



Effects of Weight Training Programmes on Volleying Skill Performance of College Volleyball Players

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ABSTRACT

The aim of research is to determine the effect of weight training programmes on Volleying Skills of College Volleyball Players. Thirty Six subjects were randomly assigned to three equal groups of 12 subjects and they were College Volleyball Players who were studying in Degree Colleges affiliated to Karnataka University, Dharwad, Karnataka, India. Three groups were assigned into Experimental Group-I (WRE) acted as Weight Training group practicing resistance exercises with own body weight; Experimental Group-II (WRES) acted as Weight Training Group practicing resistance exercises with weights along with specific skills and Group-III (CG) acted as control group. The Pre test scores on Volleying Skills were conducted for all the subjects by administering Brady wall Volleying Test in points. Experimental groups practiced weight training for the period of 12 weeks. The post test mean scores of volleying skills were collected after the treatments. ANOVA and ANCOVA were used to determine the significant mean scores for volleying skills. By using LSD post hoc test where the obtained F value was found significant. The level of significance was fixed at 0.05 level.

Keywords: Weight Training, Resistance Exercises, Skills, Performance, Volleying, Weight, Volleyball Players.

I. INTRODUCTION

Weight and strength training can be performed in a controlled, supervised environment. This can be helpful to children of all athletic abilities safely improve their physiological, physical and performance abilities. Children who establish regular exercise habits will ideally continue them into adulthood. Weight training is doing exercise, using resistance (normally weights) to build muscle strength and endurance. It is use of resistance other than the weight of the body to develop specific areas of the body. Generally, it is used to develop explosive power. In this training can use weights like dumbbells, bar bells, pulley machines or simply

one's own body weight as resistance. Exercises should be identified that will produce the desired development. Although specificity is important, it is necessary in every schedule to include exercises of a general nature example bench press, back squats, sit ups, shoulder press, chest press, lower back extensions, triceps press, calf raise, leg curls, etc.

The volleyball players make jumps frequently during a game either for spiking or blocking. These two are the key factor for scoring a point in volleyball. This study would clearly show whether volleyball specific plyometric training would improve or maintain standing vertical jump with double leg takeoff and three stride vertical jump with double leg takeoff. To compete at one's very best in volleyball; one needs to build the appropriate serving, spiking and blocking, individual defensive skills, individual tactics, offensive combination and defensive combination. However, it is often assumed that those blessed arc born with a higher percentage of fast-twitch muscle fibers, great speed or strength, and having trained and mastered in skills.

Kitamura et al. (2020) confirmed that skill practice with strength training produced greater improvements in skill performance of Volleyball players. Praveenakumar; Gnanaraj & Muthuraj (2020) concluded that twelve weeks of strength training had an impact to increase explosive power. Alwan & Obaid (2020) The 12 Weeks of training period showed positive impact on the development of explosive power of the legs for young players. Therefore weight training is more useful to development of motor fitness of Volleyball players. Hence, in this research is to identify the effect of weight training programmes on Volleying Skill Performance of College volleyball players.

II. PURPOSE OF THE STUDY

The intention of this investigation is to know the effect of Weight training programmes on Volleying Skill Performance of College Volleyball Players.

III. STATEMENT OF HYPOTHESIS

It was hypothesized that there would be significant changes in the Volleying Skills Performance of experimental groups by practicing weight training programmes.

IV. METHODOLOGY

The aim of research is to determine the effect of weight training programmes on Volleying Skills of College Volleyball Players. Thirty Six subjects were randomly assigned to three equal groups of 12 subjects and they were College Volleyball Players who were studying in Degree Colleges affiliated to Karnatak University, Dharwad, Karnataka, India. Three groups were assigned into Experimental Group-I (WRE) acted as Weight Training group practicing resistance exercises with own body weight; Experimental Group-II (WRES) acted as Weight Training Group practicing resistance exercises with weights along with specific skills and Group-III (CG) acted as control group. The Pre test scores on Volleying Skills were conducted for all the subjects by administering Brady wall Volleying Test in points. Experimental groups practiced weight training for the period of 12 weeks. The post test mean scores of volleying skills were collected after the treatments. ANOVA and ANCOVA were used to determine the significant mean scores for volleying skills. By using LSD

post hoc test where the obtained F value was found significant. The level of significance was fixed at 0.05 level.

