

The Effect of Tempo Run Training on Cardiovascular and Skill Performance of Long Distance Runners

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Abstract:

The present study aims at finding out the effect of tempo run on cardiovascular and skill performance of long distance runners. In this study there was one group consist of 20 subjects. This group was received specific training for period of 8 weeks. The experiment method was conducted by considering three phases. The Subjects were selected randomly from Uran Taluka of Raigad District only. The Subjects were selected from open age group of 20 long distance players only.

All the selected endurance tests were measured, prior to the experiments. After pre-test of the selected endurance tests the subjects of long distance runner group underwent for 8 weeks of tempo run training program. Finally, when the training periods of 8 weeks were over, the post tests on the selected tests were conducted for all the subjects. The analysis was done of the data collected by the researcher before and after the training. The data was analyzed by using paired sample 't' test.

Within the limit of the present study, selected Tempo run training exercises were contributed positively toward the improvement of Cardiovascular endurance and skill performance of long distance runners as tested by 12 min run and walk, 21 km run test.

Key Words: tempo run, cardiovascular, skill performance and long distance runners

Introduction:

Track and field events are generally individual sports with athletes challenging each other to decide a single victor. The racing events are won by the athlete with the fastest time, while the jumping and throwing events are won by the athlete who has achieved the greatest distance or height in the contest. The running events are categorized as sprints, middle and long-distance events, relays, and hurdling.

The basis of specific speed endurance appears to lie in a certain measure of aerobic endurance developed by suitable loading. Although the absolute extent of this loading is low in the endurance program of an endurance athlete the relative extent can be high and may reach 90% in phase 1 of the preparatory period.

Tempo runs are an excellent way for runners to build speed and strength. They're runs that are done at a steady effort level, usually just a little slower than your 10K race pace. Tempo runs help you develop your anaerobic or lactate threshold, which is critical for running faster. This type of training improves aerobic capacity and glycogen concentration in red muscle fibers. This has a positive affect not only on speed endurance, but also on the capacity to recover after loading of sub maximum and maximum intensity. This athlete will be able to attempt more repetitions at the maximum and near maximum intensities of speed training.

Need of the Study:

Tempo running is one of the training that long distance runners use to do in their training session. On tempo running there are lot of chances of overall improvement of the long distance athletes' ability as regards to his endurance, speed, power, balance and co-ordination ability of the long distance.

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Statement of the Problem:

“The Effect of tempo run Training on cardiovascular and skill performance of long distance runners”

Significance of the Study:

- Helpful for athlete to improve the leg strength, speed and endurance.
- Helpful increase the finishing speed of the athlete.
- Helpful for athlete to enhance the performance

Objectives of the Study:

- To prepare the tempo run training programme for the long distance runners.
- To find out the effect tempo run training programme on cardiovascular efficiency of long distance runners.
- To find out the effect tempo run training programme on skill performance of long distance runners.

Hypothesis of the Study:

Ho It was hypothesis that the tempo run training may not be helpful for improve the cardiovascular efficiency of the long distance runners.

Ho It was hypothesis that the tempo run training may not be helpful for improve the skill performance of the long distance runners.

Delimitation of the Study:

- 20 male long distance players open age groups were selected by researcher for tempo training.
- This training was given to 8 weeks and time limit was only one hours.

Limitation of the Study:

- Weather, climate which may have effect on training and performance were considered as a limitation.
- The factor likes diet, daily routine habits etc which might have an effect on the result of the study were considered as a limitation.

Methodology:

Design of the Study

- There was be one group consist of 20 subject.
- This group was received specific training for period of 8 weeks.
- The experiment method was be conducted by considering three phases.

Selection of Subjects:

- The Subject was selected randomly from Uran Taluka of Raigad District only.
- The Subject was selected from open age group of 20 players only.

Selection of the Variables:

➤ **Independent variables:** Tempo run Training: This training programme has been selected only after considering the actual requirements of the long distance runners which mainly need skill performance.

➤ **Depended variables:** Skill performance.

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Selection of Tests:

- 12 min Run and walk test
- 21 km Run test

Collection of Data:

All the selected endurance tests were measured, prior to the experiments. After pre-test of the selected endurance tests the subjects of experimental group underwent for 8 weeks of tempo run training program. Finally, when the training periods of 8 weeks were over, the post tests on the selected endurance tests were conducted for all the subjects of experimental group.

Administration of Test:

The test selected to measure fitness component was administered during pre and post on control and experimental groups. The subjects were given proper instructions to participate in each event.

Training Programme:

In the beginning of the time schedule, general fitness exercise like warming up jogging, general exercise, stretching exercise and finally fitness exercise like backward running, dips, jumping exercise and finally cool down exercise were regularly performed by the subjects. After proper warm up exercises the actual training was used to start by the subjects.

Analysis and Interpretation of Data: The analysis was done of the data collected by the researcher before and after the training. The data was analyzed by using paired sample 't' test. Within group comparison was done paired sample 't' test.

Result of Selected Variables on the Experimental Group

Table 1 shows the comparison of the mean between the pre & the post test of selected variable.

