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Effect of training methods on physical fitness of volleyball players

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ABSTRACT

36 male secondary and senior secondary school volleyball players of Muzaffarnagar district who have opted physical education as an elective subject were selected to achieve the purpose of this study and placed in three groups *i.e.* extensive, intensive and control group. The average age of the subjects was 14.714 to 15.153 years. Pre-test was conducted for selected variables *i.e.* with the help of standard equipments after that extensive training method to extensive group and intensive training methods to intensive group and no training to control group were administered for 12 week in the evening session from 4 to 6.30 pm or 4 to 6 pm daily and then second post-test was conducted for the same variables with the help of same equipments. Investigator obtained data from both the tests and on the bases of statistical calculations he concluded that both the training methods had significant improvement in the component of physical fitness of volleyball players.

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Key words : Height, Weight, Strength, Muscular endurance on Abdominal and Shoulder joints, Flexibility on back and trunk joint and aerobic capacity Vo_2^{max}.

Since long trainers have been using various training method in their training programmes. Training methods are thought to be useful and beneficial for every sportsman in different phases of training. Investigator has realized its need and importance in his career and taken it as a research project because it affects all the stated variables of physical fitness. It has been observed and reported by so many researchers that following appropriate training method, improves the physical fitness and its variable of sportsmen but adopting appropriate and regular training method fulfils the demanded positive health and level of selected variables of the players of any country which can be helpful in increasing the level of performance of any sportsperson. Investigator has realized its importance as a sportsman. Components of physical fitness are height, weight, strength, muscular endurance on abdominal and shoulder joint, flexibility on back arch and trunk joint and aerobic capacity VO_2max etc.

METHODOLOGY

Research methodology involved the systematic procedure by which the research started from the initial identification of the problem to its final conclusions. The procedures and methods were applied in selection of subjects. Experimental design, selection of variables, selection of test items, reliability of the data, orientation of subjects, administration of training programmes and tests, collection of data and statistical procedure were followed in this study. 36 male secondary and senior secondary school volleyball players of Muzaffarnagar district who have opted physical education as an elective subject were selected to achieve the purpose of this study and placed in three groups *i.e.* extensive, intensive and control groups. The average age of the subjects was 14.714 to 15.153 years. Pre-test was conducted for selected variables *i.e.* with the help of standard equipments after that extensive training method to extensive group and intensive training methods to intensive group and no training to control group were administered for 12 week in the evening session from 4 to 6.30 pm or 4 to 6 pm daily and then second post-test was conducted for the same variables with the help of same equipments.

The statistical calculations of the results obtained from both the extensive and intensive training methods before and after training programme, on the collection of data and discussion of results findings are presented. The study was conducted to determine the effects of extensive and intensive training methods on the component of physical fitness of volleyball players.

OBSERVATIONS AND DISCUSSION

The Table 1 shows the results of height after statistical analysis which was taken after imparting the training methods daily in the evening session to the respective groups.

The calculated value of F-test for height were almost

Table 1: Height

Groups	Pre-test	Post-test	F-value pre-test	F-value post-test	S.L.
Intensive (n=12)	M=169.58	170.42	0.92	0.87 df=11	0.05
Extensive (n=12)	M=172.78	173.67	0.90	0.99 df =11	
Control (n=12)	M=165.18	165.54			

equal *i.e.* 0.92 and 0.90 at the initial stage or study state test before starting the training, when comparing both training groups *i.e.* intensive and extensive training groups to the control group.

The calculated values of F-test 0.87 and 0.99 have significant difference *i.e.* 0.12 after receiving three months proposed extensive and intensive training methods. This suggests the calculated value of F-statistics seems to be significant at 0.05 levels. This reflects that the statuses of both the training methods are equally significant because calculated differences of 'f-test' values of both the treatments are 0.12 which is negligible which shows that extensive training method is more significant as compared to intensive training method.

On the other hand, the improvement or affectivity on increasing height of volleyball players as an average, value of extensive and intensive training methods are 0.84 and 0.89, shows that extensive training method is more positive or significant than intensive training method.