V. ANALYSIS OF THE DATA

The findings pertaining to analysis of covariance between experimental groups and control group on Volleying Skills of College Volleyball players for pre, post, and adjusted post tests scores respectively.

Table-1. ANCOVA for the pre-test and post-test data on Volleying Skills (In Points) of Weight Training practicing of resistance exercises with own body weights (WRE), Weight Training practicing resistance exercises with weights and skill practice Group (WRES) and Control Group (CG).

| Tests | | CG | WRE | WRES | Source Variance | df | Sum of square | Means square | 'F' ratio |
|--------------------|--------------------|--------|--------|--------|-----------------|----|---------------|--------------|--------------------|
| Pre-test | Mean | 35.333 | 34.166 | 32.833 | Between Group | 2 | 37.556 | 18.778 | 0.36 ^{NS} |
| | Standard Deviation | 10.890 | 4.468 | 4.448 | Within Group | 33 | 1742.000 | 52.788 | |
| Post-test | Mean | 33.500 | 39.666 | 42.416 | Between Group | 2 | 500.389 | 250.194 | 15.56* |
| | Standard Deviation | 2.907 | 4.097 | 4.795 | Within Group | 33 | 530.583 | 16.078 | |
| Adjusted Post-test | Mean | 33.384 | 39.661 | 42.538 | Contrast | 2 | 515.505 | 257.752 | 16.02* |
| | | | | | Error | 32 | 514.860 | 16.089 | |

Table value at 0.05(df-2, 33/32)=3.32; *Significant at 0.05 level; ^{NS}Not Significant

The above table shows the pre-test mean values of Volleying Skills of CG, WRE and WRES are 35.333, 34.166 and 32.833 and standard deviations are 10.890, 4.468 and 4.448 respectively. The obtained 'F' ratio of 0.36 for pre-test mean of volleying skills is less than the table value 3.32 for df 2 and 33 required for significance at 0.05 level. This indicates insignificant difference in the pre test scores of volleying skills among the groups.

The above table also shows post-test mean values of volleying skills of CG, WRE and WRES are 33.500, 39.666 and 42.416 and standard deviation are 2.907, 4.097 and 4.795 respectively. The obtained 'F' ratio of 15.56 on post-test mean of volleying skills is greater than the table value 3.32 for df 2 and 33 required for significance at 0.05 level.

Further, the above table shows the mean value of volleying skills of CG, WRE and WRES are 33.384, 39.661 and 42.538 respectively. The obtained 'F' ratio of 16.02 on adjusted post-test mean scores of Volleying Skills is greater than the table value 3.32 for df 2 and 32 required for significance at 0.05 level. This indicated that there was a significant difference in adjusted mean scores of Volleying Skills of College Volleyball Players. Since significant F ratio was obtained, the result related to volleying skills is further subjected to post hoc analysis by using LSD test and results presented in Table-2.

Table-2. LSD Post Hoc Analysis Results on Volleying Skills (In Scores) of college Volleyball players among control and experimental groups (CG, WRE and WRES).

| Adjusted post-test mean scores of volleying skills | | | Mean Difference | Critical Difference |
|--|--------|--------|-----------------|---------------------|
| CG | WRE | WRES | | |
| 33.384 | 39.661 | × | 6.277* | 3.219 |
| × | 39.661 | 42.538 | 2.877 | |
| 33.384 | × | 42.538 | 9.154* | |

*Significant at 0.05 of confidence.

The table-2 shows that the adjusted post-test mean difference on Volleying Skills between CG & WRE; and CG & WRES groups are 6.277 and 9.154 respectively which are higher than the critical difference of 3.219 at 0.05 level of confidence, but the mean difference on volleying skills between WRE & WRES groups was 2.877 which was lesser than the critical difference of 3.219 at 0.05 level of confidence. The finding concludes that there was significant difference on Volleying Skills of college volleyball players between CG and WRE; & CG and WRES and also insignificant difference exists between WRE and WRES groups. Resistance Exercises with Weights and Skills Practice group had developed more volleying skills when compared with Resistance Exercises with own body weights training group.

The comparison of pre, post and adjusted post-test mean scores of Volleying Skills of college Volleyball players among control and experimental groups are graphically depicted in Fig.1.

