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EFFECT OF VARIED PACKAGES OF PHYSICAL TRAINING FOR PREPARATORY PERIODS ON ANAEROBIC POWER OF SCHOOL LEVEL BOYS

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Abstract:

For the purpose of this study, eighty boys studying in the high school and higher secondary schools of Puducherry region were randomly selected as subjects and their range of age group was between fourteen to nineteen years. The total subjects were divided into four groups called as I, II, III and IV and each group consist of twenty students. The groups I, II, and III were treated as experimental groups and the group IV was considered as control group. The pre and post tests on anaerobic power variable were taken and recorded for all the four groups. All the three experimental groups were trained for six days per week for a period of 16 weeks. The adjusted post test mean differences between experimental group I and experimental group III was 7.11 and it was significant at 0.01 level. The value of 2.60 was obtained as adjusted post test mean difference between experimental group II and experimental group III. The experimental group I packaging I preparatory period physical training with required intensity and required volume had significantly improved on anaerobic power greater than the other two experimental groups.

Introduction:

Sports Training is done for improving sports performance. The sports performance is not the product of one single system or aspect of human personality. The total personality of a sportsman has to be improved in order to improve his performance.

Completive Sports is becoming a highly technical job. A lot of research is being done by the western countries on the scientific basis of performance in sports. As a result of more research new techniques are being adopted for training high level sportsmen.

In recent years the dramatic changes that have taken place has brought about some revolution in performance. These recent changes in conditioning methods are based on and have been motivated careful observation and scientific research. The changed programme has produced valid and precise information on the relative effectiveness of different training methods. As a result we currently know much better than ever before about the functioning of the body systems during training and competition. We have learned more about the effects of diet, drugs, attitude, warm up and other influencing factors. In recent years, we have gained new knowledge about almost every aspect of conditioning and performance.

The efficiency of athletes can be boosted up through proper training and conditioning. The condition of training has different aspects including the varied physical and physiological factors.

The use of scientific method or technique has helped to develop every new and effective training method one such method of training is package of trainings which has now come to be used by sports coaches in different parts of the world.

Training and Anaerobic Power:

Anaerobic power is the ability to overcome heavy resistance with high speed; here, the energy for the muscle contraction is primarily obtained through the breakdown of phosphagens. (ATP and CP)

Anaerobic power is the capacity of the individual to bring into play maximum muscle constraints at the fastest rate of speed

Anaerobic capacity is the capacity of organism to work in the absence of oxygen. In the absence of oxygen the energy production for the muscle contractions can take place in two ways:

- ✓ Through splitting of ATP and CP (i.e. Phosphogens). This mechanism of energy production is called alactacid mechanism as it not leads to formation of lactic acid
- ✓ By glycolysis of muscle glycogen (I.e. carbohydrate). This is called lactacid mechanism as it results in the formation of lactic acid.

The capacity of the alactacid mechanism is also called as anaerobic power. Due to intensive interval training, the anaerobic power of an athlete is increased. It has been observed that about 25% increase in ATP, CP stores occurs with anaerobic enzymes, that is phosphofructokinase and lactatedehydrogenase. The phosphagens stored in the muscles is only sufficient for activities with maximal intensity for speed or power performance.

Explosive strength always finds expression in motor movements that, it is a form of dynamic strength. Explosive strength performances are markedly influenced by the level of motor co-ordination required for a

movement, example, inter and intra muscular co-ordination exercise with changed resistance and intensive interval method, improve explosive strength.

Hypothesis:

It was hypothesised that there would be significant differences among the effect of package I, Package II and package III for preparatory period of physical trainings on anaerobic power of school level boys.

Method:

The main purpose of the study was to find out the effect of varied packages of physical training for preparatory and competitive periods on leg explosive power school level boys.

For the purpose of this study, eighty boys studying in the high school and higher secondary schools of Puducherry region were randomly selected as subjects and their range of age group was between fourteen to nineteen years. The total subjects were divided into four groups called as I, II, III and IV and each group consist of twenty students. The groups I, II, and III were treated as experimental groups and the group IV was considered as control group. The initial tests on anaerobic power variable were taken and recorded for all the four groups. All the three experimental groups were trained for six days per week for a period of 16 weeks.

