EFFECTS OF PLYOMETRIC TRAINING AND COMBINATION OF PLYOMETRIC TRAINING AND YOGA ON ANXIETY AND SERVING ABILITY OF INTER COLLEGIATE MEN VOLLEYBALL PLAYERS

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Abstract

The study to examine the effect of plyometric training and combination of plyometric training and yoga on psychological and skill performance variables of inter collegiate volleyball players. To achieve the purpose of the study 45 Subjects from Coimbatore district. Their age ranged from 18 to 23 years. The subjects were randomly assigned to three equal groups. Group- I (n=15) underwent plyometric training group (PTG) and Group – II (n=15) underwent plyometric training with yoga group (PTWYG) and Group - III (n=15) acted as control group (CG). The plyometric training and combination of plyometric training was given to the experimental group for the periods of 8 weeks. The control group was not given any sort of training except their routine work. The data collected from the subjects were statistically analyzed using 't' test to find out whether significant mean difference existed at 0.05level of confidence. This study may help trainers to assess the applicability of plyometric training and combination of plyometric training to improve Anxiety and Serving Ability one of the most important factors determining the inter collegiate volleyball players. Further, the findings confirmed the plyometric training and combination of plyometric training is suitable protocol to bring out the desirable changes over psychological and skill performance variables of inter collegiate volleyball players.

Key words: Plyometric training, Yoga, Anxiety, Serving Ability and Volleyball.

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INTRODUCTION

Plyometrics is the term given to exercises designed to increase the power of an athlete. It is defined as the equivalent of explosive strength **(Brukner & Khan, 2001)** and referred to by others as "speed-strength". In layman's terms, the aim of Plyometrics is to increase the explosiveness of the muscle allowing an athlete to run faster, jump further, or generate force at a greater rate. Plyometrics training is a form of training that is used to help develop and enhance explosive power, which is a vital component in a number of athletic performances. This training method is meant to be used with other power development methods in a complete training program to improve the relationship between maximum strength and explosive power.

The modern history of Plyometrics is somewhat brief but not relatively new. This technique was originated in Russia and Eastern Europe in the middle of 1960. The Soviets were very successful in the use of Plyometrics in their training programmers, especially in track and field. Yoga is a physical, mental and spiritual discipline, originating in ancient India. Yoga enhances the intelligence, empowers the mind and makes the life pleasant **(Joshi, 2001).** Volleyball is a team game where six players in the court will play as a unit and not like machine. Volleyball is considered as a top level competitive sport played in more than sixty countries and more than sixty million people.

The game of Volleyball was invented in 1895 by William G Morgan who worked for the Y.M.C.A in Holyoak, Massachusetts. His early form of the game was designed to provide mild exercise for large groups of businessmen. At first, Morgan tried on Tennis to these people, but the problem of purchasing rockets and materials paved the way for the invention of volleyball. However, the Tennis net was first used to raise it to a height of six feet over which a Basketball bladder was volleyed. Since the bladder was too light and the flight over the net was rather slow, he used the Basketball but it was too large and heavy to volley over the net. A proposal for manufacturing a ball that was neither heavy nor big as Basketball was given to splading and brothers with definite specification. The resulting ball that was smaller and lighter than Basketball and then the net was also approved. Since then the game has developed and spread worldwide. The main reason of its popularity was it can be played indoors and outdoors, need little space compared to other games, and it can be played by both sexes and over a considerable age range.

Play can be tremendously varying standards from a purely recreations level on the beach and in the park, through all levels of clubs and school level competitions, right up to international level **(Chen, 1989).**

Plyometric is a way to increase sporting performance by exercises with skip, jump and throw methods for strength or explosion. These exercises aim to increase the athlete's explosive reaction with strong concentric contraction after rapid eccentric contraction. 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 effect of plyometric exercises with specific skill practices on volleying and serving skill performance of volleyball players. The plyometric training has become highly structured training for development of volleyball game performance. It has vastly different training effects depending upon the intensity and duration of the work and rest period. More research is required concerning the variation in varied intensity of plyometric training and its effects**. Arumugam (2016)** studied to identify the effect of in-season training on skill performance of volleyball. The finding suggests that the skill performance improved of volleyball players. **Palao and others (2004)** examined the effect of a team's level on the performance of skills (serve, reception, spike, block and dig) in high level volleyball. The applicability of plyometric method of training to alter the volleyball skill performance development and fitness is not yet completely known. Performance depends on skills, physical and physiological factors.

Yoga appears to provide a comparable improvement in stress, anxiety and health status **(Caroline** *et al.,* **2007)**. Yogic practices can be used as psycho-physiologic stimuli to increase endogenous secretion of melatonin, which in turn, might be responsible for improved sense of wellbeing **(Harinath** *et al.,* **2004).**

Today yoga being an academic as well as professional subject of varied interests, has gained worldwide popularity. Recent research treads have shown that it can serve as an applied science in a number of fields such as education, physical education and sports, health and family welfare, medical field and also one of the valuable means for the development of human resources for better performance and productivity of life. It has generally been believed that yoga is a

spiritual science having emancipation as its goals and hence cannot be treated only as a therapy **(Sachan** *et al.*, **2015)**.

