Research Paper

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The Effect of a Specific Pre Season Training Package on Volleyball Playing Ability.

PHYSICAL EDUCATION

KEYWORDS : Pre-season Training Package, Brady Volleyball test

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ABSTRACT

The purpose of the study was to find out the effect of a pre-season training package on volleyball playing ability. In total 100 numbers of students were taken as subjects and were divided equally (50 each) into two groups namely Experimental and Control groups. Pre tests on physical fitness variable was conducted prior to pre season training package to the experimental group and post test was made after a 4 week, 8 week, and 12 week treatment and comparisons were made between and within the groups and statistical analysis was made by using Analysis of Variance prescribed in Mixed Model Least-Squares and Maximum Likelihood Computer Program Pc-2 as programmed by Walter R. Harvey.

Introduction:

The year around Training programmes of players are divided into three phases namely pre-season, in-season and off-season (Bower & Fox 1992). Pre-season training phase is the period eight to ten weeks prior to competition in which training programmes are designed to increase the capacities of the energy systems to a maximum extent that are predominant when performing a specific event. The pre-season training is the base creation for better performance in the competition (Singh 1991). The various performance factors are developed sequentially in this period. This programme should lead to a gradual improvement in physical fitness with the peak being reached during the season. Hilsendager *et.al.* (1969) in their study, 83 male University subjects were divided into five groups with one group each participating in exercises designed to improve agility, speed, strength and the remaining group participating in lectures. Thirty one tests were administered before and after participation in the 6 week programme, and the data were analyzed by the analysis of covariance technique. The group participating in agility exercises demonstrated statistically significant superiority over one or more of the other groups on four of the seven agility tests. The only other groups which demonstrated superiority on any of the agility tests were the speed groups, thereby leading to the conclusion that agility can best be developed in programmes designed specifically for that purpose and consequently that a unique factor of agility does exist. The purpose of the study was to find out the effect of a pre-season training package on volleyball playing ability.

Methodology: *The Subjects: Total 100 (One hundred) numbers of Boys were taken as subjects of the study. All the subjects were physical education professional students belonging to C.P.Ed. and B.P.Ed. Classes of Baliapal College of Physical Education. Their age group was ranging from 19 to 27 years.*

Sampling:*On the basis of random sampling, conducted in the classes students (volleyball players participated in college intramural competitions) were selected for the study. They were assigned into two equal groups numbering 50 in each group. The groups were categorized as; 1. Experimental Group and 2. Control Group.*

Research Design: *The investigator adopted experimental method of research to ascertain the effect of a specific preseason training package on physical fitness variables of volleyball players of college level.*

Reliability of Data: *The reliability of data was measured by ensuring instrument precision, tester and subjects' competency.*

Dependant Variable*: Volleyball playing ability***: Brady Volleyball test:** *Measurements above variable were taken during pre and post tests (after 4 weeks, 8 weeks and 12 weeks) and standard methods were followed to procure the data.*

Independent Variables: *The training stimuli i.e., Specific Pre-Season Training Package was considered here as the Independent variable.*

Instrumentations and Administration of Dependant Variables:

1. Volleyball Playing Ability:

Brady Volleyball Test

A volleyball test has been proposed by George F. Brady as a measure volleyball playing ability for college men. In this test a simple target is marked on a smooth side wall consisting of a horizontal calk line, 5ft. long and $11\frac{11}{22}$ ft. from the floor very tactical lines are extended upward and towards the ceiling at the ends of the horizontal line. In the test the subject stands where he wishes and throws the ball against the wall, he then volleys it as many times is possible in one minute. In legal volleys are counted that is; they must be volleys not thrown ball, and they must hit the wall within the boundaries of target. If the ball is caught and gets out of control it is started again as at the beginning of the test.

A reliability coefficient of 0.93 was found between repeated tests by the subjects during the same testing period. For validity, a coefficient of 0.86 is reported between scores on the test and the combined judgment of four qualified observers.

ADMINISTRATION OF THE TEST:

Construction of Specific Pre-Season Training Package

A training package, includes conditioning exercises , physical activities , drills and tactical maneuvers which was designed systematically and scientifically . The package was a comprehensive and thorough one which was supposed to improve the physical fitness. Based on the literature available and the opinion of the experts the following training details were determined for the specific training package .

Periodisation :Double periodisation

Duration of training period :12 weeks

Number of days per week :6 days
Number of sessions per day :2 sessions
Duration of session :Morning – 120 minutes ,Evening - 120 minutes

LOAD PROGRESSION

The principle of progression of load was adopted. The load dynamics was arranged in such a way that the volume increased initially and intensity increased in the end. The load during the micro cycle was high and medium alternatively and high during the last two days before a complete rest day .

TRAINING MEANS AND METHODS

The following means and methods were adopted for the development of various performance factors during the training .

Speed	Interval training and hollow sprints
Strength	Weight training and Plyometric Training
Agility	Calisthenics
Flexibility	Stretching exercises
Endurance	Circuit training, Fartlek training, Cross country
Explosive power	Plyometric training.