Among the three experimental groups, group I was involved with packaging I preparatory period physical training with required intensity and required volume, group II was taken up with package II preparatory period physical training with above 90% intensity and required volume, and the group III was trained with the package III preparatory period physical training with fixed high intensity and fixed high volume. The control group was not involved in any physical trainings. After 16 weeks of preparatory period training, the second test on anaerobic power variable are taken for all the four groups and recorded.

The statistical analysis of the data collected from the pretest and post test of experimental groups and control group on anaerobic power for the preparatory period training have been presented in the table I

Table 1: Analysis of Covariance for the Pretest and Posttest Data of Experimental Group I, Experimental Group II, Experimental Group III and Control Group on Anaerobic Power for the Preparatory Period (Scores in Kilogram, Metre/Second)

Test	Group I Gradually Loaded Intensity & Required Volume	Group II Fixed High Intensity & Required Volume	Group III Fixed High Intensity & Fixed High Volume	Group IV Control Group	SOV	DF	SS	MS	"F"
Pre –Test Mean SD	101.46 8.87	97.07 7.60	92.10 7.16	90.59 5.81	B.M W.G	3 76	1468.52 4425.46	489.51 58.23	8.41**
Post – Test Mean SD	112.91 9.88	103.13 8.85	95.23 7.45	89.58 9.35	B.M W.G	3 76	6150.49 6377.13	2050.16 83.91	24.43**
Adjusted Post -Test Mean	106.36	101.24	98.64	94.60	B.S W.S	3 75	1113.79 1360.54	971.26 18.14	20.47**

* = Significant at .05 level
Table value for df 3 and 76 at .05 level =2.72
Table value for df 3 and 76 at .01 level =4.05

** = Significant at .01 level
Table value for df 3 and 75 at .05 level =2.73
Table value for df 3 and 75 at .01 level =4.05

Table I shows the analyzed data of anaerobic power. The pre test means of experimental group I, experimental group II, experimental group III and control group were 101.46 kilogram, metre per second, 97.07 kilogram, metre per second, 92.10 kilogram, metre per second and 90.59 kilogram, metre per second respectively. The obtained 'F' ratio was 8.41 and it was insignificant for the degree of freedom 3 and 76.

The post test means of experimental group I, experimental group II, experimental group III and control group were 112.91 kilogram, metre per second, 103.13 kilogram, metre per second, 95.23 kilogram, metre per second and 89.58 kilogram, metre per second respectively. The obtained 'F' ratio of 24.43 was insignificant at 0.01 level for the degree of freedom 3 and 76.

The adjusted post test means were 106.36 kilogram, metre per second for experimental group I, 101.24 kilogram, metre per second for experimental group II, 98.64 kilogram, metre per second for experimental group III and 94.60 kilogram, metre per second for control group. The obtained 'F' ratio was120.47 and it was significant at 0.01 level for the degree of freedom 3 and 75.The above results indicated that there was significant difference existed among the adjusted post test means of experimental group I, experimental group II, experimental group III and control group. Further, to determine which of the paired means had a significant difference, the Scheffe's test was applied as post hoc test and the results were presented in the table II.

Table 2: Scheffe's Test for the Differences between the Paired Adjusted, Post - Test Means on Anaerobic Power for Preparatory Period (Scores in Kilogram, Metre per Second)

Adjusted post test Means				Means differences	Level of significant
Group I gradually loaded high intensity & required volume	Group II fixed high intensity & required volume	Group III gradually loaded high intensity & fixed high volume	Group IV Control Group		

