EFFECTS OF POSITION WISE SPECIFIC SKILL TRAINING ON PHYSICAL AND FUNCTIONAL VARIABLES OF FOOTBALL PLAYERS

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ABSTRACT

Background

Position wise specific skill training is a program includes fitness and performance training designed specifically for athletic performance enhancement. One of the main benefits of utilizing position specific training drills within a training session is improving their positional sense. The study was designed to investigate the influence of position wise specific skill training on physical and functional (physiological) variables among school level football players.

Methods

To achieve the purpose of the study 60 school level football players were selected from various football academy in Coimbatore. Their aged of the subject ranged from 14 to 17 years. Selected subjects was randomly assigned to three equal groups (n=20), group I underwent forward specific skill training (FSST), group II underwent midfield specific skill training (MSST) and group III acted as defender specific skill training (DSST). The position wise specific skill training was given to the experimental group for 5 days per week for the period of 12 weeks. Soccer demands a wide range of motor skills and various physical attributes that include anaerobic metabolism, aerobic power, agility, speed, balance, and coordination that gives rise to a variety training methods (Araujo et al., 2016). Functional variables and physiological variables can be closely related, as functional variables often represent physiological parameters that indicate the state or performance of a biological system (Araujo et al., 2016). The following variables were measured with standard test items: Agility (4x10 meter shuttle run test), Balance (stork balance test) and Breath Holding Time (breath holding test).Pre and post test was conducted on separate days with warm up.

Result

The data was analyzed by applying dependent't test. The level of significance was set at 0.05. The position wise specific skill training had positive impact on agility, balance and breath holding time among school level football players. The result of the present study agility, balance and breath holding time speculated significant improvement due to the position wise specific skill training of school level football players.

Conclusion

The current findings provide a detailed description of the demands placed on elite football players, according to their positional role at different work intensities, which may be helpful in the development of individualized training programme for school level football players.

KEY WORD: *Position wise specific skill training, forward, midfielder, defender, Agility, Balance Breath Holding Time and school level football players,*

1. BACKGROUND

Football players must manage both his body and the ball with his feet and have to move and have with varied speed and direction. Agility is highly depending upon or inter related with speed, strength, balance and co-ordination. The physical requirements of soccer at the youth level are also great and attaining high levels of fitness is certainly a vital requirement for successful performance, especially for more advanced junior players. One important distinction however, is that the duration of games for younger players is usually less; with many leagues using a 60-minute match length instead of the 90-minute time frame used for senior players. Nonetheless, similar to their adult counterparts, youth players have to perform and recover from repeated high-intensity bouts over the course of a game, and the amount and type also appears to vary depending on player position. Player should give themselves the flexibility of trying various positions; it will help them greatly down the road. This generalist approach allows a player to see how his strengths and weakness fit into the different positions in the game. All positions require players to both defend and attack, so the general principles of attacking and defending (discuss later in the book) will always apply. Good soccer teams are looked upon as a complete unit, meshing everybody's roles and responsibilities. However, the four distinct positions within that

unit goalkeeper, defender, midfielder, and forward- require varying talents, and each position involves further subdivisions with their own skill sets. **(Parker, 2008).** In the past players have specialized too much on a particular position or role within a team, and have been ignorant of the problems which other positions offer. The game today requires players to develop skills required of all positions and for all members of a team to be aware of both the defensive and attacking principles of play **(Brown, 1980).** Focusing on position wise specific training is known as one of the most beneficial ways to improve an individual's capabilities within a specific role, as the ability to

challenge, develop and support players is vital in preparing them for match day **(Fifield, 2018).** When the training for players at higher level or above the basic level, they have to trained with specific objectives in sport, the training program should designed specifically based on the components that are needed for the particular skill or technique in sport. Thus such type of specific skill training program is a need for the player to excellent in sport. Thus the present study has been carried out to study the position wise specific skill training on selected physical and functional (physiological) variables among football players.

