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A STUDY ON THE EFFECTIVENESS OF INTERVAL TRAINING IN IMPROVING SPORTS PERFORMANCE AMONG ATHLETES OF GULBARGA UNIVERSITY

***DR.AVINASH MALLIKARJUN KANTIKAR**

**Physical Education Director*
Government First Grade College Kamalapur, Dist Kalaburagi, Karnataka

ABSTRACT

The purpose of the present study was to examine the effect of interval training on selected motor fitness variables, namely speed and agility, among university-level athletes. The study was conducted on athletes of Gulbarga University, Karnataka. A suitable number of male athletes were selected as subjects and randomly assigned into an interval training group and a control group. The experimental group underwent a structured interval training programme for a specific training period, while the control group followed their regular physical activities without any specialized training intervention. Speed and agility were assessed through standard tests before and after the training period. The collected data were analyzed using appropriate statistical techniques to determine the significance of differences between the groups. The results revealed that interval training produced significant improvement in speed and agility of the experimental group when compared to the control group. The study concludes that interval training is an effective method for enhancing motor fitness among university athletes.

***KEYWORDS*: –interval training, Sports performance.**

INTRODUCTION

Interval training is a highly demanding type of training that compares with the extremely strenuous work performed by Sisyphus. According to Greek mythology, Sisyphus was the king of Corinth and well known for his craftiness. When Hades, the god of death, came to get him, Sisyphus tricked Hades and put him in chains. Hades eventually escaped and punished Sisyphus for his trickery. The sentence was that Sisyphus would eternally push a huge stone to the top of a hill. Every time Sisyphus reached the peak the stone would roll back down forcing him to start his work again and again. Those who want to experience interval training had better remember the work of Sisyphus.

The concept of interval training has existed for a number of years in one form or another. In the 1930s the famous German coach, Woldemar Gerschler, with the formalization of a structured system of interval training. With interval training, short to moderate periods of work are alternated with short to moderate periods of rest. This concept is a firm foundation in physiological principles. Researchers have demonstrated that athletes can

perform a considerably greater volume of work by breaking the total work into short, intense bouts with rest, or reduced activity, intervals interspersedbetween consecutive work bouts. The intervals of work and rest are usually equal and can vary from several seconds to five minutes or more (Wilmore & Costill, 1986). The important distinction between three types of interval training: aerobic, aerobic - anaerobic, and anaerobic. Aerobic interval training involves repeated short runs or swims at just below race pace, with very brief rest intervals of five to 15 seconds. This type of interval training requires oxygen uptakes of approximately 65 to 75 percent of VO2 max and heart rates for aerobic interval training workout. Anaerobic interval training requires training at an intensity which exceeds race pace, but with even shorter work intervals and rest intervals of two minutes. Heart rate and oxygen uptake during these anaerobic intervals are similar to those observed in the aerobic - anaerobic intervals, but the blood lactate responses are much higher. Aerobic interval training builds a strong aerobic base, aerobic - anaerobic interval training develops speed and a sense of race pace, and anaerobic interval training develops leg strength, increases muscle buffering capacity, and increases the ability to clear lactate from the muscles

CONCEPT OF PERFORMANCE

The nature of sports performance has been insufficiently explored because sports performance is a complicated multi-dimensional process of tackling a sports task. Its exploration further needs an integrated effort on the part of various training science disciplines and theory and methods of specific sports. Human movement, human performance is a subject for such varied sciences as exercise, physiology, neuro-physiology, biomechanics, psychology, human cybernetics etc (Whiting, 1975).

The sports performance is a process-the process of tackling a given motor task. The degree, to which this task has been fulfilled, is the result of the process of tackling the motor task. Therefore, the concept of sports performance should include the actual process of tackling the task.

The sports performance is defined as, “unity of execution and result of sports action or a complex sequence of sports actions measured or evaluated according to agreed and socially determined names” (Schnabel, 1981).