Anxiety defined as "an unpleasant psychological state in reaction to perceived stress concerning the performance of a task under pressure **(Cheng** *et al.*, **2009).** Anxiety is a common emotional state experienced by athletes at all levels of performance. In general, anxiety is made up of cognitive (e.g., worrying thoughts and apprehensions) and somatic (e.g., degree of physical activation) components. Anxiety can manifest itself as a stable part of one's personality known as trait anxiety, or as a temporary, more malleable, situation-specific state anxiety **(Weinberg and Gould, 2015)**. In a sport context, anxiety is often regarded as a typical response to a situation where an athlete's skills are being evaluated **(Smith and Smoll, 1990).**

Competitive teams showing very great skills like serve, pass, set, attack, block and dig. These skills accommodate a number of accurate techniques which have been brought through the years and taken into consideration best exercise in extreme level volleyball. Volleying is the motion of passing a ball back and forth over a net. The technique to volleying volleyball takes skill and practice. The volley is a basic skill that anyone playing the game should be able to do proficiently. Volleying is the movement of passing a ball back and forth over a net. The volley is a basic skill that anyone playing the game should be able to do capably. Volley is to set it into a better position for a teammate to bump or spike it onto the other side of the court. A serve is referred to as an 'ace' whilst the ball lands directly onto the courtroom or travels out of doors the court after being touched by an opponent. A participant stands in the back of the inline and serves the ball, in a try to force it into the opponent's court docket. His or her main objective is to make it land in the court; it is also proper to set the ball's course, pace and acceleration in order that it will become hard for the receiver to address it properly. Plyometric training with specific skills practice is the helpful to survive with the better performance in Volleyball game.

Therefore, this study aimed to analyze the anxiety and serving ability in men volleyball players after eight weeks of plyometric training and combination of plyometric and yoga training on anxiety and serving ability of men volleyball players.

EXPERIMENTAL APPROACH TO THE PROBLEM

In order to address the hypothesis presented herein, we selected 45 inter collegiate volleyball players from Coimbatore District. Their age ranged from 18 to 23 years. The subjects were randomly assigned in to three equal groups namely, plyometric training Group - I (n=15) *(PTG)* and Group – II (n=15) underwent plyometric training with yoga group (PTWYG) and Control Group (n=15) (CG). The respective training was given to the experimental group the 5 days per weeks for the training period of eight weeks. The control group was not given any sort of training except their routine. The evaluated parameters were the anxiety assessed by GAD-7 test with unit of measurements in screening and service ability assessed by Russel Lange Volleyball test with unit of measurement in points. The parameters were measured at baseline and after 8 weeks of plyometric training and plyometric training with yoga were examined. The intensity was increased once in two weeks based on the variation of the exercises.

TRAINING PROGRAMME

The training programme was experimental group I underwent plyometric training for the period of eight weeks. The training was given 3 days per week during morning time. Each training session lasted for 45 minutes that included 5 minutes warmup and 5 minutes warm down. experimental group II underwent plyometric training with yoga for the period of eight weeks. The training was given three days per week during morning time. Each training session lasted for 45 minutes that included 5 minutes warmup and 5 minutes warm down. The load was increased from low intensity to high intensity.

TABLE - I

COMPUTATION OF 't' RATIO ON ANIXETY ON EXPERIMENTAL GROUP AND CONTROL GROUP

(Scores in Numbers)

GROUPS	PRE TEST	POST TEST	SD	"t" RATIO
Plyometric Training Group	17.23	15.30	0.15	11.72*
Plyometric Training with Yoga Group	17.26	15.01	0.18	13.77*
Control Group	17.30	17.33	0.28	0.89

*significant level 0.05 level (degree of freedom 2.14, 1 and 14)

Table I reveals the computation of mean, standard deviation and 't' ratio on anxiety of plyometric and plyometric with yogic practice group. The obtained 't' ratio on anxiety was 11.72 and 13.77 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained't' values were greater than the table value it was found to be statistically significant.

Further the computation of mean, standard deviation and't' ratio on selected variables parameters namely anxiety of control group. The obtained 't' ratio on anxiety was 0.89 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained't' values were lesser than the table value it was found to be statistically not significant.

