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Effect of Psychological Skills Training on Selected Psychophysiological and Overall Playing Ability of Volleyball Players

Physical Education

KEYWORDS : : Psychological Skills Training, Competitive anxiety, Blood pressure, Resting heart rate and Overall playing ability.

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ABSTRACT

The present study is mainly concerned with volleyball players participating in high level competitions. Nowadays, the game volleyball is becoming a professional sport rather than a competitive sport. So the competitiveness among the volleyball players is growing up day by day with a different colour. Reasons for such competitiveness arises naturally among the players, because of pressures such as equal competition, and concern about fulfilling the expectation of their teachers, coaches, parents, peer group and personal needs. It leads to mental and physical stress. In high level stress, the player's vision may have to be narrow and they are unable to understand the things around them. Hence under high level stress, players are unable to show their real effort in matches though they are having the needed physical and mental resources. The study consisted of 30 male volleyball players selected from PSG College of Arts & Science, Coimbatore. Their age ranged from 18 to 25 years. Subjects were randomly assigned Group I underwent psychological skill training group and Group II control group. The subjects of Psychological Skills Training Group (PSTG) were treated with psychological skills training (imagery training and progressive muscle relaxation training) for about six weeks in addition to their physical training traditionally they practiced, whereas in the case of subjects of control group, they were allowed to practice only physical training practiced traditionally. The following variables were selected for the present study of finding the magnitude of effects of psychological skills training on the performance of physiological systems due to psychological impacts on aspects and skill performance of volleyball players. As psycho- physiological variables, psychologically the chosen variables were cognitive anxiety, somatic anxiety, self confidence, and physiologically systolic blood pressure, diastolic blood pressure, resting heart rate and overall playing ability. The present study pays attention mainly to test the mean difference of two groups, (Experimental and Control Group) and secondarily deals with the increase of means in each group, from baseline to post treatment for various measures. The means gains recorded by the Experimental and Control Group groups in the pre-test and post-test were tested for significance by applying paired 't' test. To determine whether the training programmes produced significantly different improvements in selected variables after 12 weeks of training, the analysis of co-variance was used. The result of the study reveals that there was significant difference in 0.05 levels.

Introduction

The present study is mainly concerned with volleyball players was participated in the high level competition. Now days, the game volleyball is becoming as a professional sport rather than the competitive sport. So the competitiveness among the volleyball players is growing up day by day with different color. Reason for such competitiveness is arise naturally among the players, because of pressures such as equal competition, concern about fulfilling the expectation of their teachers, coaches, parents and peer group and personal needs. It leads to mental and physical stress. In high level stress, the player's vision may have to be narrow and could not understand the things around them. Hence having the high level stress, players are unable to show their real effort in matches though they are having the needed physical and mental resources. Hence the physical education teachers and coaches are in need to study the means and methods needed to face such competitive pressures whereby they can equip their players to perform well. As far as means and methods for high performance in sports are concerned, they are varied with the nature and type of competition such as low level competition and high level competition. In high level competition, sport is demanding high level mental toughness. Mental toughness of a player can be strengthened only through the implication of cognitive based training. Cognitive based training helps them to realize the nature of internal and external pressures whereby they can easily face the competitive pressures and to show their talents in time. Having this thirst, the investigator has impelled to study.

The development of mental skill for a volleyball player is as important as the development of physical skills. A player should be able to think, understand and analyse each movement during the game and act. This enables them to make split-second decisions on the spot and develop determination and will power. The player must have self-confidence and positive attitude. Practicing a skill over and over to perform it correctly in game situation adds to self-confidence. Apart from various physical and mental factors, the very important aspect to be considered for top-level player is emotional factors. Emotional factors such as anxiety, stress, fear and anger play very crucial roles in the game of volleyball. At the beginning of the game, while taking the serving, the anxiety of a player is less than that of the same player taking the serving, in the last minute of the game, when his team is down by one point. Stress in competition is the result of both internal and external pressures. A player should learn to control his feelings that will make him tense, fearful or angry. The fear of failure, the inferiority feeling when comparing him with the opponent will affect the performance of a player.

