



COMPARATIVE EFFECT OF DIFFERENT DURATIONS OF WARMING UP ON THE SELECTED PHYSICAL FITNESS COMPONENTS OF VOLLEYBALL PLAYERS

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Abstract:

The purpose of the study was to determine the effects of warming-up of different duration on selected Physical Fitness Components of volleyball players. Twenty male volleyball players of degree college Budgam were selected for the purpose of the study. The ages of the selected subjects were ranging from 18 to 25 years and their status was intercollegiate level. The data were collected on the selected subjects by administering vertical jump in cm, sit and reach test in centimeters, 4x10 yards shuttle run in seconds, eye hand and eye leg co-ordination in seconds. The selected test items were administered for four days preceded after no warm-up on the first day, 5 minutes warm up on the second day, 10 minutes warm up on the third day and 15 minutes warm up on the fourth day. One way analysis of variance as well as Scheff's post hoc test were employed to assess the significant difference among the means. The result of the study showed that the significant difference were found in the cases of explosive leg strength and flexibility, whereas no significant differences were found in the cases of agility, eye hand coordination due to the different duration of warming-up programme.

Keywords: volleyball players; warming up duration; Physical Fitness Components

1. Introduction

Human body can be compared with a car engine in respect to warm-up. It is well known that the car engine function at a temperature above that a normal garage condition and this temperature is attained by letting the engine run for a few minutes

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before driving, that is by allowing it to warm up. Similarly athlete often feels that performs better after ha has been warming-up. A major discussion concerns with the use of some type of warm up procedures before engaging in the physical activity. The physical educator and the coach should be familiar with the available evidence before determining whether or not to use the warm up or how to use it most effective one. Therefore, the scholars attempted to find out the effect of different duration of warm up on the selected physical fitness components of volleyball players.

2. Procedure

Twenty male volley ball players of Degree College of education Budgam were selected for this study. Age was ranging from 18 to 25 years. The status of those players was intercollegiate level. The data pertaining to the study were collected on explosive leg strength through vertical jump, trunk flexibility by sit and reach test, speed and agility through 4x10 yards shuttle run, coordination between eye hand and eye foot were measured by eye hand and eye foot coordination test. The selected test items were administered for four days preceded after no warm-up on the first day, 5 minutes warm up on the second day, 10 minutes warm up on the third day and 15 minutes warm up on the fourth day respectively during the morning session only.

3. Analysis of Data

The collected data were examined by using one way of variance statistics in order to determine the difference among the means for each component independently. when the difference was found to be significant the Scheffe`s post hoc test was applied to assess the significant difference among the group means. The findings of the variables are presented in Table 1.

**Table 1: Comparison of Mean Performance of the selected Physical Fitness Components after
Different Durations of Warm-up**

Physical Fitness Components	Test Items	D.F.	Sum of Square	Mean sum Of square	F Ratio
Explosive Leg Strength	Vertical Jump	B= 3 W=76	B=695.35 W=4300.6	231.78 56.69	4.09*
Agility	4x10 Yards Shuttle Run	B= 3 W=76	B=0.6144 W=34.67	0.3072 0.456	0.67@
Trunk flexibility	Sit & Reach test	B= 3 W=76	B=1660.05 W=3297.9	533.35 43.69	12.75*
Eye Hand co-ordination	Eye Hand co-ordination test	B= 3 W=76	B=3.44 W=91.25	1.14 1.20	0.95@
Eye Foot co-ordination	Eye Foot co-ordination test	B= 3 W=76	B=1.36 W=24	0.45 0.31	1.45@

*Significant at .05 level

@Not significant at .05level

An examination of Table 1 reveals that there are significant difference in the means of vertical jump (F=4.09) and sit and reach test performance (F=12.75), whereas. No significant differences are found in the mean performance of 4x10 Yards shuttle run (F=0.67), Eye hand co-ordination (F=1.45) of the selected subjects. As the difference was found significant by one way analysis of variance, the Sheffe`s post hoc test was applied to assess the significant difference between the paired mean are shown on Table 2 (a)(b).

Table 2 (a)(b): Paired Mean Difference for Vertical Jump Performance

After No warm-up	After 5 min warm-up	After 10 min warm-up	After 15 min warm-up	M.D	C.D
48.15	50.65			2.5	4.74
48.15		52.92		4.8*	4.74
48.15			56.15	8.0*	4.74
	50.65	52.92		2.3	4.74
	50.65		56.15	5.5*	4.74
		52.92	56.15	3.2	4.74

*Significant at 0.05 Level of confidence

Table 2 (a)(b): Paired Mean Difference for Sit and Reach Test Performance

After No warm-up	After 5 min warm-up	After 10 min warm-up	After 15 min warm-up	M.D	C.D
15.85	18.19			2.34	8.65
15.85		23.5		7.67	8.65
15.85			27.85	12.00*	8.65
	18.19	23.5		5.31	8.65
	18.19		27.85	9.66*	8.65
		23.5	27.85	4.35	8.65

