raise performance levels; one of the newest techniques for team games is the Fartlek technique. A Fartlek workout, sometimes referred to as speed play or shifting speed, distinguishes between several ways that its work can be carried out in a manner that is comparable to performance time during the games. Fartlek is also a key training tool for increasing players' anaerobic as well as aerobic capacities. **(Abdelmohsen, 2011)**.

Everyone is aware of the effects weight training has on the body's muscles and tendons, making it a crucial component of physical fitness or sports training. Numerous scientists and analysts also hold the view that weight training combined with appropriate cardiovascular activities lowers and regulates blood pressure and enhances the body's ability to maintain healthy cardiovascular systems. The body gains lean body mass with weight training, which aids in calorie burning, which is the biggest advantage **(Mahaboobjan and Viswejan, 2013)**.

Yoga is incredibly beneficial for enhancing overall wellness. For some people, yoga is an alternate kind of exercise that can help them reach the prescribed amounts of physical activity **(Jemni, et. al., 2000)**. Pranayama, or controlled breathing, is one of Patanjali's eight limbs of Ashtanga yoga. Texts on hatha yoga explain different pranayama practices. The significant benefits of yoga breathing on the mind-body complex are also discussed in the literature. Yoga breathing techniques include holding your breath, chanting humming noises, manipulating your nose, and varying the pace at which you breathe. The research of yoga's physiological effects has drawn more attention in recent years, particularly in relation to yogic breathing techniques. **(Satyanarayana, et. al., 2013)**.

2. Objectives

The study's goal was to determine the isolated and combined effects of fartlek and weight training with pranayama practice on selected physiological variables among football players.

3. Methodology

The study's objective was to determine the separate and combined effects on specific physiological variables in football players of fartlek and weight training mixed with pranayama practice. 60 male college football players had been selected at random from among the colleges connected to Anna University in and around Coimbatore, Tamil Nadu, India, in order to achieve this goal. They were between the ages of 18 and 22. They have been split into 4 categories of fifteen students each. Specifically, group I trained with fartlek and pranayama, group II trained with weight and pranayama, group III combined fartlek and weight training with pranayama and group IV did not participate in any specific training session and acted as the control group. They took two tests both before and after the training session. For six weeks, the study's training phase consisted of three alternate days each week. The physiological variables like vital capacity, systolic blood pressure and diastolic blood pressure was selected as criterion variables. A spirometer was used to measure vital capacity in liters per second, and a digital heart rate/blood

pressure monitor was used to measure blood pressure in millimeters per hour. Prior to and immediately following the training program, subjects in each of 4 groups had been determined on a few chosen dependent variables. The dependent "t" test had been utilized to determine the difference, and the percentage change was also measured. The ANCOVA had been employed to determine whether the groups differed significantly from one another. The significance was set at 0.05 level of confidence for this investigation.

4. Results

Vital capacity, systolic blood pressure and diastolic blood pressure tests were performed on the participants in each group both before and right after the training session. This study conducted analysis of co-variance (ANACOVA) to determine the independent and combined influences on certain physiological variables among football players of fartlek and weight training with pranayama practice. The significance level was selected at 0.05 since it was considered to be a suitable degree of confidence for this investigation. Scheffe's post hoc test had been employed to evaluate paired mean significant difference when 'F' ratio was determined to be significant.

Table - I Mean, SD and Dependent 't'- Test Values on Vital Capacity Systolic Blood Pressure and Diastolic Blood Pressure of Fartlek Training with Pranayama Practice Group (FTWPPG), Weight Training with Pranayama Practice Group (WTWPPG), Combined Fartlek and Weight Training with Pranayama Practice Group (CFWTWPPG) and Control Group (CG)

S. No.	Variables	Group	Pre-Test Mean	Post –Test Mean	SD (±)	't' -Test
1.	Vital Capacity	FTWPPG	3.63	4.01	0.07	21.01*
		WTWPPG	3.64	4.06	0.10	16.91*
		CFWTWPPG	3.64	4.19	0.08	23.10*
		CG	3.65	3.76	0.20	2.09
2.	Systolic Blood Pressure	FTWPPG	118.62	114.34	2.32	6.79*
		WTWPPG	118.49	114.56	2.64	5.13*
		CFWTWPPG	118.41	114.38	1.98	13.51*
		CG	118.71	118.11	1.13	1.98
3.	Diastolic Blood Pressure	FTWPPG	79.61	76.7	0.99	11.67*
		WTWPPG	79.52	76.18	1.01	7.11*
		CFWTWPPG	79.06	74.81	0.76	14.21*
		CG	79.42	78.35	2.10	1.83

*At the 0.05 level, significant. (The table value needed for the "t"-test with df 14 to be significant at 0.05 level is 2.15).