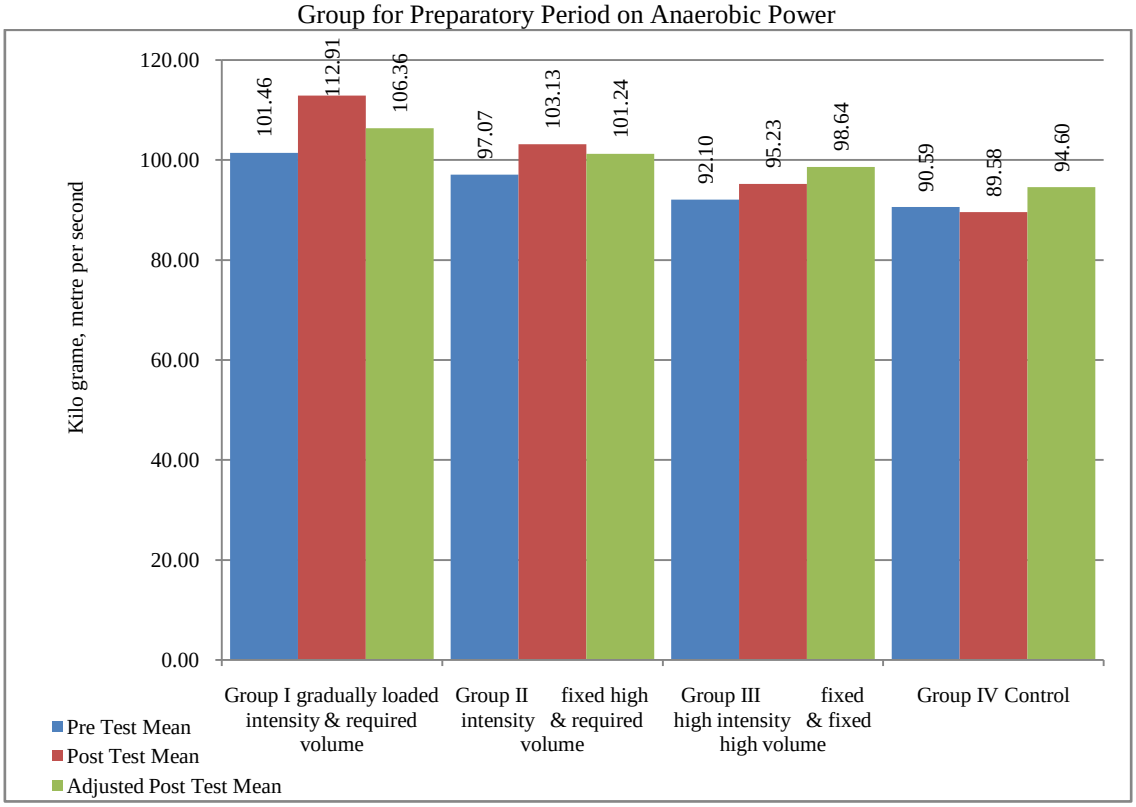
106.36			94.60	11.76	0.01
	101.24		94.60	6.65	0.01
		98.64	94.60	4.05	0.05
106.36	101.24			5.11	0.01
106.36		98.64		7.11	0.01
	101.24	98.64		2.60	NS

Confidence interval value at .05 level = 3.85 Confidence Interval value at .01 level = 4.69

Table II shows the difference between paired adjusted post test means on anaerobic power. The confidence interval value at .05 level was 3.85; and 4.69 was the confident interval value at .01 level of significance. The adjusted post test mean difference on anaerobic power between experimental group I and control group was 11.76 and the obtained value was significant at 0.01 level. The adjusted post test mean difference of 6.65 was obtained between experimental group II and control group. The obtained value was significant at 0.01 level.

The adjusted post test mean difference on anaerobic power between experimental group III and control group was 4.05 and it was significant at 0.01 level. The adjusted post test mean difference of 5.11 was obtained between experimental group I and experimental group II. The obtained value was significant at .01 level. The adjusted post test mean differences between experimental group I and experimental group III was 7.11 and it was significant at 0.01 level. The value of 2.60 was obtained as adjusted post test mean difference between experimental group II and experimental group III. The obtained value was insignificant.

Figure: The Pre-Test, Post – Test and Adjusted Post Test Mean Values of Experimental Groups and Control Group for Preparatory Period on Anaerobic Power



Conclusion:

The above results indicated that experimental group I, experimental group II, experimental group III were significantly improved the anaerobic power, when compared with the control group and also there was significant difference existed between groups I and II and also between groups I and III.

It was also indicated that experimental group I packaging I preparatory period physical training with required intensity and required volume had significantly improved the anaerobic power greater than the other two experimental groups.

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