Psychological skills training (PST) refers to systematic and consistent practice of mental or psychological skills for the purpose of enhancing performance, increasing enjoyment, achieving greater sport and physical activity and self-satisfaction. PST is as important to the athlete as physical training and can contribute 50 – 90% of their performance. Like technical or tactical aspects of a sport, they must be learned, developed and practiced by an athlete. It is the deliberate, systematic practice of strategies and methods designed to enhance an athlete's performance, by enhancing their psychological skills. Psychological skill training is a scientific basis for the effective development of psychological skills and one of the four phases involved in performance enhancement. PST is an integrated, multi-dimensional approach to mental training and a valuable complement to physical training. PST has practical application in athletics at any age. Many researchers speculate that PST may be even more important for younger athletes. It has been effective at enhancing performance of athletics at all levels, amateur to elite. Prior to the commencement of skills training, there are four phases, in which, the purpose and nature of the task are determined, the athlete's current skill level is assessed, and the profile of strengths and weaknesses is considered in relation to the particular demands of the sport. The main aim of PST is for performers to develop skills, that will help them to get as close as possible to their peak performance on every occasion that

they compete; so it is important to examine the concept of peak performance.

Methods

The purpose of the study was to find out the effects of psychological skills training on selected psycho-physiological variables of male volleyball players. To achieve the purpose of the study twenty four male volleyball players were selected from PSG College of Arts and Science, Coimbatore. Their age was ranged from 18 to 25 years. The purpose of the present study was explained to them clearly where by their consent to serve as samples were obtained. The present study is an experimental one and to test the effects of varied forms of intervening strategies, the care was taken in distributing the samples to each experimental group. For this, the selected samples (N=30) were divided into two equal groups. Subjects were randomly assigned Group I underwent psychological skill training group and Group II control group. The subjects of Psychological Skills Training Group (PSTG) were treated with psychological skills training (imagery training and progressive muscle relaxation training) for about six weeks in addition to their physical training traditionally they practiced, whereas in the case of subjects of control group, they were allowed to practice only physical training practiced traditionally.

Research Instrument

Tool Used in the Study: *Competitive Sport Anxiety Inventory - 2*

Competitive state anxiety was assessed by using the Competitive State Anxiety Inventory - 2 (CSAI-2, Martens et al. 1990) which is a self report, psychometric state anxiety inventory, consisting of 27 items. The CSAI-2 normally takes less than five minutes to complete and was administered ten minutes before competition and practice session. Before allowing subjects to begin completing the CSAI-2, instructions were explained, and researchers ensured that all instructions were completely understood. State anxiety was measured by the Competitive State Anxiety Inventory - 2 (CSAI - 2) (Martens et al 1990). The CSAI – 2 assess two components of state anxiety, cognitive worry and somatic anxiety, and a related constricts self-confidence.

The CSAI - 2 contains 9 items that represent each sub - scale. Thus, each sub - scale has a range from 9 to 36. Higher scores on cognitive and somatic anxiety indicate higher levels of anxiety whereas higher scores on self – confidence sub – scale correspond to higher levels of self-confidence (Martens et al. 1990 and Mckay et al. 1997).

Resting Heart Rate

Stethoscope reading was used to measure the rate of the heart-beat per minute. The equipments used for this were stethoscope, score sheet and stop Watch. For the sake of accuracy, in this study, the resting heart rate was measured in the morning. The stopwatch was used to count the seconds for starting and ending the heart-beat counts. After every minute, when the stopwatch was stopped, both the subjects and investigator called out the number of beats counted by them simultaneously. There were five repetitions of such one-minute counts and the highest count was recorded as the subject's resting heart rate.

Blood Pressure

The method used to measure the systolic and diastolic blood pressure was relatively simple. The cuff of the sphygmomanometer was wrapped around the forearm above the elbow, with earphones of the stethoscope in the tester's ears. The bell of the stethoscope was placed on the brachial artery just above the hollow of the elbow. The cuff was pumped up until the artery collapses that was no pulse beat could be heard. Pressure was then slowly released as the tester watched the gauge or mercury column. When the first sound of the pulse was heard, the reading in millimeters of mercury at that instant was recorded as systolic pressure. The tester continues to release slowly pressure until a very dull, weak beat was noted. At that instant the pressure in millimeters of mercury was noted as diastolic pressure. The measure was recorded with the systolic pressure first and the diastolic pressure next.

