

THE EFFECT OF SPECIFIC STRETCHING EXERCISE TRAINING PROGRAM ON SELECTED PHYSICAL FITNESS VARIABLES OF FOOTBALL PLAYERS

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Abstract:

The purpose of this study was to find out the effect of specific stretching exercise training program on selected physical fitness variables of football players. This study, forty five football players randomly were selected as a subjects. They were selected from various schools in Coimbatore district. They were divided into three equal groups of fifteen subjects (each group), namely, experimented group I is under went proprioceptive neuromuscular facilitation group (PNFG) and experimented group II is under went static stretching group (STG) and experimented group III is plyometric training group (PTG). The experimental group participated in specific pre season training for period of six weeks. The data was collected before and after training for period of pre test, post test and relationship between the groups were analyzed by 't' ratio, analysis of co-variances (ANCOVA) test and scheffe post hoc test was applied. The level of significance for the study was chosen as 0.05. The experimental three groups after the eight weeks training significant improvement in speed, muscular endurance, agility.

KEYWORDS:

Speed, Muscular endurance, Agility.

INTRODUCTION

Stretching is a form of physical exercise in which a specific muscle or tendon (or muscle group) is deliberately flexed or stretched in order to improve the muscle's felt elasticity and achieve comfortable muscle tone. The result is a feeling of increased muscle control, flexibility and range of motion. Stretching is also used therapeutically to alleviate cramps. This stretching exercise very useful for football players because the players get more flexibility.

In its most basic form, stretching is a natural and instinctive activity; it is performed by humans and many other animals. It can be accompanied by yawning. Stretching often occurs instinctively after waking from sleep, after long periods of inactivity, or after exiting confined spaces and areas. Peters (1975) stretch is one where you assume a position and then hold it there with no assistance other than using the strength of your agonist muscles.

Increasing flexibility through stretching is one of the basic tenets of physical fitness. It is common for athletes to stretch before and after exercise in order to reduce injury and increase performance. Stretching can be dangerous when performed incorrectly. There are many techniques for stretching in general, but depending on which muscle group is being stretched, some techniques may be ineffective or detrimental, even to the point of causing tears, hyper mobility, instability or permanent damage to the tendons, ligaments and muscle fiber. The physiological nature of stretching and theories about the effect of various techniques are therefore subject to heavy inquiry.

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METHODOLOGY

This study, forty five football players randomly were selected as a subjects. They were selected from various schools in Coimbatore district. They were divided into three equal groups of fifteen subjects (each group), namely, experimented group I is under went proprioceptive neuromuscular facilitation group (PNFG) and experimented group II is under went static stretching group (STG) and experimented group III is plyometric training group (PTG). The experimental group participated in specific pre season training for period of six weeks. The data was collected before and after training for period of pre test, post test and relationship between the groups were analyzed by 't' ratio, analysis of co-variances (ANCOVA) test and scheffe post hoc test was applied. The level of significance for the study was chosen as 0.05. The experimental three groups after the eight weeks training significant improvement in speed, muscular endurance, agility.

TABLE-I

S.NO	VARIABLES	TEST ITEMS	UNIT OF MEASUREMENTS
1	Speed	50 Mts	In seconds
2	Muscular endurance	sit ups	In seconds
3	Agility	Illinois agility test	In seconds

RESULT AND STATISTICAL TECHNIQUE

The following statistical procedure were players to estimate the effect of pre season training on the selected physical fitness variables of experimental group. The data was collected before and after training for period of pre test, post test and relationship between the groups were analyzed by 't' ratio, analysis of co-variances (ANCOVA) test and scheffe post hoc test was applied.

**TABLE-II
COMPUTATION OF 't' RATIO OF PNFG, STG AND PLYG ON SPEED**

GROUP	PRE TEST	POST TEST	M.D	SEM	't' RATIO
PNF	6.68	6.52	0.158	0.171	9.22*
STG	6.69	6.44	0.231	0.018	12.25*
PLY	6.73	6.42	0.311	0.016	18.39*

*Significant at .05 level of confidence. Table required for significance was 2.01 with df 1 and 44.