*Significant at 0.05 Level of confidence

4. Findings

It is learnt from Table 2(a)(b) that superior performance shown by the subjects in the vertical jump as well as sit and reach test performance after 15 minutes of warm-up exercises while compared with the no warm up as well as after 5 minutes warm-up. Both the tables further reveal that the highest performance are exhibited due to 15 minutes warm-up, followed by 10 minutes warm-up, followed by the 5 minutes warm-up and followed by the no warm-up performance. Different mean values are depicted on the figure 1 & 2

Figure 1: Mean Difference for Vertical Jump

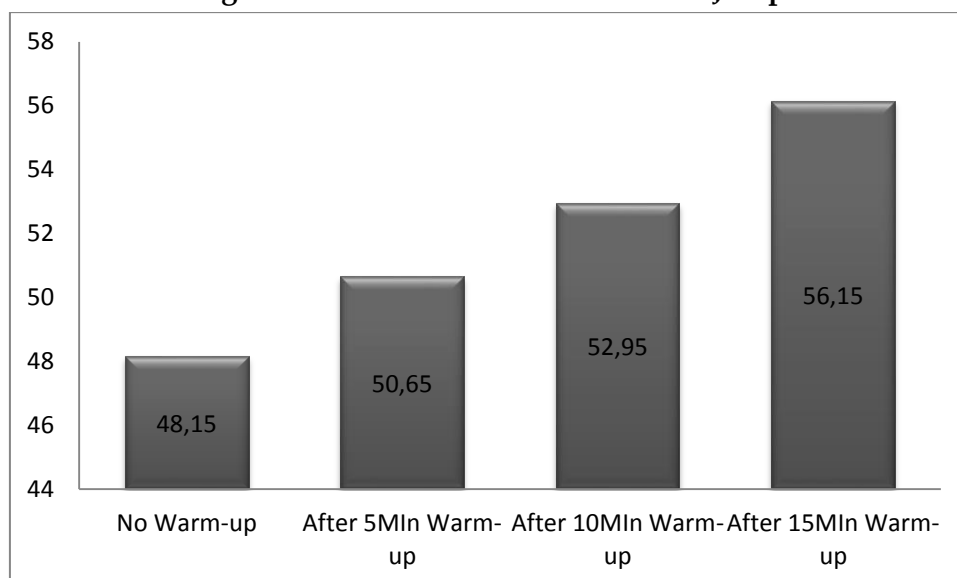
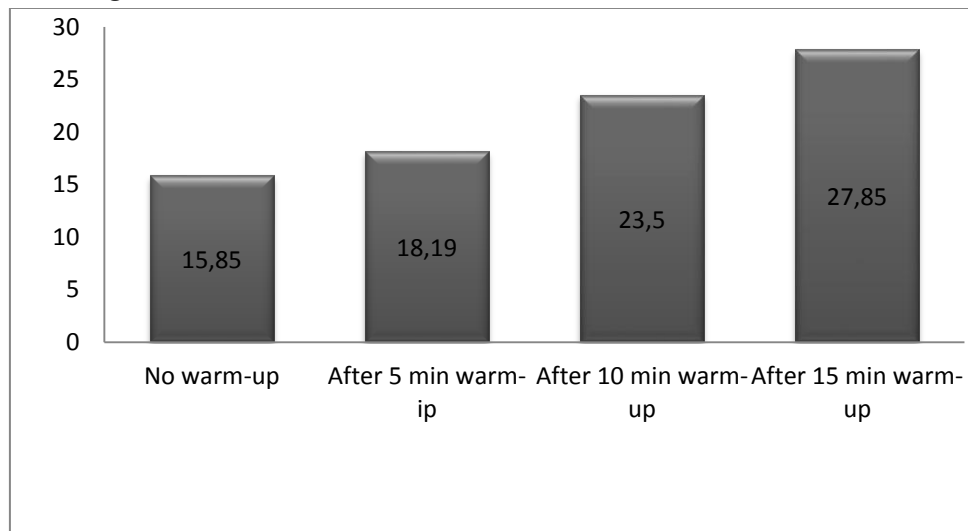


Figure 2: Mean Difference for Sit and Reach Test Performance



Discussion of Findings

The finding of this study reveals that the better performance shown by the players after 15 minutes duration of warm-up followed by the 10 minutes duration of warm-up, followed by 5 minutes duration of warm-up and least performance was shown by no warm-up in the case of explosive leg strength and trunk flexibility. It may be because of warm up increases the local temperature of the muscles which in turn increases the muscle excitability, speed and reaction time at the same time decreases the duration of action patented in the muscles and also supplies oxygenated blood to the muscle fibers which activates the muscle fibers to execute explosive strength of the legs. The flexibility of the trunk improves with the warm-up may be due to the development of muscle tone, excitability, appropriate secretion of synovial fluid and increases joint mobility.

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