Overall Playing Ability

The skill performance variables were assessed by a panel of three experts with great experience in the game of volleyball as judges for the rating of the skills. The average of the three scores was taken and recorded. The mean scores of the experts for each subject were recommended to determine the skill performance. During the play, all the skills were identified, and marks were given for overall performance with a maximum of ten marks. The three judges rating were collected to assess the average score as over all playing ability score.

Training Program

The psychological skills training programme was administered for thirty minutes each day before participation in their regular physical training during the morning session. Psychological skills training programme consisted of involving imagery training and progressive muscular relaxation training. Control group was not engaged in any type of psychological skills training other than regular training for volleyball game practice and fitness. The PST involved meeting with the volleyball players to provide the psychological skills training. The PST sessions were conducted six days a week six weeks in total.

Imagery Training

Imagery can be defined as a process by which sensory experiences are stored in memory and internally recalled and performed in the absence of external stimuli. The level of vividness defines imagery ability, and the controllability athletes have over their imagery. Vividness refers to the clarity and reality in the athlete's imagery. Controllability refers to the athlete's ability to influence the content of the image.

Construction and Execution of Imagery Script

For the imagery intervention, the imagery script was carefully prepared in English and Tamil. Ten minutes general imagery and fifteen minutes specific imagery script, relevant to each skill, were prepared under the supervision of the guide and the other experts with utmost care, taking into consideration the maximum inputs from the subjects. Attempts were made to make the script simple, clear and relevant as far as possible. Sequentially and systematically prepared script was recorded and the audio script was played to the subjects.

Subjects were asked to be in a comfortable position with eyes closed, and follow their breath in and out of their nose and allow their body to become very relaxed. After instruction and relaxation for 2 to 3 minutes, systematically recorded script was played to the subjects. The imagery training, by using imagery script, was played repeatedly five times, with short period of relaxation in between. Later, the subjects were asked to open their eyes and relax.

Imagery Script

Now, in order to begin, one needs to become very relaxed. Be in a comfortable lying position. Take three deep, slow

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breaths that will fill the lungs and chest with air, breath in….. and breath out….. breathe in….. breath out….. good, the mind was relaxed now, and ready to start our imagery session.

Visualize the routine in the dressing room and in the court. ….. See the uniform folded on the chair. ….. Imagine changing into warm ups. ….. can the smell of the clean jersey be felt….., hear the talk and noise of team mates….., and feel of pulling up kneepads and tying shoes. Visualize and feel on jogging with team around the court, stretching and ball handling. Create the images of shared on-court hitting the ball and then of each team attacking as a unit…... then leaving the court, changing into team uniform, and coming back to the bench….. then two minutes of serving, and hear the announcement of line ups and final instructions from the coach. ….. Finally, on the end line, hear the head official blow the whistle blow and feel moving onto the court…... Image the down referee checking the positions of the teams and the server holding the ball to begin the match.

Progressive relaxation Training

The volleyball players were comfortable with the breathing technique. It is systematic technique developed by Jacobson. A volleyball player is asked to inhale and tense a specific muscle group for approximately 7 – 10 seconds followed by releasing them for 15 – 20 seconds. The volleyball player then exhales and releases the tension from the specified muscle group, concentrating on the feelings of relaxation. This procedure is repeated for a number of muscle groups with each group begin tensed and relaxed three times. The muscle groups used with the volleyball team are listed.