Variable	Pre Test		Post Test		Mean Diff	Std E M	't'
	Mean	SD	Mean	SD			
Cardiovascular Endurance Performance, 21 km Run	1408.75	310.78	1434.75	324.28	-26.00	6.59	3.94
	78.36	6.74	77.62	6.83	.73	.12	6.00

Significance at 0.05 level, where df = 19, 't' = 1.98

Comparison of mean of pre and post test of cardiovascular endurance (12 min run and walk) of Long Distance Runners.

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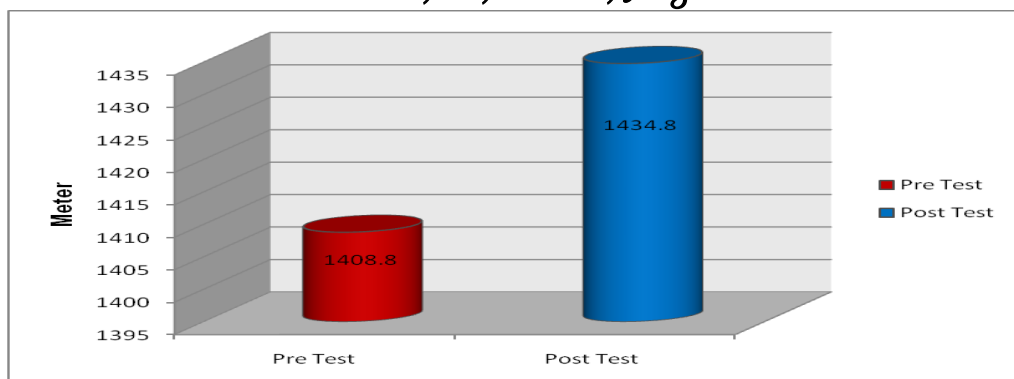


Fig. No. 1 Comparison of mean of pre and post test of cardiovascular endurance

It can be seen from the graph that there was significant improvement in cardiovascular endurance as measured by 12 min run and walk, of Long Distance runners at pre and post tests which may be due the training given to the subjects.

Comparison of mean of pre and post test of (21 km run test) of Long Distance Runners.

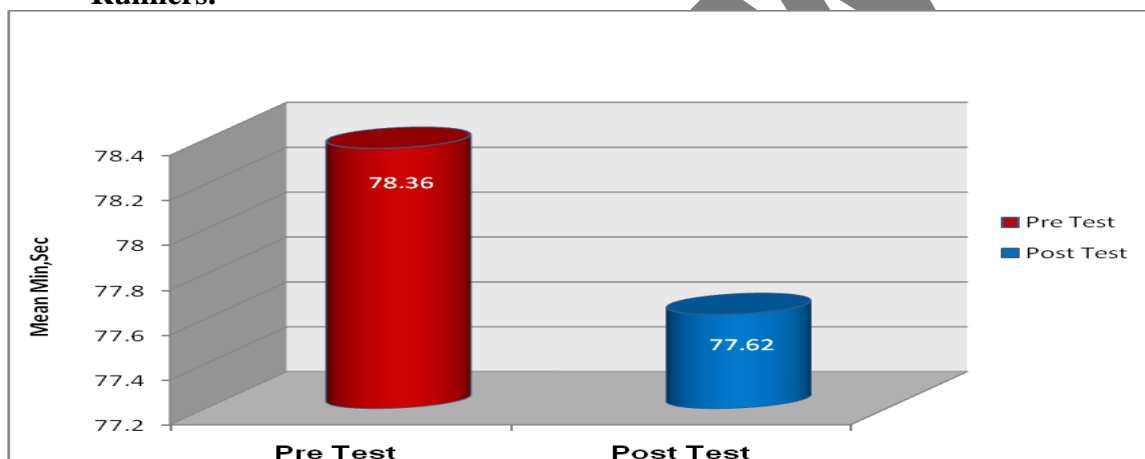


Fig. No. 2 Comparison of mean of pre and post test of Performance of 21 km run.

It can be seen from the graph that there was significant improvement in Performance, Fitness and leg muscles endurance as measured by 21 km run, of Long Distance runners at pre and post tests which may be due the training given to the subjects.

Conclusion: While concluding, it may be stated that, within the limit of the present study, selected Tempo run training exercises were contributed positively toward the improvement of Cardiovascular endurance and skill performance of long distance runners as tested by 12 min run and walk, 21 km run test.

References:

- Hinkle, (1982), "Basic Behavioral Statistics," published by Houghton Mifflin.
 John B. W., (2006), "Research in Education," published by Arrangement with Pearson Education, Inc. and Dorling Kinder sly publishing.
 Kansal D.K. (2008), Applied measurement evaluation and sports evaluation and sports selections .s.s.s. publications ,New Delhi
 Kothari C.R., (2004), "Research Methodology," New age international publishers.

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Beck and Kevin.,(1999), "A Tempo Run by Many Other Names."
www.runningtimes.com December.

Brandon L J (1995), "Physiological factors associated with middle distance running performance." *Georgia State University, Atlanta, USA. Sports Med.:19(4):268-77.*

Brown and Robin Jennifer,(2004) "The Effects of Stressed Tempo Music on Performance Times of Track Athletes" *Electronic Theses, Treatises and Dissertations. Paper 2956. <http://diginole.lib.fsu.edu/etd/2956>*

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