Table 2 shows the results of weight after statistical analysis which was taken after imparting training daily in the evening session to the respective groups.

The calculated value of F-test for weight were somewhat equal *i.e.* 0.67 and 0.65 at the initial stage or study state test before starting the training, when comparing both training groups *i.e.* intensive and extensive training groups to the control group.

The calculated values of F-test 0.36 and 0.43 have significant difference *i.e.* 0.07 after receiving three months proposed extensive and intensive training methods. The calculated value of F-statistics seems to be significant at 0.05 levels. This reflects that the statuses of both the training groups are equally significant because calculated differences of 'f-test' values of both the treatments are 0.07 which is negligible which shows that extensive training method is more significant as compare to intensive training method.

On the other hand the improvement in decreasing weight as an average, value of extensive and intensive training are 4.19 and 4.67, it shows that affectivity of extensive training method is more positive or significant in decreasing the average weight of the players as compare to intensive training method.

Table 3 shows the results of muscular endurance (abdominal) after statistical analysis which was taken after imparting training daily in the evening session to the subjects.

Table 3 shows the calculated value of F-test for muscular endurance of abdominal muscles somewhat equal *i.e.* 0.83 and 0.45 at the initial stage or study state test before starting the training, when comparing both training groups *i.e.* intensive and extensive training groups to the control group.

The calculated values of F-test 0.21 and 0.18 have significant difference *i.e.* 0.03 after receiving three months proposed intensive and extensive training. This suggests the calculated value of F-statistics seems to be significant at 0.05 levels which are negligible which shows that the affectivity of extensive training method is more positive or significant as compare to intensive training method.

On the other hand the improvement in muscular endurance of abdominal muscles as an average, value of

Table 2: Weight

Groups	Pre-test	Post-test	F-value pre-test	F-value post-test	S.L.
Intensive (n=12)	M=58.07	53.88	0.67	0.36 df=11	0.05
Extensive (n=12)	M=60.92	56.25	0.65	0.43 df =11	
Control (n=12)	M=52.29	52.92			

Table 3 : Muscular endurance (Abdominal)

Groups	Pre-test	Post-test	F-value pre-test	F-value post-test	S.L.
Intensive (n=12)	M=42.58	60.5	0.83	0.21 df=11	
Extensive (n=12)	M=41.58	57.58	0.45	0.18 df= 11	0.05
Control (n=12)	M=32.33	37.08			

extensive and intensive training methods are 17.92 and 16.00, which shows that the affectivity of intensive training method is more positive or significant than the extensive training method.

Table 3 shows the results of muscular endurance (shoulders joints) after statistical analysis which was taken after imparting training daily in the evening session to the subjects.

Table 3 shows the calculated value of F-test for muscular endurance of shoulder's muscles are *i.e.* 0.16 and 0.52 at the initial stage or study state test before starting the training, when comparing both training groups *i.e.* intensive and extensive training groups to the control group.

The calculated values of F-test 0.79 and 0.14 have significant difference *i.e.* 0.36 after receiving three months proposed intensive and extensive training. This suggests the calculated value of F-statistics seems to be significant at 0.05 levels. This reflects that the statuses of both the training groups are significant because calculated differences of f-test values of both trainings are 0.25 which is negligible which shows that the affectivity of intensive training method is more significant as compare to extensive training method.

On the other hand the improvement in muscular endurance of shoulder's muscles as an average, value of extensive and intensive training methods are 19.75 and 18.92, which shows that the affectivity of intensive training method is more positive or significant than extensive training method.

Table 4 shows the results of flexibility on trunk joint in men after statistical analysis which was taken after imparting stated training daily in the evening session to the subjects.

Table 4 shows the calculated value of F-test for flexibility on trunk joint are *i.e.* 0.84 and 0.49 at the initial stage or study state test before starting the training, when comparing both training groups *i.e.* intensive and extensive training groups to the control group.