Table II showed that the mean values of PNF, STG and PLYG on speed were 6.68, 6.52, 6.69, 6.44, 6.73, 6.42 respectively. The obtained "t" ratio value of 9.22, 12.25, 18.39 was greater than the required table value 2.01 for significance at 0.05 level of confidence with df 1 and 44. The result of the study showed that there was significant difference on speed.

TABLE-III
ANALYSIS OF COVARIANCE ON PRE TEST, POST TEST AND ADJUSTED POST TEST MEANS AMONG PNFG, STG AND PLYG ON SPEED

	PNFG	STG	PLYG	SOURCE OF VARIANCE	SUM OF SQUARE	DF	MEAN SQUARE	'F'
PRE	6.68	6.69	6.73	B/S	0.024	2	0.012	0.05*
				W/S	9.764	42	0.232	
POST	6.52	6.44	6.42	B/S	0.093	2	0.047	0.19*
				W/S	9.880	42	0.235	
ADJUSTED POST MEAN	6.54	6.46	6.38	B/S	0.175	2	0.087	18.18*
				W/S	0.197	41	0.005	

*Level of confidence (2 and 41) 3.23

The obtained 'F' ratio for the adjusted post test mean of PNFG, STG and PLY groups on speed was 18.18, since 'F' value was higher than the required table value of 3.23 for the degree of freedom 2 and 41, it was significant at 0.05 level confidence.

Whenever the 'F' value among the adjusted post test mean of PNFG, STG and PLYG groups was found to be significant, in order to find which of the training group had improved the speed better than the other training groups the scheffe's post hoc test was applied.

TABLE-IV
SCHEFFE'S TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED POST TEST MEAN ON SPEED

PNFG	STG	PLYG	M.D	C.I	SIGNIFICANT
6.54	6.46	-	0.08	0.12	Insignificant
6.54	-	6.38	0.16*	0.12*	Significant*
-	6.46	6.38	0.08	0.12	Insignificant

* Significant at 0.05 level

Confidence interval level (CI): 0.12

From the result it was inferred that the week proprioceptive neuromuscular facilitation group had improved on speed significantly than the other training group of STG, PLYG. Further, eight weeks of PNF group had better improvement in speed when compared with STG, PLYG.

Proprioceptive neuromuscular facilitation group had produced better result on speed than polymeric training group.

TABLE-V
COMPUTATION OF 't' RATIO OF PNFG, STG AND PLYG ON MUSCULAR ENDURANCE

GROUP	PRE TEST	POST TEST	M.D	SEM	't' RATIO
PNF	23.93	34.00	1.00	0.50	20.05*
STG	27.26	33.26	6.00	0.74	8.00*
PLY	24.80	28.93	4.13	0.85	4.86*

*Significant at .05 level of confidence. Table required for significance was 2.01 with df 1 and 44.

Table-V showed that the mean values of PNF, STG and PLYG on muscular endurance were 23.93, 34.00, 27.26, 33.26, 24.80, 28.93 respectively. The obtained "t" ratio value of 20.05, 8.00, 4.86 was greater than the required table value 2.01 for significance at 0.05 level of confidence with df 1 and 44. The result of the study showed that there was significant difference on muscular endurance.

TABLE-VI
ANALYSIS OF COVARIANCE ON PRE TEST, POST TEST AND ADJUSTED POST TEST MEANS AMONG PNFG, STG AND PLYG ON MUSCULAR ENDURANCE

	PNFG	STG	PLYG	SOURCE OF VARIANCE	SUM OF SQUARE	DF	MEAN SQUARE	'F'
PRE	23.93	27.26	24.80	B/S	89.73	2	44.867	4.59*
				W/S	410.26	42	9.768	
POST	34.00	33.26	28.93	B/S	224.93	2	112.467	15.24*
				W/S	309.86	42	7.378	
ADJUSTED POST MEAN	34.67	32.33	29.19	B/S	226.152	2	113.076	21.70*
				W/S	213.600	41	5.210	

*Level of confidence (2 and 41) 3.23

The obtained 'F' ratio for the adjusted post test mean of PNFG, STG and PLY groups on muscular endurance was 21.70, since 'F' value was higher than the required table value of 3.23 for the degree of freedom 2 and 41, it was significant at 0.05 level confidence.

