

## **EFFECT OF SELECTED PSYCHOMOTOR DRILLS ON THE PERFORMANCE OF VOLLEYBALL PLAYERS.**

**\*Dr.Sudhakara Babu Mande  
Principal,**

**Pragathi College of Physical Education,  
(Recognized by the NCTE, Affiliated to Andhra university, Visakhapatnam)  
Kothavalasa, Vizianagaram (Dt).Andhra Pradesh-535183.**

### **ABSTRACT**

This investigation was devoted to find out the effect of selected psychomotor drills on the performance of volleyball players. Forty men volleyball players, who represented their colleges in intercollegiate level matches in the age group of 19 to 25 years was randomly selected from different colleges in Andhra Pradesh. The subjects were randomly divided into two groups, experimental and control, consisting of 20 subjects in each group. Prior to the experimental treatment, volleyball performance of both the groups were measured of their attacking ability and blocking abilities which formed initial scores. The experimental group underwent 12 weeks psychomotor performance skills. The psychomotor performance of selected skill drills were taught to the subjects following principles of imitation, manipulation, precision, articulation and naturalization. After the demonstrating and practicing sessions of the selected skill drills, the subjects in experimental group were asked to undergo psychomotor drills for a period of 12 weeks. The pre and post test scores were analysed through two group ANCOVA and it was found that selected psychomotor performance skills significantly contributed for improvement of volleyball performance attacking ability and blocking ability of volleyball players. It was concluded that psychomotor skills significantly contributed for the improvement of volleyball performances attacking and blocking.

Key Words: Volleyball Performance, Attacking, Blocking, Psychomotor Drills

## **EFFECT OF SELECTED PSYCHOMOTOR DRILLS ON THE PERFORMANCE OF VOLLEYBALL PLAYERS.**

**\*Dr.Sudhakara Babu Mande**  
**Principal,**  
**Pragathi College of Physical Education,**  
**(Recognized by the NCTE, Affiliated to Andhra university, Visakhapatnam)**  
**Kothavalasa, Vizianagaram (Dt).Andhra Pradesh-535183**

### **INTRODUCTION**

Traditional approaches to psychomotor training in sports focus on developing motor (production) skills first with recognition skills added later, often in the form of full-skill practice such as a football scrimmage. Newer theories of training psychomotor performance in sports favor decision training over behavioral training (Vickers, 2007) . They advocate incorporating recognition skills earlier in the acquisition and practice of psychomotor skills, for instance having a quarterback practice reading defenses while practicing footwork drills. However, while whole-task practice is generally desirable, it can also be beneficial to separate production and recognition skills for the sake of targeted training activities that may be delivered in approximately the same time frame but that are optimized for either the psycho or the motor part. This approach to training psychomotor performance skills is based on the simple but profound notion that recognition and production components can be de-coupled for targeted training and then re-coupled for transfer to performance. The approach to training psychomotor performance skills is based on sports science research showing that experts' performance advantage over skilled but less expert performers often lies in the area of recognition skills rather than production skills and, further, that recognition skills can be targeted for training that then leads to improved performance of the overall skill (Williams and Ward, 2003) . The recognition training approach has far-reaching implications for training psychomotor performance skills beyond sports, especially those that are typically associated with simulator-based training such as aviation, surgery and use-of-force in law enforcement and the military (Fadde, 2007) .

Psychomotor performance skills, involve de-coupling the conjoined cognitive and motor domains for targeted training. Psychomotor performance skills typically include two types of component skills: production of motor actions and recognition of environmental conditions that trigger actions. Production and recognition skills are often intertwined in a seamless cycle of adaptive action that appears effortless when observed in an expert performer—whether that is a surgeon performing an arthroscopic ligament repair, a head sawyer segmenting a log to maximize the lumber footage, or a linebacker in American football knifing into the backfield to make a tackle-for-loss. Despite the intertwined nature of the production and recognition components of psychomotor performance, there are benefits to keeping them artificially separated for the sake of targeted training. Actually, it is quite typical of psychomotor training approaches to isolate and target production skills for training, often using behavioral principles of chaining small, sequential steps or shaping a skill sequence from simple to complex.