The acquired 't' ratio of fartlek training with pranayama practice group, weight training with pranayama practice group and combined fartlek and weight training with pranayama practice group of selected variables are 21.01, 16.91, 23.10; 6.79, 5.13, 13.51; 11.67, 7.11 and 14.21 respectively. For degrees of freedom 3 and 14, the selected variables "t" values exceeded the necessary table value of 2.15 at the 0.05 level of significance. There had been a significant difference between the pre-test & post-test for the chosen variables of the fartlek training with pranayama practice group, weight training with pranayama practice group, and combined fartlek and weight training with pranayama practice group. However, at the 0.05 level of significance,

control group's vital capacity, systolic blood pressure and diastolic blood pressure 't' ratio values were 2.09, 1.98, and 1.83, which were below the necessary table value of 2.15 for df 3 & 14. Consequently, it has been evident that it was unimportant.

Table – II: The Adjusted Post-Test Mean Values on Vital Capacity Systolic Blood Pressure and Diastolic Blood Pressure on Fartlek Training with Pranayama Practice Group (FTWPPG), Weight Training with Pranayama Practice Group (WTWPPG), Combined Fartlek and Weight Training with Pranayama Practice Group (CFWTWPPG) and Control Group (CG)

S.No	Variables	FT WPPG	WT WPPG	CFWT WPPG	CG	SOV	SS	Df	MS	'F'-Ratio
1.	Vital Capacity	4.02	4.06	4.19	3.76	B.S.	1.45	3	0.48	30.17*
						W.S.	0.88	55	0.01	
2.	Systolic Blood Pressure	114.34	114.56	111.38	118.11	B.S.	335.53	3	111.84	24.91*
						W.S.	246.91	55	4.48	
3.	Diastolic Blood Pressure	76.09	76.19	74.77	78.35	B.S.	97.68	3	32.56	18.30*
						W.S.	97.82	55	1.77	

* At the 0.05 level of confidence, significant (With df 3 & 55, table value needed for significance at 0.05 level is 2.77)

According to table II, the experimental groups' adjusted post-test mean values for vital capacity were 4.02, 4.06, and 4.19; their systolic blood pressure was 114.34, 114.56, and 111.38; and their diastolic blood pressure was 76.09, 76.19, and 74.77. The control group's values were 3.76, 118.11, and 78.35, respectively. The adjusted post-test mean's F-ratios of vital capacity (30.17), systolic blood pressure (24.91), and diastolic blood pressure (18.30) and are all higher than table values of 2.77 for df 3 & 55 at 0.05 level of confidence. The research found significant differences in adjusted post-test means for developing vital capacity, systolic blood pressure and diastolic blood pressure between experimental and control groups.

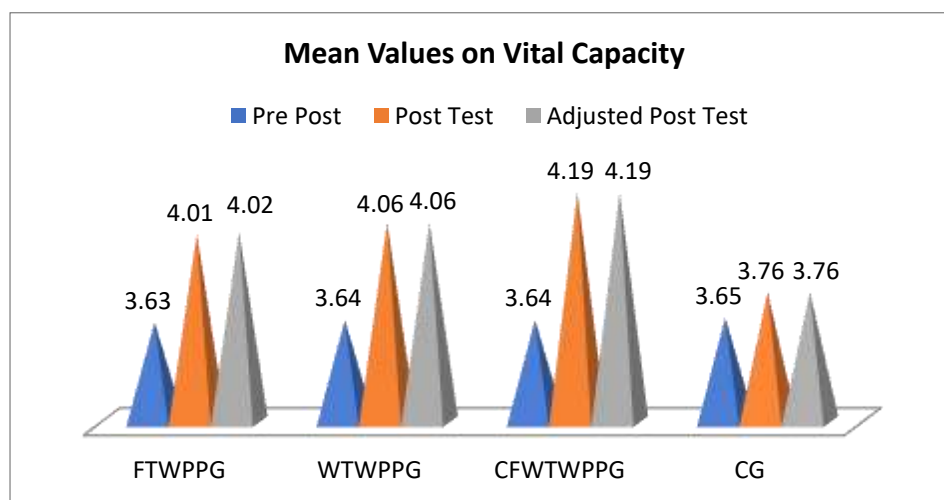


Figure – 1: Pre and Post Test and Adjusted Post-Test Mean Values on Vital Capacity on Fartlek Training with Pranayama Practice Group (FTWPPG), Weight Training with Pranayama Practice Group (WTWPPG), Combined Fartlek and Weight Training with Pranayama Practice Group (CFWTWPPG) and Control Group (CG)