Whenever the 'F' value among the adjusted post test mean of PNFG, STG and PLYG groups was found to be significant, in order to find which of the training group had improved the muscular endurance better than the other training groups the scheffe's post hoc test was applied.

TABLE-VII
SCHEFFE'S TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED POST TEST
MEAN ON MUSCULAR ENDURANCE

PNFG	STG	PLYG	M.D	C.I	SIGNIFICANT
34.67	32.33	-	2.34	4.68	Insignificant
34.67	-	29.19	5.48	4.68	Significant*
-	32.33	29.19	3.14	4.68	Insignificant

* Significant at 0.05 level

Confidence interval level (CI) : 4.68

From the result it was inferred that the week proprioceptive neuromuscular facilitation group had improved on muscular endurance significantly than the other training group of STG, PLYG. Further, eight weeks of PNF group had better improvement in muscular endurance when compared with STG, PLYG.

Proprioceptive neuromuscular facilitation group had produced better result on muscular endurance than polymeric group.

TABLE-VIII
COMPUTATION OF 't' RATIO OF PNF, STG AND PLYG ON AGILITY

GROUP	PRE TEST	POST TEST	M.D	SEM	't' RATIO
PNF	11.01	10.45	0.56	0.02	20.57*
STG	11.39	11.13	0.26	0.07	3.61*
PLY	10.91	10.50	0.40	0.04	9.21*

*Significant at .05 level of confidence. Table required for significance was 2.01 with df 1 and 44.

Table-VIII showed that the mean values of PNF, STG and PLYG on agility were 11.01, 10.45, 11.39, 11.13, 10.91, 10.50 respectively. The obtained "t" ratio value of 20.57, 3.61, 9.21 was greater than the required table value 2.01 for significance at 0.05 level of confidence with df 1 and 44. The result of the study showed that there was significant difference on agility.

TABLE-IX
ANALYSIS OF COVARIANCE ON PRE TEST, POST TEST AND ADJUSTED POST TEST MEANS AMONG PNFG, STG AND PLYG ON AGILITY

	PNFG	STG	PLYG	SOURCE OF VARIANCE	SUM OF SQUARE	DF	MEAN SQUARE	'F'
PRE	11.01	11.39	10.91	B/S	1.973	2	0.986	6.00*
				W/S	6.898	42	0.164	
POST	10.45	11.13	10.50	B/S	4.254	2	2.127	13.58*
				W/S	6.578	42	0.157	
ADJUSTED POST MEAN	10.53	10.88	10.67	B/S	0.799	2	0.400	10.66*
				W/S	1.537	41	0.037	

*Level of confidence (2 and 41) 3.23

The obtained 'F' ratio for the adjusted post test mean of PNFG, STG and PLY groups on agility was 10.66, since 'F' value was higher than the required table value of 3.23 for the degree of freedom 2 and 41, it was significant at 0.05 level confidence.

Whenever the 'F' value among the adjusted post test mean of PNFG, STG and PLYG groups was found to be significant, in order to find which of the training group had improved the agility better than the other training groups the scheffe's post hoc test was applied.

TABLE-X
SCHEFFE'S TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED POST TEST MEAN ON AGILITY

PNFG	STG	PLYG	M.D	C.I	SIGNIFICANT
10.53	10.88	-	0.35	0.34	Significant*
10.53	-	10.67	0.14	0.34	Insignificant
-	10.88	10.67	0.21	0.34	Insignificant

* Significant at 0.05 level

Confidence interval level (CI) : 0.34

From the result it was inferred that the week STG group had improved on agility significantly than the other training group of PNFG, PLYG. Further, eight weeks of STG group had better improvement in agility when compared with PNFG, PLYG. Static group had produced better result on agility than PNFG.

CONCLUSION

The proprioceptive neuromuscular facilitation group (RTG) was improved on speed significantly than the other training group of STG, PLYG.

The proprioceptive neuromuscular facilitation group had improved on muscular endurance significantly than the other training group of STG, PLYG.

The STG group had improved on agility significantly than the other training group of PNFG, PLYG.

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