TABLE-1
Characteristics of training groups (N=20) at pre training mean

Variable	FSST	MSST	DSST
Age (Y)	14-16	14-16	14-16
Height (cm)	148.30	154.20	152.70
Weight (kg)	50	47	49

2. METHODS
2.1 PARTICIPANTS
A total of 60 school level football players aged 14 to 17 years were invited to participate in the study. From these, 60 school boys sample due to having valid data on commuting to school. Participants were recruited various academy in the provinces of Master kids football academy, NSS football academy, First kick football academy, Rathinam football academy and UFC football academy to participate in an intervention to increase position wise specific skill training. School level football players with valid data on commuting to performance at baseline and follow-up, sex, age and distance from home to academy were included in the final analysis (n = 20; 65% of the invited sample). The subjects were randomly assigned in to three equal groups namely, group I underwent forward specific skill training (FSST), group II underwent midfield specific skill training (MSST) and group III acted as defender specific skill training (DSST). The respective training was given to the experimental group the 5 days per weeks for the training period of twelve weeks.

2.2 DESIGN
The evaluated physical and functional parameters were Agility (4x10 meter shuttle run test in was measured by seconds), Balance (stork balance test was measured by seconds) and Breath Holding Time (breath holding test was measured by seconds). Pre and post test was conducted on separate days with

warm up. The parameters were measured at baseline and after 12 weeks of position wise specific skill training were examined. The intensity was increased once in two weeks based on the variation of the exercises.

2.3 TRAINING PROGRAMME
The training programme was lasted for 60 minutes for a session in a day, 5 days in a week for a period of eight weeks duration. These 60 minutes included position wise specific skill training for 40 to 50 minutes and 10 minutes warm-up, and 10 minutes warm down. Every four weeks of training 5% of intensity of load was increased from 65% to 80% of work load. The volume of position wise specific skill training prescribed based on the number of sets and repetitions. Eight weeks of specific skill training was given to the selected subjects. Their training days and hours every week were from Monday to Friday from 6.00 to 7.30 am.

2.4 STATISTICAL ANALYSIS
The means and standard deviations of position wise specific skill training groups were calculated for agility, balance and breath holding time for the pre as well as posttests. Statistical significance was set to a priority at $p < 0.05$. All statistical tests were calculated using the statistical package for the social science (SPSS).

TABLE - II
ANALYSIS OF COVARIANCE ON PRE, POST AND ADJUSTED POST TEST MEANS ON AGILITY OF FORWARDERS, MIDFIELDERS AND DEFENDERS GROUPS
(Scores in Seconds)

Test	Forwarders Specific Skill Training (FSST)	Midfielders Specific Skill Training (MSST)	Defenders Specific Skill Training (DSST)	Source of variance	df	Sum of square	Mean square	F-ratio
Pre-test mean	11.19	11.20	11.23	B / S	2	0.016	0.08	0.08
				W / S	57	5.61	0.98	
Post-test mean	10.62	10.72	10.85	B / S	2	0.55	0.27	5.38*
				W / S	57	2.97	0.05	
Adjusted post-test mean	10.62	10.73	10.84	B / S	2	0.49	0.24	6.32*
				W / S	56	2.18	0.04	

* Significant at 0.05 level for the degrees of freedom (2, 57) and (2, 56), 3.16

Table VI reveals the computation of 'F' ratios on pretest, posttest and adjusted posttest means of FSST, MSST and DSST on agility. The obtained 'F' ratio for the pretest means of FSST, MSST and DSST on speed was 0.08. Since the 'F' value was less than the required table value of 3.16 for the degrees of freedom 2 and 57, it was found to be not significant at 0.05 level of confidence. Further, the posttest 'F' ratio 5.38 after FSST, MSST and DSST on agility was higher than the required table value of 3.16 for the degrees of freedom 2 and 57, hence it was found to be statistically significant at 0.05 level of confidence. The obtained 'F' ratio for the adjusted post-test means of FSST, MSST and DSST on agility was 6.32. Since the 'F' value was higher than the required table value of 3.16 for the degrees of freedom 2 and 57, it was found to be statistically significant at 0.05 level of confidence.

