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Effect of strength training on physical fitness variables of intercollegiate volleyball players

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Abstract

Background: The aim of this study was to determine the effect of strength Training on physical fitness variables of intercollegiate volleyball players.

Methods: The subject was selected thirty intercollegiate volleyball players from three difference college's level volleyball players from Salem district, Tamilnadu. Subject's age ranged from 18 to 24. Totally (N = 30) were randomly assigned to two equal groups of intercollegiate volleyball players. The groups were named as Strength Training group and control group. Upper Extremity Strength was measured by bench press and Lower Extremity Strength was measured by Half Squat. The training group had undergone the training for a period of eight weeks and the post-tests were conducted after the training period.

Results: Hence the difference between means of the two groups in the pre-test had to be taken into account after the analysis of the post-test differences between the means. Paired 't' was applied, to test the obtained results on variables, level of significance 0.05 was chosen and considered as sufficient for the study. This Strength Training group had significant difference on Upper Extremity Strength and Lower Extremity Strength of intercollegiate volleyball players.

Keywords: Strength Training, physical fitness variables, Volleyball players

Introduction

Strength exercises

The strength Training involved in playing volleyball will strengthen the upper body and lower body as well as the muscles of the thighs and lower legs. Playing volleyball also tones and strengthens the cardiovascular and respiratory systems. Improved circulation circulates more blood, oxygen and nutrients throughout the body, improving the body's functions and your overall health and well-being.

Volleyball is a sport dominated by strength and power. Players need power in their legs to get high in the air and strength in their upper body to spike, block, and dig balls. Strengthening volleyball-specific muscles ensures that athletes are able to reach their maximum performance potential. Passing is often thought of as the most important skill in volleyball. If you can't pass the serve, then you won't ever put your team in a position to score a point. The importance of passing, volleying and serving is often undervalued.

The purpose of the strength Training is to increases the skills movements and physical fitness variables of volleyball players. They are six basic fundamental volleyball skills are passing, setting, spiking, blocking, digging, and serving. As player skills improve, standards increase. This is key if you want to have highly successful volleyball teams. As physical fitness improves, the player's expectation will increase. As a player learns, they will start to expect to be more successful. Learning is fun, as physical fitness level improves, players will naturally try to improve their physical fitness level. This is a cycle that will never stop. As long as physical fitness and skill performances level is improving, players will never become "burned out". It's natural to never be satisfied. As long as the athlete believes and expects to improve, they will continue to always experience more success.

Methodology

The aim of this study was to determine the effect Strength Training on Physical Fitness Variables of intercollegiate Volleyball Players. To achieve the purpose of this study, thirty

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intercollege volleyball players from three difference college’s level volleyball players, Salem, Tamilnadu were selected as subject at purpose random and their ages ranged from 18 to 24 years. The subjects were divided into two equal groups of fifteen volleyball players each group. The study was formulated as a purpose random group design, consisting of a pre-test and post-test. The groups were assigned as Strength Training group and control group in an equivalent manner. The experimental group participated the training for a period of Eight weeks training to find out the outcomes of the training packages and the control group did not participated in any training programmer. Paired ‘t’ test

was applied. In this research done all cases 0.05 level of confidence was fixed to test hypotheses.

Table I: Variables and test items

S. No	Variables	Test
1	Upper Extremity Strength	Bench press
2	Lower Extremity Strength	Half squat

Result

Table II: Significance of Mean Gains & Losses between pre and post test Scores on Selected Variables of Strength training Group (STG)

S. No	Variables	Pre-test mean	Post-test mean	Mean difference	Std error Dm	‘t’ Ratio
1	Upper Extremity Strength	6.86	7.80	0.93	0.26	3.50*
2	Lower Extremity Strength	5.80	6.33	0.53	0.13	4.00*

* Significant at 0.05 level

Table II shows the obtained ‘t’ ratios for pre and post-test mean difference in the selected variables of Upper Extremity Strength (3.50) and Lower Extremity Strength (4.00). The obtained ratio when compared with the table value of 2.14 of degrees of freedom (1.14) it was found to

be statistically significant at 0.05 level of confidence. It was observed that the means gain and losses made from pre and post-test were significantly improved in physical fitness variables of Upper Extremity Strength (0.93, p<0.05) and Lower Extremity Strength (0.53, p<0.05).

