SUMMARY

Inspite of massive efforts on the part of Government of India, public sector undertakings, industrial concerns and sportsmen themselves we have comparatively very little achievement to report in the field of sports at the international level. This lack of creditable performance may be due to a number of factors. One such shortcoming may be the type of training given or training methods employed by the coaches for preparing athletes under Indian conditions at different levels of competition. While it is evident from the available literature that considerable research has been undertaken with regard to continuous running, interval running and Fartlek as methods of training, no attempt has been made to study the effects of competition and test method on performance of athletes especially Indian athletes. Therefore, the present study was undertaken by the investigator.

The purpose of the study was to compare the effects of Interval Running and Competition and Test Methods on selected physiological variables and running performance.

The subjects for the study were 60 male students of the Shahid Kanshi Ram College of Physical Education, Bhagoo Majra (Kharar) studying in the C.P.Ed. Course of one year duration.
The subjects were equally assigned to two experimental and one control group by using random sampling procedure of drawing the lots. The two experimental groups participated in the training programme for a period of ten weeks. Experimental group EIT performed interval training and the other group ECT trained with competition and test method. The control group was designated as Group C. The data on the selected physiological variables of resting pulse rate, vital capacity, blood pressure, blood haemoglobin and blood sugar, and running performance in 1500 metres were recorded before (Pre-test) and at the end (Post-test) of the experimental period of ten weeks. The significance of differences between the pre-test and post-test means in each of the physiological variables and running performance were analysed by 't' test and the differences among the groups were analysed by way of analysis of variance and covariance (F ratios). The level of significance chosen to test the hypothesis was 0.05.

The differences between the pre-test and post-test means in resting pulse rate (Group EIT, \( t = -3.08 \), Group ECT, \( t = -2.38 \)), vital capacity (Group ECT, \( t = 2.35 \)), resting systolic blood pressure (Group EIT, \( t = -7.00 \), Group ECT, \( t = -7.02 \)) resting diastolic blood pressure (Group EIT, \( t = -2.79 \), Group ECT, \( t = -3.25 \)), resting pulse pressure (Group EIT, \( t = -9.20 \), Group ECT, \( t = -25.5 \)), and performance in running 1500 metres (Group EIT, \( t = -3.32 \), Group ECT, \( t = 3.77 \)) were significant.
at .05 level of confidence. The control group did not show any significant differences in the chosen variables. The differences between pre-test and post-test scores were not found statistically significant in vital capacity (Group EIT, $t = 1.93$), blood haemoglobin (Group EIT, $t = 0.65$, Group ECT, $t = 0.23$), and blood sugar (Group EIT, $t = -0.83$, Group ECT, $t = -0.03$).

The analysis of covariance when applied to find out the significance of differences among the adjusted final means of the two experimental groups and the control group, resulted in a significant F value at .05 level in resting pulse rate ($F = 12.80$), vital capacity ($F = 25.16$), resting systolic blood pressure ($F = 52.84$), resting pulse pressure ($F = 9.03$) and 1500 metres run ($F = 24.20$). The F values for the resting diastolic blood pressure, blood haemoglobin and the blood sugar content were not significant.

As the analysis of covariance (Ftest) showed significant differences among the groups in the variables of resting pulse rate, vital capacity, resting systolic blood pressure, resting pulse pressure and 1500 metres run, the Scheffe's Test of post hoc was applied to find which of the differences between means amongst the groups were statistically significant. The application of Scheffe's test indicated that the mean gains made by groups EIT and ECT were significantly higher in resting pulse rate, vital capacity,
systolic blood pressure (resting), resting pulse pressure and 1500 metres run as compared to the control groups. No significant differences between the two experimental groups were found when compared with each other for their effects on any of the selected physiological variables and running performance.

CONCLUSIONS

Within the limitations identified and on the basis of the findings of the study, the following conclusions were drawn:

1. Interval running and competition and test methods were significantly effective in lowering the resting pulse rate, and blood pressure (resting systolic, diastolic and pulse pressure) and in improving running performance in 1500 metres. But when both these methods were compared for their effects with regard to the said variables no significant differences were observed.

2. Competition and test method as employed in this study significantly increased the vital capacity whereas for interval running the increase was not significant.

3. Interval running and competition and test methods did not show any significant effect on blood haemoglobin, and blood sugar contents.
4. The control group did not exhibit any significant changes in the selected physiological variables and running performance in 1500 metres.

RECOMMENDATIONS

Based on the conclusions of this study the following recommendations have been made:

1. Physical Education teachers and coaches should adopt Interval Running, and Competition and Test Methods for enhancing the level of endurance of their athletes preparing for middle distance events especially 1500 metres run.

2. Since both the experimental treatments have produced equal training effect in all the variables considered in this study except vital capacity, it is recommended that the Competition and Test Method may be preferred as it is comparatively easy to plan and administer.

3. As endurance is one of the important motor components and is essential for all games and sports, the Interval Running and Competition and Test Methods should form the indispensable part of the training programme of all categories of sportsmen, specially who rely on Aerobic energy services.

4. The present study may be replicated with subjects of age and sex other than those employed in this study.
5. Similar study may be undertaken with trained athletes participating at different levels of competition.

6. The study may be repeated using different endurance training means in combination, with each other.