The Muscle groups used in the Progressive Relaxation Exercise

Muscle Group	Instructions
Hand	Clench your left hand and feet the tension relax and let hand hang loosely. Same for right hand.
Wrists	Bend hand back, hyper extending your wrists relax.
Upper arms	Bend elbow towards your shoulders and tense biceps muscle relax.
Shoulders	Bring shoulders up toward yours ears. Relax, let your shoulders drop down.
Forehead	Wrinkle your forehead, raise your eyebrows relax.
Eyes	Close your eyes tightly relax.
Jaws	Clench your jaws tightly relax.
Tongue	Press your tongue against the roof of your mouth relax.
Mouth	Press your lips together tightly relax.
Neck	Turn your head so that your chin is over your right shoulder. Straighten and relax.
Neck and Jaws	Bend your head forward, pressing your chin against your chest. Straighten and relax.
Chest	Take a deep breath and hold it for 5 seconds, slowly exhale and relax.
Abdomen	Tighten your stomach muscles relax.
Back	Arch your back relax.
Thighs	Stretch your legs in front of you. Tighten your thigh muscles relax.
Hamstrings	Push your heels down into floor, tighten your hamstring muscles relax.
Calves	Point your toes toward your head relax.
Feet	Curl your toes toward the bottom of your feet relax.

STATISTICAL ANALYSIS

The present study to determine whether the training programmes produced significantly different improvements in selected variables after 6 weeks of training, the analysis of co-variance was used.

Results

The study was designed to find out the effects of psychological skills training on selected psycho-physiological variables of male volleyball players. The test the objective framed in the present study the data collected on variables cognitive anxiety, somatic anxiety, self confidence. resting heart rate, systolic blood pressure, diastolic blood pressure and overall playing ability.

ANALYSIS OF CO-VARIANCE ON SELECTED PSYCHO-PHYSIOLOGICAL VARIABLES AND OVERALL PLAYING ABILITY OF VOLLEYBALL PLAYERS

Variables	Source of variation	Sum of Squares	Degrees of freedom	Mean Squares	F-ratio
Cognitive anxiety	Between sets	55.50	1	55.50	17.94*
	Within sets	83.52	27	3.09	
Somatic anxiety	Between sets	67.48	1	67.48	17.78*
	Within sets	102.45	27	3.79	
Self confidence	Between sets	78.72	1	78.72	24.82*
	Within sets	85.64	27	3.17	
Resting heart rate	Between sets	53.37	1	53.37	21.76*
	Within sets	66.24	27	2.45	
Systolic blood pressure	Between sets	90.87	1	90.87	22.28*
	Within sets	110.40	27	4.07	
Diastolic blood pressure	Between sets	70.73	1	70.73	41.63*
	Within sets	45.87	27	1.69	
Overall playing ability	Between sets	61.80	1	61.80	94.34*
	Within sets	17.88	27	0.65	

*significant at 0.05 level (4.21)

In testing the adjusted means among the psychological skills training group and control group on criterion variables, the obtained F-ratios were: 17.94 (cognitive anxiety), 17.78 (somatic anxiety), 24.82 (self confidence), 21.76 (resting heart rate), 22.28 (systolic blood pressure), 41.63 (diastolic blood pressure), and 94.34 (overall playing ability). The obtained F- ratios on the above said criterion variables among the three groups were significant at 0.05 level as they exceed the required critical value (4.21 df 1, 27). Thus, the obtained results on adjusted means statistically confirm that differences exist after completion of treatment period on criterion variables among the two different groups namely PSTG and CG. It was concluded that the psychophysiological variables and skill performance variables influenced by the treatments used in the present study.

Discussion and Findings

In training and competition, players require specialized

psychological skills to overcome the psychological barriers such as mental fatigue, lack of motivation, motor and sensory retardation. When players are alert but relaxed, they can make better, quicker decisions during a match, whereas being an over anxious; player would often make incorrect decisions. Athletes when they realize that they can control their anxiety and free to play at their top level. Thus the need of today sports participants is acquiring the psychological skills. Having this thirst, the present study was formed to find out the effect of psychological skill training on selected psycho physiological and overall playing ability of volleyball players. For this collected data on psycho-physiological and skill performance variables from the volleyball players of both psychological skill training and traditional training group before and after training period were tested by analysis of covariance as the present study was underlie the pre-post randomized experiment design.