Volleyball has developed into a highly competitive sport which requires a high level of physical, physiological and psychological fitness. The game at a high level of competition, requires quicker sudden movements and fast reaction. Volleyball matches have no time limit and matches can last for several hours, if the teams are evenly matched. Successful play in volleyball is not the outcome of power alone but it is the product of the combined display of power and tactical abilities. Modern game of volleyball is characterized by accuracy, concentration and cleverness. (Sharma, 1986) There are periods of significant muscular activity in alternation with periods of relative relaxation intensity of work. During the time of play, the intensity of play oscillates from moderate to maximum. The time playing approaches three hours during which intensity increases to a points where, pulse rate reaches 200 beats / min and weight loss goes upto 2.5 to 3 Kgs.(Ktsehcer, 1986) In every tactical move in volleyball, one depends on team work and the individual skills, good passing, setting, spiking, jumping, controlling the ball, participation and speed to the ball and keeping the eyes on the ball. Tactics will succeed only through individual fundamental skills and with players thinking as a team.(Men's Volleyball Association, 1974)

The sports scientists and cognitive psychologists who are conducting recognition training programs are beginning to investigate instructional design questions that are of interest to teachers, trainers, and instructional designers—and serve as a model for instructional design research and practice. For example, studies have investigated the use of explicit or implicit instruction (Smeeton, Hodges & Williams, 2005) and internal or external focus of attention (Castaneda & Gray, 2007). Sports provides a natural context to draw from in designing training of psychomotor skills. It also provides a rich test bed for research and training in psychomotor learning and performance, in part because athletes and coaches have a “culture of practice” (MacMahon, Helsen, Starkes & Weston, 2007) that other professions don’t have and partly because performance is so much more clearly observable and measurable in sports. However, the implications of this line of research make it worth investigating as a training approach in a wide range of domains (Fadde, 2007). Hence, this investigation was devoted to find out the effect of selected psychomotor drills on the performance of volleyball players.

## **Methodology**

Forty men volleyball players, who represented their colleges in intercollegiate level matches in the age group of 19 to 25 years was randomly selected from different colleges in Andhra Pradesh. The subjects were randomly divided into two groups, experimental and control, consisting of 20 subjects in each group. Prior to the experimental treatment, volleyball performance of both the groups were measured of their attacking ability and blocking abilities which formed initial scores. The experimental group underwent 12 weeks psychomotor performance skills. The psychomotor performance of selected skill drills were taught to the subjects following principles of imitation, manipulation, precision, articulation and naturalization as presented in Table I. After the demonstrating and practicing sessions of the selected skill drills, the subjects in experimental group were asked to undergo psychomotor drills for a period of 12 weeks.

**Table I: Showing Psychomotor Drills Schedule for Experimental Group**

Name of Exercise	Repetitions		
	I – IV Weeks	V – VIII Weeks	IX to XII Weeks
Toss and Pass	5 mts	6 mts	7 mts
Wall Hitting	5 mts	6 mts	7 mts
Wall Blocks	5 mts	6 mts	7 mts
1 to 1 Setting Drills	5 mts	6 mts	7 mts
Line Passing	5 mts	6 mts	7 mts
Progressive Serving	5 mts	6 mts	7 mts

Rest of 1 minute was given between one drill to another

Immediately after the experimental period both the groups were measured of their performance in volleyball, namely, attacking and blocking abilities which formed the final scores. The difference between the initial and final scores on volleyball performance was considered the effect of psychomotor performance skills and the obtained data were subjected to statistical treatment using two group ANCOVA. In all cases 0.05 level was fixed to test the hypothesis.