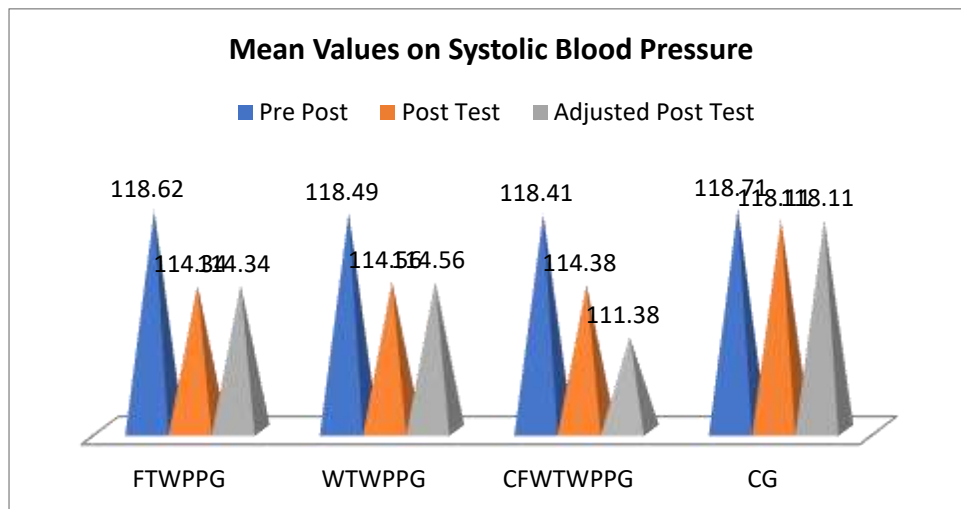


Figure 2: Pre and Post Test and Adjusted Post-Test Mean Values on Systolic Blood Pressure on Fartlek Training with Pranayama Practice Group (FTWPPG), Weight Training with Pranayama Practice Group (WTWPPG), Combined Fartlek and Weight Training with Pranayama Practice Group (CFWTWPPG) and Control Group (CG)

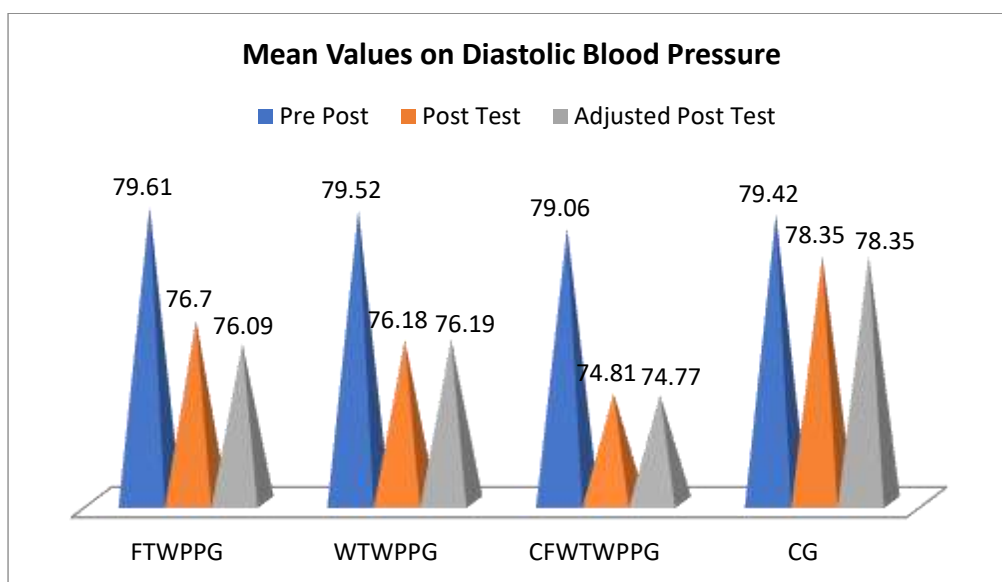


Figure 3: Pre and Post Test and Adjusted Post-Test Mean Values on Diastolic Blood Pressure on Fartlek Training with Pranayama Practice Group (FTWPPG), Weight Training with Pranayama Practice Group (WTWPPG), Combined Fartlek and Weight Training with Pranayama Practice Group (CFWTWPPG) and Control Group (CG)

5. Discussions on Finding

The study's findings show that the isolated as well as combined effects of fartlek and weight training with pranayama practice on a chosen physiological variables of football players resulted in a substantial change. These findings are consistent with the research of **Elamaran & Muthu Eleckuvan (2014), Ramesh (2013) and Sudhakara Babu (2013).**

6. Conclusions

The following conclusions were reached when the data was analysed.

All experimental groups— fartlek training with pranayama practice; weight training with pranayama practice; and combined fartlek & weight training with pranayama practice had considerably improved in a few characteristics, according to the study. Additionally, the study found that the group who practiced combined fartlek and weight training with pranayama practice group performed better than the other group. The control group did not show any improvement.

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