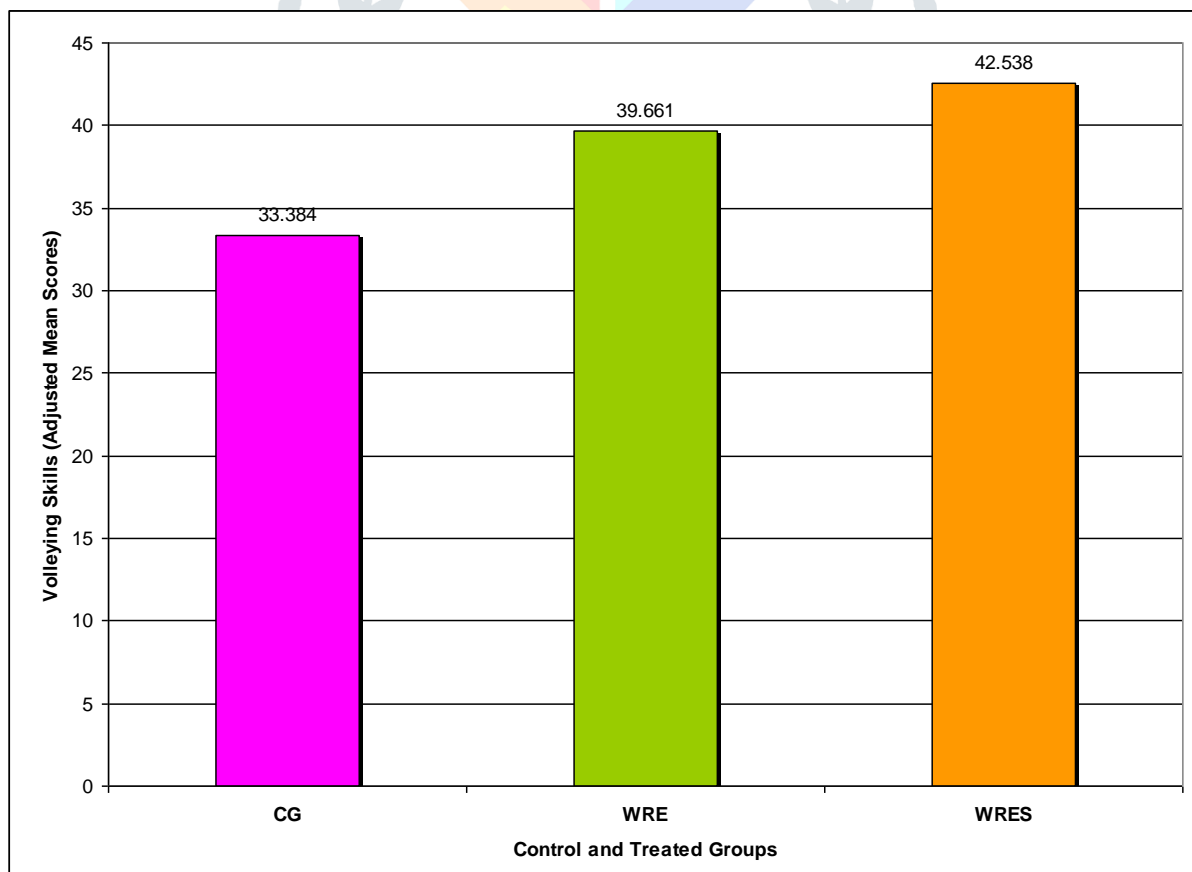


Fig.1: Bar diagram of Pre, Post and Adjusted Post-test Mean scores on Volleying Skills among control and experimental groups.

VI. DISCUSSIONS ON FINDINGS

The finding of the study shows that there exists significant difference in the Volleying Skills of experimental groups by weight training by practicing of resistance exercises with own body weight and weight training by practicing of resistance exercises with weights and skill practice. The pre and post (12 weeks duration) tests mean scores of volleying skills have been found significantly higher in experimental groups when compared to control group. The resistance exercises with weights along with skill practice is most appropriate for developing volleying skills when compared with resistance exercises with own body weights of college volleyball players. This is possible because due to regular practice of resistance exercises and volleyball specific skills practice for 12 weeks. The supportive results found by Kitamura et al. (2020) and Parimalam and Pushparajan (2014) found significant improvement in skill ability/performance on volleyball players after the strength training programme.

VII. CONCLUSION

It was concluded that both weight trainings programmes showed positive impact on developing skills of volleying of college volleyball players. Weight training practicing resistance exercises with weights as well as volleyball skills practice showed higher achievement but not proved by statistics.

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