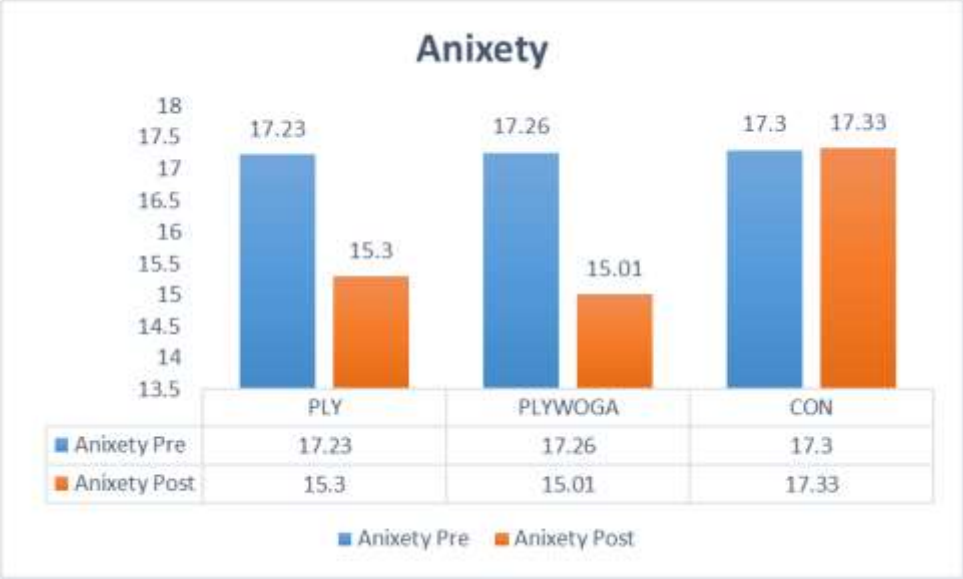

FIGURE- I

BAR DIAGRAM SHOWING THE MEAN VALUE ON ANXIETY ON EXPERIMENTAL GROUP AND CONTROL GROUP

(Scores in Numbers)

TABLE - II

COMPUTATION OF 't' RATIO ON SERVING ABILITY ON EXPERIMENTAL GROUP AND CONTROL GROUP

(Scores in Numbers)

GROUPS	PRE TEST	POST TEST	SD	't' RATIO
Plyometric Training Group	23.60	29.86	7.18	3.34*
Plyometric Training with Yoga Group	23.65	30.06	4.35	4.84*
Control Group	23.61	23.75	1.23	0.84

*Significant level 0.05 level (degree of freedom 2.14, 1 and 14)

Table II reveals the computation of mean, standard deviation and't' ratio on serving ability of plyometric and plyometric with yogic practice group. The obtained 't' ratio on serving ability

were 3.34 and 4.84 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained't' values were greater than the table value it was found to be statistically significant.

Further the computation of mean, standard deviation and 't' ratio on serving ability of control group. The obtained 't' ratio on serving ability were 0.84 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were lesser than the table value it was found to be statistically not significant.

FIGURE- II

BAR DIAGRAM SHOWING THE MEAN VALUE ON SERVING ABILITY ON EXPERIMENTAL GROUP AND CONTROL GROUP

(Scores in Numbers)

DISCUSSION AND FINDINGS

Yoga advocates unselfishness and enormous love. Yoga advocates virtue and patience. Yoga additionally gives gladness, ground-breaking tonic for the mind, masculinity, considerateness with the limit with respect to block attempt and self-examination. The

consequences of the present examination demonstrate the adequacy of yoga practices in training programme for psychological and skill improvement of men Volleyball Players.

The current study investigated the inspiration of eight weeks plyometric and combination of plyometric with yogic practice training on anxiety and serving ability of the inter collegiate volleyball players. The results of this study indicated that plyometric and combination of plyometric with yogic practice training is more efficient to bring out desirable changes over the anxiety and serving ability of intercollegiate men volleyball players.

Gabbett *et al.,* **(2008)** suggest that a combination of instructional training and skill-based conditioning games is likely to confer the greatest improvements in fitness and skill in junior elite volleyball players. **Trajković** *et al.,* **(2012)** reported that specific volleyball conditioning is necessary in the preseason period for the development of the lower-body strength, agility and speed performance in volleyball players. **Griffith** *et al.,* **(2008)** indicated that implementing the skills training program was associated with enhanced service performance. **Georgieff** *et al.,* **(2006)** suggested that results demonstrate that skill-based testing offers a reliable method of quantifying development and progress in junior volleyball players.

This review shows there is a lack of proposals of tools to support these volleyball players during their training. Therefore, this encourages us to participate actively in the generation of interactive systems which address the skill development needs motivating and engaging context. Hence, it concluded that for anxiety and serving ability changes of inter collegiate volleyball players.

CONCLUSIONS

From the results of the study and discussion the following conclusions were drawn.

1. Based on the result of the study it was concluded that the eight weeks training of plyometric training have been significantly changes on anxiety and serving ability significantly changes of inter collegiate volleyball players.

2. The eight weeks training of plyometric with yogic practice training have been significantly changes on anxiety and serving ability changes of inter collegiate volleyball players.

3. It was also concluded that plyometric with yogic practice training had produced better result on anxiety of inter collegiate volleyball players then plyometric training.

4. Further, it was concluded that plyometric with yogic practice training had produced better result on serving ability of inter collegiate volleyball players then plyometric training.

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