FIGURE- I
BAR DIAGRAM SHOWING PRE, POST AND ADJUSTED POST TEST MEANS OF FORWARDERS SPECIFIC SKILL TRAINING GROUP, MIDFIELDERS SPECIFIC SKILL TRAINING GROUP AND DEFENDERS SPECIFIC SKILL TRAINING GROUP ON AGILITY
(Scores in Seconds)

TABLE - IV
ANALYSIS OF COVARIANCE ON PRE, POST AND ADJUSTED POST TEST MEANS ON BALANCE OF FORWARDERS, MIDFIELDERS AND DEFENDERS GROUPS
(Scores in Meters)

Test	Forwarders Specific Skill Training (FSST)	Midfielders Specific Skill Training (MSST)	Defenders Specific Skill Training (DSST)	Source of variance	df	Sum of square	Mean square	F-ratio
Pre-test mean	35.25	35.40	35.55	B / S	2	0.90	0.45	0.18
				W / S	57	135.50	2.37	
Post-test mean	37.40	38.66	39.41	B / S	2	41.30	20.65	10.34*
				W / S	57	113.80	1.99	
Adjusted post-test mean	37.50	38.66	39.30	B / S	2	32.98	16.49	20.25*
				W / S	56	45.58	0.81	

* Significant at 0.05 level for the degrees of freedom (2, 57) and (2, 56), 3.16

Table VI reveals the computation of 'F' ratios on pretest, posttest and adjusted posttest means of FSST, MSST and DSST on balance. The obtained 'F' ratio for the pretest means of FSST, MSST and DSST on balance was 0.18. Since the 'F' value was less than the required table value of 3.16 for the degrees of freedom 2 and 57, it was found to be not significant at 0.05 level of confidence. Further, the posttest 'F' ratio 10.34 after FSST, MSST and DSST on balance was higher than the required table value of 3.16 for the degrees of freedom 2 and 57, hence it was found to be statistically significant at 0.05 level of confidence. The obtained 'F' ratio for the adjusted post-test means of FSST, MSST and DSST on balance was 20.25. Since the 'F' value was higher than the required table value of 3.16 for the degrees of freedom 2 and 57, it was found to be statistically significant at 0.05 level of confidence.
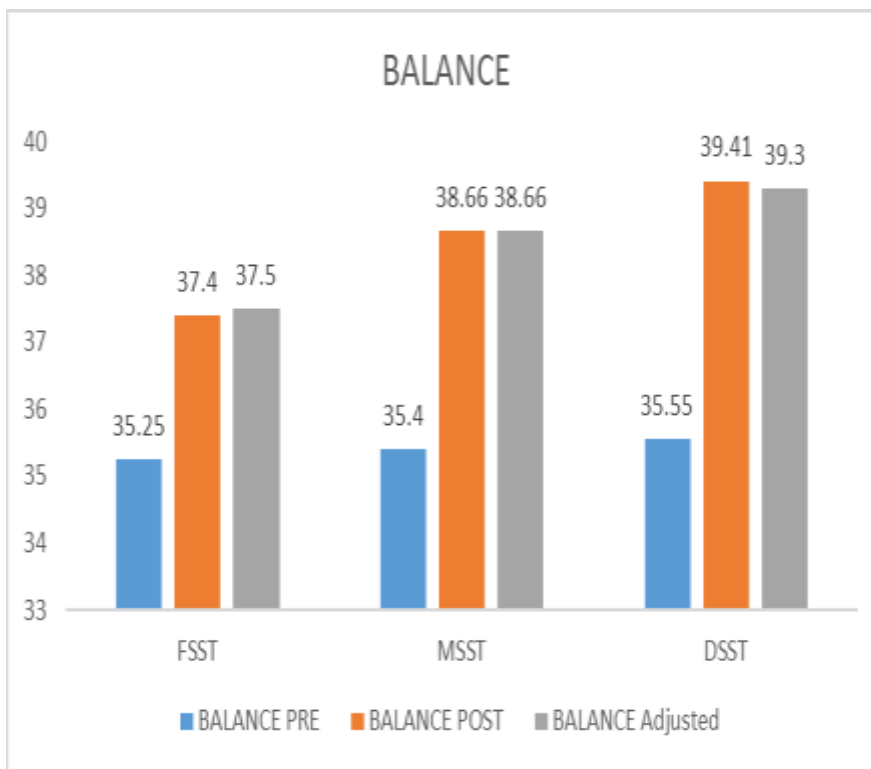