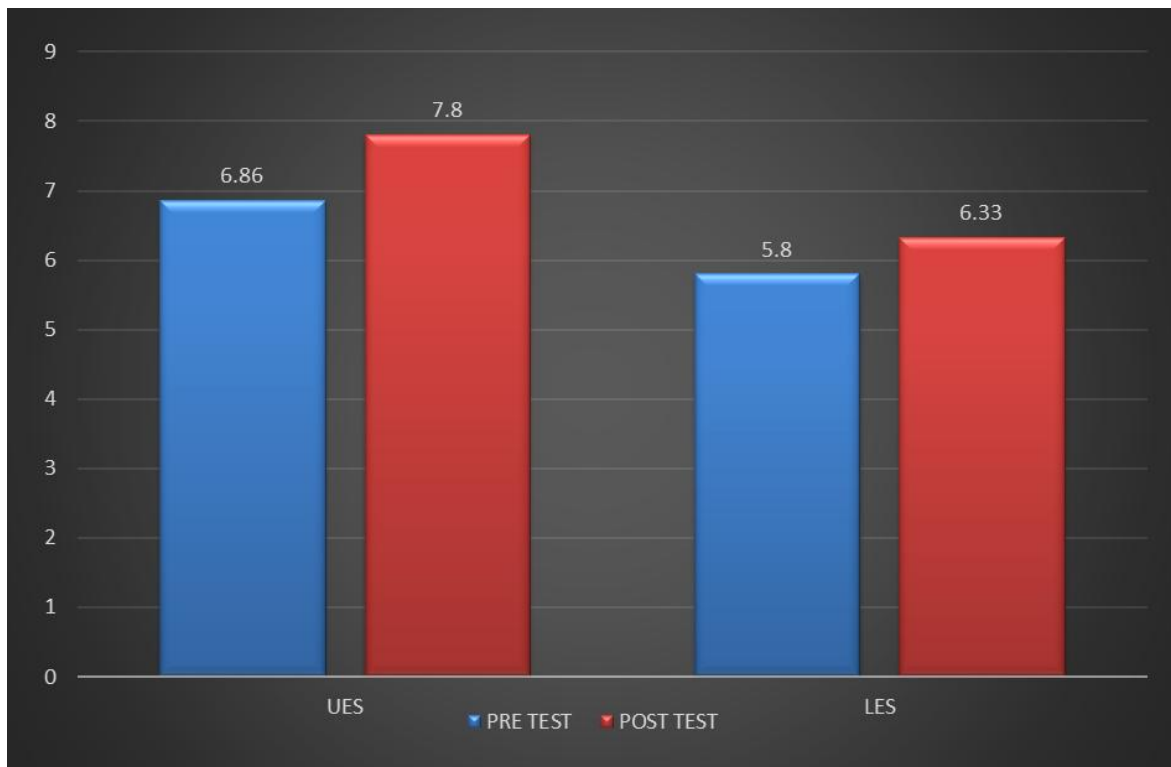


Fig I: Shows the Pre and Post Mean Values of Experimental Group on Selected Variables

Table III: Significance of Mean Gains & Losses between pre and post test Scores on Selected Variables of Control Group (CG)

S. No	Variables	Pre-test mean	Post-test mean	Mean difference	Std error Dm	‘t’ Ratio
1	Upper Extremity Strength	6.86	6.80	0.66	0.66	1.00
2	Lower Extremity Strength	5.80	5.73	0.66	0.15	0.435

* Significant at 0.05 level

Table III shows the obtained ‘t’ ratios for pre and post-test mean difference in the selected variables of Upper Extremity Strength (1.00) and Lower Extremity Strength (0.435). The obtained ratio when compared with the table value of 2.14 of degrees of freedom (1.14) it was found to

be statistically significant at 0.05 level of confidence. It was observed that the means gain and losses made from pre and post-test were significantly improved in physical variables of Upper Extremity Strength (0.66, p<0.05) and Lower Extremity Strength (0.66, p<0.05).

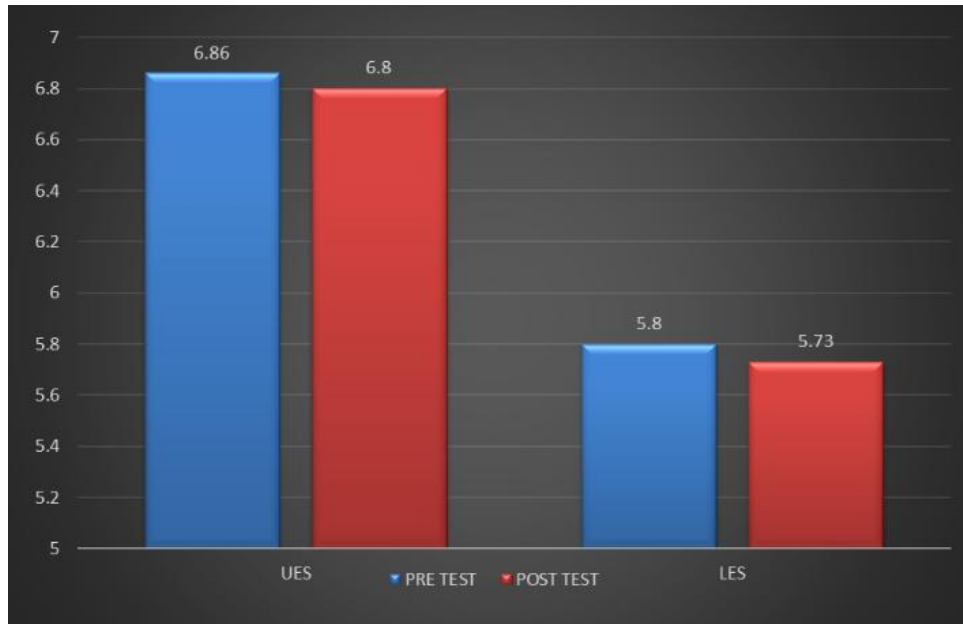


Fig II: Shows the Pre and Post Mean Values of Control Group on Selected Variables

Results

Findings of the Study

The result of the study indicates that the experimental group as namely Strength Training had significantly improved the upper extremity strength and lower extremity strength had significantly improved after eight week training. It is also found that the improvement caused by Strength training was better when compared the control group.

Conclusions

From the analysis of the data, the following conclusion was drawn:

- The Strength Training group had shown significant improvement in all the selected physical fitness variables among intercollegiate volleyball players after undergoing Strength training group for a period of eight training.

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