The results on comparative effects derived from the analysis of covariance corroborate the effects of psychological skill training positively over to the volleyball players of traditional training group on selected psycho physiological and skill performance variables such as cognitive anxiety, somatic anxiety and self confidence, heart rate, systolic blood pressure and diastolic blood pressure and overall playing ability. The source for such a significant changes on variables used in the study might have been the salient features of modules include in the psychological skill training used in the present study. The modules used in the psychological skill training are imagery training and progressive muscle relaxation training. Each one has its own entity in developing the psychological aspects of subjects. The influence of these on psycho-physiological variables and overall playing ability variables individually and collectively are discussed based on the theoretical and empirical constructs and presented as follows.

Psychological Skills Training (PST) used in the present study is a systematic one consisting psychological skills of goal setting, imagery, relaxation and self talk. As an integrated multi dimensional approach, PST is a valuable complement to physical training in sports. Recent advances in the applied sport psychology literature have seen an increase in the number of empirical studies supporting the positive influence of psychological skills training on sports performance (e.g., Rogerson & Hrycaiko, 2002). In the present study prior to the commencement of PST, its purpose and nature of the task were clearly explained to the volleyball players so as to reach its main aim of developing the psychological skills whereby made them to peak performance on every occasion as they compete.

In psychological skills training, as a basic force, goal setting was used as it helps to attain a specific standard of proficiency on a task, usually within a specified time (Gould & Weinberg, 1995). For effective goal setting instructions were given to the players as follows. Before setting the goal, they have been asked to set background of goal setting with their understanding, commitment to the sport, level they wanted to reach within the sport, knowing the skills that would have to be acquired and know where this would fit into their overall life goals. In addition to this, the players were instructed to the factors such as positive way of statement, be precise, set priorities, and make into written form and leap operational goals small. For this they have to concentrate on their previous experiences from their participations. These initial waves of scanning the anxiousness help the subjects to be a person of planning in time with the required means to set the goal that would enable them to be success during the training period and abduct the same in their competitive life also.

Conclusions

The following conclusions were drawn from the results of the study:-

Results on individualized effect confirms positively and significantly the effect of psychological skills training on psycho-physiological and skill performance variables of volleyball players who practiced with psychological skills training, in addition to their traditional physical training, and

From the results of comparative effects, it was observed that psychological skills training, used in the study, made desirable changes on psycho-physiological variables, compared to the volleyball players of Control Group. By this, it was concluded that the desirable changes observed on cognitive anxiety, somatic anxiety, self-confidence (psychological), systolic blood pressure, diastolic blood pressure and resting heart rate would be significant sources for performing better on skill performance variables as compared to the players of Control Group.

Reference

1. Adam R. Nicholls, Remco C. J. Polman. (2007). Stressors, Coping, and Coping Effectiveness among Players from the England Under-18 Rugby. ***Journal of Sport Behavior,*** 30, 119–218.
2. Gould, D., & Weinberg, R. Foundations of Sport and Exercise Psychology. Human Kinetics, (1995) pg. 247-249.
3. Gould, Daniel and Udry, Eileen. (1994). Psychological skills for enhancing performance: arousal regulation strategies. ***Medicine and science in sports and exercise***, 26 (4), 478-485.
4. Greenspan, M. J. & Feltz, D. L. (1989). Psychological interventions with athletes in competitive situations: a review. ***The Sport Psychologist,*** 3(3), 219 - 236.
5. Robert L. Woolfolk, Mark W. Parrish and Shane M. Murphy. (1985). The effects of positive and negative imagery on motor skill performance. ***Cognitive Therapy and Research,*** 9(3), 335-341.
6. Rogerson, L. R., & Hrycaiko, D. W. (2002). Enhancing competitive performance in ice hockey goaltenders using centering and self-talk. ***The Journal of Applied Sport Psychology,*** *14,* 14-26.
7. Roure, R; Collet, C; Deschaumes-Molinaro, C; Dittmar, A; Rada, H; Delhomme, G Vernet-Maury, E. (1998). Autonomic nervous system responses correlate with mental rehearsal in volleyball training. ***Journal European Journal of Applied Physiology***. Volume 78, Number 2 / June, 99-108.