FIGURE- II
BAR DIAGRAM SHOWING PRE, POST AND ADJUSTED POST TEST MEANS OF FORWARDERS SPECIFIC SKILL TRAINING GROUP, MIDFIELDERS SPECIFIC SKILL TRAINING GROUP AND DEFENDERS SPECIFIC SKILL TRAINING GROUP ON BALANCE
(Scores in Seconds)

TABLE - V
ANALYSIS OF COVARIANCE ON PRE, POST AND ADJUSTED POST TEST MEANS ON BREATH HOLDING TIME OF FORWARDERS, MIDFIELDERS AND DEFENDERS GROUPS
(Scores in Seconds)

Test	Forwarders specific Skill Training (FSST)	Midfielders specific Skill Training (MSST)	Defenders Specific Skill Training (DSST)	Source of variance	df	Sum of square	Mean square	F-ratio
Pre-test mean	29.38	29.70	29.52	B / S	2	1.03	0.51	0.84
				W / S	57	352.79	6.18	
Post-test mean	33.15	35.99	34.76	B / S	2	81.28	40.64	21.44*
				W / S	57	108.00	1.89	
Adjusted post-test mean	33.20	35.94	34.77	B / S	2	75.09	37.54	30.80*
				W / S	56	68.24	1.21	

* Significant at 0.05 level for the degrees of freedom (2, 57) and (2, 56), 3.16

Table VI reveals the computation of 'F' ratios on pretest, posttest and adjusted posttest means of FSST, MSST and DSST on breath holding time. The obtained 'F' ratio for the pretest means of FSST, MSST and DSST on breath holding time was 0.84. Since the 'F' value was less than the required table value of 3.16 for the degrees of freedom 2 and 57, it was found to be not significant at 0.05 level of confidence. Further, the posttest 'F' ratio 21.44 after FSST, MSST and DSST on breath holding time was higher than the required table value of 3.16 for the degrees of freedom 2 and 57, hence it was found to be statistically significant at 0.05 level of confidence. The obtained 'F' ratio for the adjusted post-test means of FSST, MSST and DSST on breath holding time was 30.80. Since the 'F' value was higher than the required table value of 3.16 for the degrees of freedom 2 and 57, it was found to be statistically significant at 0.05 level of confidence
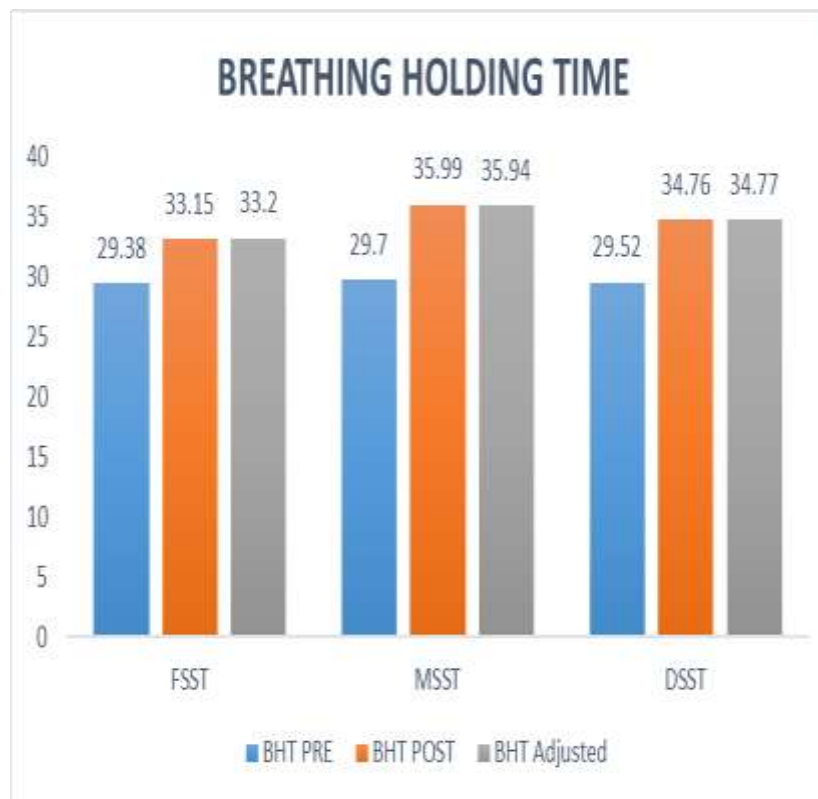
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FIGURE- III
BAR DIAGRAM SHOWING PRE, POST AND ADJUSTED POST TEST MEANS OF FORWARDERS SPECIFIC SKILL TRAINING GROUP, MIDFIELDERS SPECIFIC SKILL TRAINING GROUP AND DEFENDERS SPECIFIC SKILL TRAINING GROUP ON BREATH HOLDING TIME
(Scores in Seconds)