The calculated values of F-test 0.20 and 0.42 have significant difference *i.e.* 0.22 after receiving three months proposed intensive and extensive training in first phase. This suggests the calculated value of F-statistics seems to be significant at 0.05 levels. This reflects that the statuses of both the training groups were equally significant because calculated differences of f-test values of both the treatments is negligible but extensive training method is more significant as compare to intensive training method.

On the other hand the improvement in flexibility on trunk joint as an average, value of extensive and intensive training are 04.08 and 04.22, reflects that affectivity of extensive training method is more positive or significant than intensive training method.

Table 5 shows the results of flexibility on back arch in men after statistical analysis which was taken after imparting stated training daily in the evening session to the subjects.

Table 5 shows the calculated value of t-test for flexibility on back making arch are 0.50 and 0.07 at the initial stage or study state test before starting the training, when comparing both training groups *i.e.* intensive and

Table 3 : Muscular endurance (Shoulders)

Groups	Pre-test	Post-test	F-value pre-test	F-value post-test	S.L.
Intensive (n=12)	M=43.75	63.5	0.16	0.79 df=11	
Extensive (n=12)	M=41.33	60.25	0.52	0.14 df=11	0.05
Control (n=12)	M=36.25	35.92			

Table 4 : Flexibility on trunk joint

Groups	Pre-test	Post-test	F-value pre-test	F-value post-test	S.L.
Intensive (n=12)	M=11.75	15.83	0.84	0.20 df=11	
Extensive (n=12)	M=12.85	17.07	0.49	0.42 df=11	0.05
Control (n=12)	M=5.10	6.42			

Table 5 : Flexibility on back arch

Groups	Pre-test	Post-test	F-value pre-test	F-value post-test	S.L.
Intensive (n=12)	M=32.14	32.67	0.50	0.33 df=11	
Extensive (n=12)	M=30.24	32.43	0.07	0.57 df=11	0.05
Control (n=12)	M=23.58	26.33			

Table 6 : Cardio-vascular endurance Vo_2^{max} test

Groups	Pre-test	Post-test	F-value pre-test	F-value post-test	S.L.
Intensive (n=12)	M=52.25	57.57	0.32	0.00 df=11	
Extensive (n=12)	M=56.03	57.85	0.98	0.81 df=11	0.05
Control (n=12)	M=47.91	48.61			

extensive training groups to the control group.

The calculated values of F-test 0.33 and 0.57 have significant difference *i.e.* 0.24 after receiving three months proposed intensive and extensive training in first phase. This suggests the calculated value of F-statistics seems to be significant at 0.05 levels. This reflects that the statuses of both the training methods are equally significant because calculated differences of f-test values of both the treatments is negligible but extensive training method is more significant as compare to intensive training method.

On the other hand the improvement in flexibility as an average, value of intensive and extensive training are 0.53 and 2.19, reflects that the affectivity of extensive training method is more significant than intensive training method.

Table 6 shows the results of cardio-vascular VO_2 max in men after statistical analysis which was taken after imparting stated training daily in the evening session to the subjects.

Table 6 shows the calculated value of F-test for cardiovascular VO_2max of a volleyball players are somewhat equal *i.e.* 0.32 and 0.98 at the initial stage or study state test before starting the training, when comparing both training groups *i.e.* intensive and extensive training groups to the control group.

The calculated values of F-test 0.00 and 0.81 have significant difference *i.e.* 0.81 after receiving three months proposed intensive and extensive training in second phase This suggests the calculated value of F-statistics seems to be significant at 0.05 levels. This reflects that the status of both the training groups were equally significant because calculated differences of f-test values of both the treatments is negligible but intensive training method is more significant as compare to extensive training method.

On the other hand the improvement in VO_2 max of volleyball players as an average, value of extensive and intensive training methods are 05.32 and 01.82 which shows that intensive training method is more significant than extensive training methods in increasing VO_2 max.

Conclusion:

The above discussion of results revealed that extensive training group had significant improvement in muscular strength and endurance increasing height and decreasing body weight as compared to intensive training method whereas intensive training method more significant in improving flexibility on trunk join and back arch and VO_2 max..

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