## RESULTS

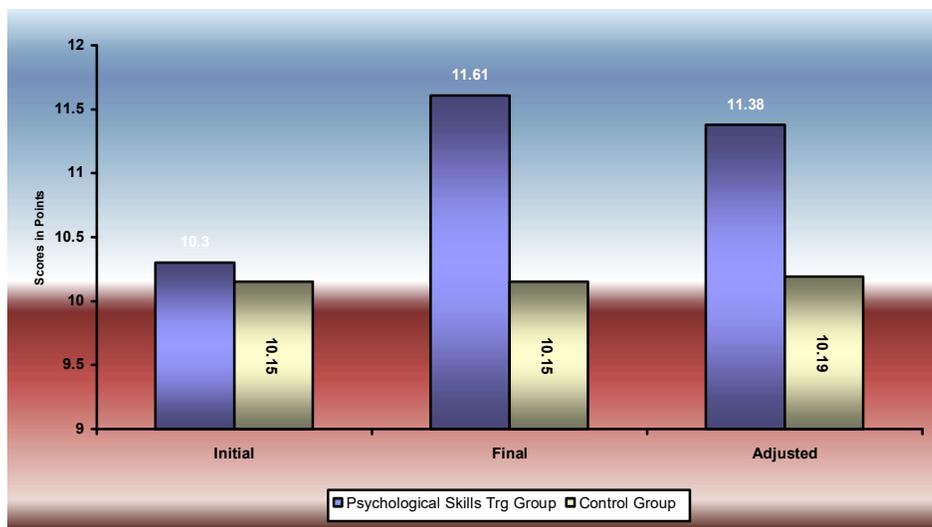
**Tab I: Results on Calculation of Analysis of Covariance on Selected Volleyball Performance between Experimental and Control Groups**

<b>Calculation of Analysis of Covariance on Attacking Ability</b>							
	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Pre Test Mean	10.3	10.2	Between	0.2	1	0.23	0.26
Std Dev	0.66	1.14	Within	32.8	38	0.86	
Post Test Mean	11.7	10.2	Between	22.5	1	22.50	23.05*
Std Dev	0.99	0.99	Within	37.1	38	0.98	
Adjusted Post Test Mean	10.19	11.61	Between	20.3	1	20.26	25.31*
			Within	29.6	37	0.80	
Mean Diff	0.00	1.35					
<b>Calculation of Analysis of Covariance on Blocking Ability</b>							
Pre Test Mean	9.8	10.3	Between	2.5	1	2.50	1.329
Std Dev	0.9	1.7	Within	71.5	38	1.88	
Post Test Mean	11.2	10.5	Between	5.6	1	5.63	6.26*
Std Dev	1.0	0.9	Within	34.1	38	0.90	
Adjusted Post Test Mean	11.27	10.38	Between	7.5	1	7.50	9.49*
			Within	29.2	37	0.79	
Mean Diff	1.45	0.20					

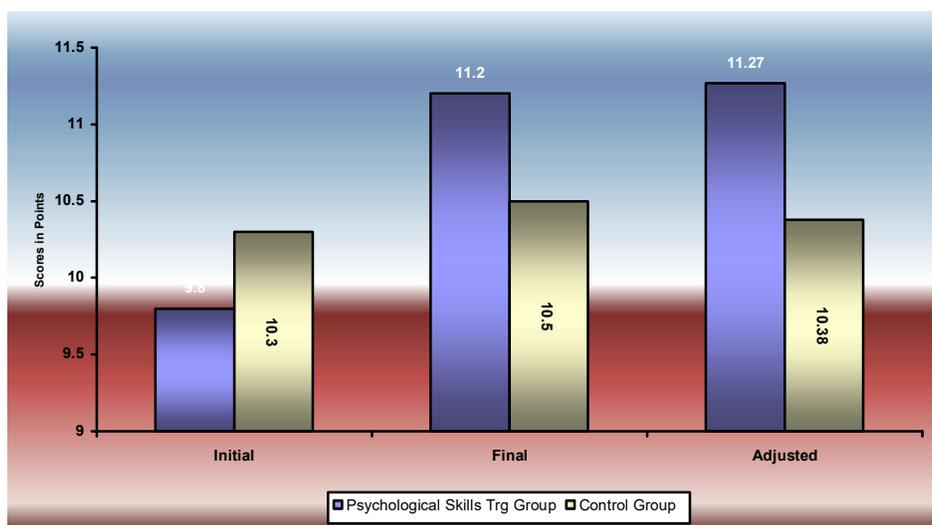
Required  $F_{(0.05, 1, 38)} = 4.08$  \*Significant

The pre, post and adjusted means on volleyball performances attacking and blocking is presented through Figure I and II for better understanding of the results.