The statistical analysis of the data collected were being analyzed by using Analysis of Variance prescribed in Mixed Model Least-Squares and Maximum Likelihood Computer Program Pc-2 as programmed by Walter R. Harvey. The obtained results were tested at 0.05 level of confidence, since it was considered adequate for the purpose of the study.

Table. I. Least-Squares Mean and Standard Error of Parameter on Playing Ability Test through 12 Weeks Period in Experimental Group of Volleyball Players (N-50)

VARIABLES	PRE-TEST	POST-TEST (4 WEEKS)	POST-TEST (8WEEKS)	POST-TEST (12 WEEKS)
Brady Volleyball Test CD Value-0.49	3.70±0.17a	4.48±0.17b	5.70±0.17c	7.42±0.17d

Different super scripts differ significantly (p≤0.05) in columns

The table 1 indicated the least-squares mean and standard error of parameter on playing ability test through 12 weeks period in experimental group of volleyball players. The CD (Critical Difference) value of independent variable was calculated and cited along with variable. The least squares mean obtained for the variable in pretest and posttests (4wk., 8wk., & 12wk.) was being calculated and differences found were reported.

In **Brady Volleyball Test** it was observed that pretest least squares mean was 3.70 where as posttest least squares means for 4 week, 8 week, and 12 week were 4.48, 5.70 and 7.42 respectively (Fig 1). The calculated CD value was 0.49. Thus, it was analyzed that there was a significant difference existed at .05 level of confidence between pretest and posttests of 4 weeks, 8 weeks, and 12 weeks based on obtained CD value of Brady Volleyball test. Therefore, it can be presumed that the specific pre season training programme for 12 weeks duration for volleyball players was effective and it enhances the volleyball playing ability of the players significantly.

Table 2 Least Squares Mean and Standard Error of Pre And Post Tests of Control Group on Parameters Pertaining to Playing Ability of Volleyball Players (N=50)

VARIABLE	Pre-Test	Post-Test (12 weeks)	calculated 't' value
Brady Volleyball Test	4.10±0.22	4.58±0.22	1.53

No significant difference exist between Pre-test and Post-test at (p≤.05)

The table 2 indicated the least-squares mean and standard error of parameter on playing ability test through 12 weeks period in experimental group of volleyball players. The't' value of all independent variables were calculated and cited along with variables. The least squares mean obtained for all the variables in their pretest and posttests (12wk.) were being calculated and differences found were reported.

In **Brady Volleyball Test** of the control group it was observed that pretest least squares mean was 4.10 where as posttest least squares means for 12 week was 4.58 (Fig 2). The calculated 't'value was 1.53. Thus, it was analyzed that there was no significant difference existed at .05 level of confidence between pretest and posttests of 12 weeks based on't'value of Brady Volleyball test.

Table 3 Least-Squares Analysis of Variance of for Specific Pre-Season Training Package Group in Brady Volleyball Test (Experimental Group)

Variables	Source of Variation	DF	Sum of Squares	Mean Squares	F
Brady Volleyball Test	Treatment	3	394.22	131.4	85.95*
	Residual	196	299.66	1.528	

*SIGNIFICANT AT 0.05 LEVEL Table value for df 3 and 196 was 2.60

The observed 'F' values (Table- 3) of the experimental group on the criterion measures were 85.95 (Brady Volleyball Test), and was significant at 0.05 level of confidence. Since the observed 'F' values were greater than the table 'F' value for the df 3/196 i.e., 2.60, it was concluded that the changes occurred across the treatment period was statistically significant.

Table 4 Least-Squares Analysis Of Variance Of Dependant Variables (Control Group)

Variables	Source of Variation	DF	Sum of Squares	Mean Squares	F
Brady Volleyball Test	Treatment	1	5.76	5.76	2.35
	Residual	98	240.68	2.45	

Table value for df 1 and 98 was 3.92

The observed 'F' values (Table- 4) of the control group on the criterion measures were 2.35 (Brady Volleyball Test), and was not significant at 0.05 level of confidence. Since the observed 'F' values were less than the table 'F' value for the df 1/98 i.e., 3.92, it was concluded that the changes occurred across the 12 week period was statistically not significant.

DISCUSSIONS ON THE FINDINGS

The results of the study indicated that the volleyball playing ability of the subjects of the experimental group improved significantly after undergoing the specific pre-season training package programme for a period of 12 weeks. The changes in selected parameters were attributed to the proper planning, preparation and execution of specified pre-season training package to the players.

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The result of the study showed that there was a significant difference existed at .05 level of confidence between pretest and posttests of 4 weeks, 8 weeks, and 12 weeks in **Brady Volleyball test**, which measures volleyball playing ability.

Therefore, it can be presumed that the specific pre season training programme for 4 week/ 8 week or 12 weeks duration for volleyball players was effective and it enhances the volleyball playing ability of the players significantly. The improvement was due to the specific exercises specially designed to develop the various skills of the volleyball game. Also it could be resumed that the development in physical fitness components of the subjects of the experimental group by participating in specific pre season training package might have helped to gain playing ability of the subjects in volleyball. It had also been observed that the development of playing ability occurred after 4 week, 8 week and 12 week duration of the programme. But 12 week participation in the specific pre-season training package had marked maximum gain on the playing ability, which was appropriate for the purpose.

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