3. DISCUSSION ON FINDINGS

Football is fast, quick, aggressive and attractive it is considered a strenuous game because the game demands a high degree of fitness as well as intelligence, balance, flexibility are the basic qualities for all the elite players **(Worthington,1980).** The present study investigated the development of physical and functional variables among football players due to the impact of position wise specific skill training. The results of the present study clearly indicated that methods of position wise specific skill training had a significant acute effect on physical and functional variables. The football players who underwent position wise specific skill training were able to improve their physical and functional variables. Based on the data of the current study, both position wise specific skill training are positively related to the development of following variables (Agility, Balance and Breath Holding Time) and found to have a significant effect in improving the training model. Moreover, there are significant differences brought out as a result of position wise specific skill training. Thus, the selection of drills of the load stimulus in conjunction with selection of position wise specific skill training (Forwarders, Midfielders, Defenders) seem to play a vital role in determining the effectiveness of complex training regimes.

The hypotheses of the current study were very well experimented. The results of this study are very encouraging and demonstrate the benefits of position wise specific skill training over physical and functional variables. Besides, the result support that improvement in physical, and functional variables can occur in 12 weeks of position wise specific skill training. It can be useful during the last preparatory phase before the competition. The result of the current study suggests that the position wise specific skill training are an appropriate and effective programs to improve selected physical and functional variables school level football players.

Kokstein et al., **(2019)** found a strong relationship between fundamental motor skills (running, broad jumping, leaping, hopping, galloping and sliding) and game specific motor skills (dribbling and shooting) in adolescent Czech football players. **vanttinen** et al., **2010** also reported that passing accuracy is associated with the 10m sprint ($r=0.71$, $p<0.05$), countermovement jump performance ($r=-0.62,p<0.05$) and eye hand foot coordination ($r=-0.63,p<0.05$) in adolescent soccer players. **Kadagadakai** et al., **(2018)** reported no correlation between the grip strength; flexibility; sit-ups; Harvard step test performance; and soccer skill tests, such as dribbling, lofted-passing, shooting , short-passing, and juggling, in 41 diploma college soccer players. Research demonstrates that positional difference in maximal oxygen uptake (Vo_2 max) are evident for soccer players, with central midfielders and full backs displaying the highest values **(Reilly** et al., **2000)**.

It is noted that, subject of forward specific skill training group improved agility (5.09% VS 4.28%, 3.38%) than midfielder and defender specific skill training. Noted that subject

defender specific skill training improved balance (9.20% VS 6.09%, 3.70%) than forward and midfielder specific skill training group. It is noted that, subject of midfielder specific skill training group improved Breath holding time (21.17% VS 12.83%, 17.75%) than forward and defender specific skill training group respectively.

4. CONCLUSIONS

Findings from the current study suggest that playing a football who are more competent in position wise specific skill training spend more time engaged in physical and functional in particular during time periods of the day that represent key physical activity opportunities for school level football players. Physical and functional competency appears to be a better predictor of school level football player's position wise specific skill training during school-based physical activity opportunities than breathing competency. This suggests that improving movement skill competency, particularly physical and functional variables are agility, balance and breath holding time among school level football players is a potential avenue for promoting abilities of the performance for position wise specific skill training throughout the day. Findings from the current study substantially contribute to the understanding of position wise specific skill training in school level football players and will assist in evidence-based intervention design to increase performance capacity.

Based on the results, the following conclusions have been arrived.

1. From the results of the present study, it is very clear that, football players at school level significantly differ in agility, balance and breathe holding time.
2. It was concluded that forward players have better agility than midfielders and defenders at school level football players.
3. Also, it was concluded that midfielders have better breath holding time than forward players and defenders at school level football players.
4. Further, it was concluded that defenders have better balance than forward players and midfields at school level football players.

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