**Figure I: BAR DIAGRAM ON INITIAL, FINAL AND ORDERED ADJUSTED MEANS ON ATTACK**



**Figure II: BAR DIAGRAM ON INITIAL, FINAL AND ORDERED ADJUSTED MEANS ON BLOCK**





## DISCUSSIONS

Psychomotor fitness plays an important role in everyday life activities of human being. It depends on mental processes as well as on peripheral elements of the movement system. Psychomotor fitness plays a significant role in volley ball since during the game great changes in workload occur as well as frequent changes in game situations (Uner Tan, (2007) The results presented in Table II proved that 12 weeks psychomotor performance skill significantly improved volleyball performance skill, attacking, as the obtained F value on adjusted means was 25.31, which was greater than the required F value 4.08 to be significant at 0.05 level.

Similarly, the results presented proved that there was significant improvement in blocking performance of volleyball players due to 12 weeks psychomotor performance skills as the obtained F value 9.49 on adjusted means was greater than the required table F value of 4.08 to be significant at 0.05 level.

Hence, it was found that selected psychomotor performance skills significantly contributed for improvement of volleyball performance attacking ability and blocking ability of volleyball players.

## CONCLUSIONS

It was concluded that psychomotor skills significantly contributed for the improvement of volleyball performances attacking and blocking.

**REFERENCES**

- Castaneda, B., & Gray, R. (2007). Effects of focus of attention on baseball batting performance in players of differing skill levels. *Journal of Sport and Exercise Psychology*, 29, 60-77.
- Fadde, P. J. (2007). Instructional design for advanced learners: Training expert recognition skills. *Educational Technology Research and Development*. DOI 10.1007/s11423-007-9046-5
- Fadde, P. J. (2007). Instructional design for advanced learners: Training expert recognition skills. *Educational Technology Research and Development*. DOI 10.1007/s11423-007-9046-5.
- MacMahon, C., Helsen, W. F., Starkes, J. L., & Weston, M. (2007). Decision-making skills and deliberate practice in elite association football referees. *Journal of Sports Sciences*, 25(1), 65-78.
- Men's Volleyball (London: Training and Education Associates Ltd., 1974), p. 72.
- Smeeton, N. J., Hodges, N. J., & Williams, A. M. (2005). The relative effectiveness of various instructional approaches in developing anticipation skill. *Journal of Experimental Psychology – Applied*, 11(2), 98-110.
- Tan U. (2007) A wrist-walker exhibiting no “Unertan Syndrome”: a theory for possible mechanisms of human devolution toward the atavistic walking patterns. *Int J Neurosci.*;117:147–56
- Vickers, J. N. (2007). *Perception, cognition, and decision training: The quiet eye in action*. Champaign, IL: Human Kinetics
- Vidyasagar Sharma, H.A. Khan and C. Butchiramaiah, An Article in SNIPES Journal Vol. 9 (Patiala: NIS Oct, 1986), p. 40.
- Williams, A.M., & Ward, P. (2003). Perceptual expertise: Development in sport. In J. L. Starkes & K. A. Ericsson (Eds.), *Expert performance in sports: Advances in research in sport expertise* (pp. 219-247). Champaign, IL: Human Kinetics
- Yuri Ktshcer, “Soviet Sports Review”, Vol 20: (1986) cited in NIS Documentation Service, Volleyball Vol 5: (June, 1986), pp. 4-5.