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

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Abstract
This study was investigated the impact of strength training on physical fitness variables of women volleyball players. To achieve the purpose of the study 40 women volleyball players were selected from Navarasam college, Coimbatore district. The subjects was randomly assigned to two equal groups (n=20). Group- I underwent strength training (TST) and group - II was acted as control group (CG). The traditional training was given to the experimental group for 3 days per week (Monday, Wednesday and Friday) for the period of twelve weeks. The control group was not given any sort of training except their routine work. The physical parameters of muscular strength endurance (sit-ups) before and after training period. The data collected from the subjects was statistically analysed with 't' test to find out significant improvement if any at 0.05 level of confidence. The result of the present strength training significantly improved muscular strength endurance and of women volleyball players.

Keywords: Traditional training, leg explosive power, muscular strength endurance and women volleyball players

Introduction
The great thought of physical education is not the education of the physical nature, but the relation of physical training to complete education, and then the effort to make the physical contribute its full share to the life of the individual". Training is series of physical activities executed for the purpose of increasing efficiently in running and it should be continued throughout an athlete's life time. The specific physical fitness that permits a faster time acquired most efficiently through scientifically tailored schedule to the length and anticipated speed of the racing distance. Strength training is a specialized process of the physical perfection of the content of which is the planned preparation foretop class performance in the event or discipline chosen on the basis of evaluation and training. For improving the standard of play in the field of sports, conditioning exercise play a prominent role. Exercise builds confidence, physical and mental abilities. Cultivates power of will and determination and promotes personal efficiency and a number of position mental characteristics. According to "Fitness" magazine. In this type of traditional training move such as squats is immediately followed by a cardio move such as sprinting the length of a volleyball court, followed by another strength move such as push-ups. This training can be a total body workout, by including a strength move for each of the major muscle groups.

Methodology
In this study the selected 40 women volleyball players selected from Navarasam college, Coimbatore district. The subjects were randomly assigned in to two equal groups namely, strength training (TTG) (n=20) and Control group (CG) (n=20). The respective training was given to the experimental group the 3 days per weeks (alternate days) for the training period of twelve weeks. The control group was not given any sort of training except their routine. The evaluated physical parameters were muscular strength endurance was assessed by sit-ups the unit of measurements was in counts.

Training programme

The training programme was lasted for 60 minutes for session in a day, 3 days in a week for a period of 12 weeks duration. These 60minutes included 10 minutes warm up, 40 minutes for strength training and 10 minutes and warm down. The equivalent in mobile surface strength training is the length of the time each action in total 3 day per weeks (Monday, Wednesday and Friday).

Statistical analysis

The collected data before and after training period of 12 weeks on the above said variables due to the effect of traditional training was statistically analyzed with 't' test to find out the significant improvement between pre and posttest. In all cases the criterion for statistical significance was set at 0.05 level of confidence. (p<0.05)

Table 1: Computation of 't' ratio on selected physical parameters on experimental group and control group (Scores in numbers)

Group	Variables		Mean	N	Std. Deviation Pre	Std. Deviation Post	T ratio
Muscular Strength	Experimental Group	Pre test	23.73	20	1.27	1.18	12.58*
		Post test	26.53	20			
	Control Group	Pre test	23.73	20	1.27	1.29	1.00
		Post test	23.66	20			

*significant level 0.05 level degree of freedom (2.09, 1 and 19)

Table I reveals the computation of mean, standard deviation and 't' ratio on selected physical parameters namely muscular strength experimental group. The obtained 't' ratio on muscular strength were 12.58 respectively. The required table value was 2.09 for the degrees of freedom 1and 19 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 physical parameters namely muscular strength control group. The obtained 't' ratio on muscular strength were 1.00 respectively. The required table value was 2.14 for the degrees of freedom 1and 19 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.

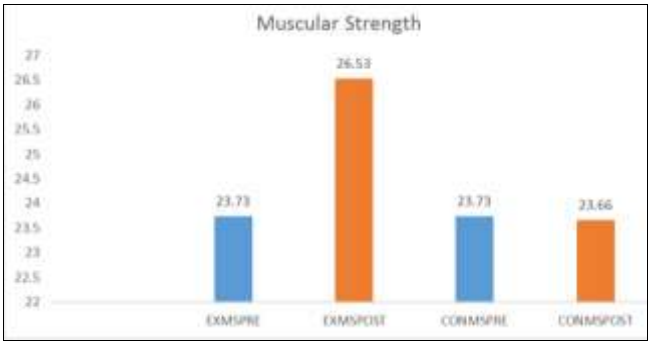

Fig 1: Bar diagram showing the mean value on muscular strength of volleyball players on Experimental and Control group (Scores in numbers)

Discussion and findings

The present study experimented the effect of strength training on physical parameters of women volleyball players. The result of the study shows that the strength training improved the muscular strength endurance. The findings of the present study had similarity with the findings of the investigations referred in this study. However, there was a significantly changes of subjects in the present study the muscular strength endurance was significantly improved of subject in the group may be due to the in traditional training. Sheppard, *et al.*, (2012) [4] assisted jumping on vertical jump height in high-performance significantly improvement of volleyball players. Perrier *et al.*, (2008) [3] reported that Athletes in sports requiring lower-extremity power should use stretching techniques in warm-up to enhance explosive power while improving performance.

The result of the present study indicates that the traditional training programme is effective method to improve muscular strength endurance and leg explosive power of volleyball players.

Conclusions

It was concluded that 12 weeks of strength training significantly improved the muscular strength of women volleyball players.

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