REVIEWS OF RELATED LITERATURE

Kondapalli, (2010) achieved this, 30 male students studying in the Department of Physical Education and Sports Sciences, Acharya Nagarjuana University, Nagarjuna Nagar, Andhra Pradesh, India, were selected as subjects at random. The results of the study revealed that there was significant difference between sand running group and control group on selected speed and endurance parameters, namely speed and cardio respiratory endurance.

Hottenrott, Ludyga& Schulze, (2012) examined the effects of two different training programs (high-intensity-training vs. continuous endurance training) on aerobic power and body composition in recreationally active men and women and to test whether or not participants were able to complete a half marathon after the intervention period. Both groups completed a half marathon with no significant differences in performance (p = 0.63). Short, intensiveendurance training sessions of about 30 min are effective in improving aerobic fitness in recreationally active runners.

Fernandez, Kinner &Ferrauti, (2010) examined how the training surface (i.e., clay or carpet) affects the characteristics (i.e., ball velocity, running pressure, running volume, and physiological responses) of a tennis training session. Comparing the same stroke on the same court surface, but at different stroke velocities, we found significant differences in all the physiological measurements which significantly increased with hitting velocity.

Mallick, Shaikh & Goon, (2013) found the effects of Harness Running, Sand Running, Weight-Jacket Running and Weight training on the performance of agility among the Burdwan District School going soccer players. From the finding implies that the Weight Jacket Group was more effective in decreasing the time taken then all other training programs after ten weeks of training on Shuttle Run. Weight-Jacket Running Group showed higher adjusted post-test mean difference with Control Group in comparison to other three training Groups which is 0.27 then the critical difference 0.18 required to be significant at 0.05 levels.

RESEARCH METHODOLOGY

Significance of the Study

The study adopted an experimental research design with one experimental group and one control group. The purpose of the study was to compare the effect of interval training on sports performance among intercollegiate athletes of Gulbarga University, Karnataka.

Statement of the Problem

"a study on the effectiveness of interval training in improving sports performance among athletes of Gulbarga University"

METHOD OF THE STUDY

The study followed an experimental design to examine the effect of interval training on sports performance among intercollegiate male athletes of Gulbarga University. Fifty athletes were randomly selected and divided into two groups: an experimental group and a control group. Pre-tests were conducted to assess motor fitness variables such as speed, and agility. The experimental group underwent an interval training programme for eight weeks, six days a week, while the control group followed their regular routine. After the training period, post-tests were conducted. The results were compared to determine the effect of interval training on sports performance.

OBJECTIVES OF THE STUDY

- To determine the impact of interval training on sports performance.
- To assess the effect of interval training on speed.
- To analyze the effect of interval training on agility.
- To compare sports performance between the experimental and control groups.

HYPOTHESES OF THE STUDY

- There will be a significant effect of interval training on the dependent variables.

- Interval training will have a positive effect on sports performance and motor fitness variables.
- There will be a significant difference in post-test performance between the experimental and control groups.

Variables of the Study

Independent Variable:

- Interval Training Method

Dependent Variables:

- Speed
- Agility

Standard motor ability tests were used to measure these variables.

Sample of the Study

Fifty intercollegiate male athletes from Gulbarga University, Karnataka, were selected using the simple random sampling method. The participants were divided into two equal groups: an experimental group (interval training) and a control group

The following are the motor ability tests have been used in the study.

MOTOR ABILITY TEST (AAHPER)

Sl.No.	Motor Ability	Test	Unit of Measurement
1.	Speed	50 Yard Dash	Time
2.	Agility	Shuttle Run 10x4 yards	Time

Endurance, Flexibility and strength components are not considered in the study.

ANALYSIS AND INTERPRETATION OF DATA

Table: No -1. Comparison of Speed Performance between Control and Interval Training Groups

Test	Variable	Group	Mean	SD	t-value
Pre-Test	Speed	Control Group	8.42	1.08	**1.87***
		Interval Training Group	7.88	1.21	
Post-Test	Speed	Control Group	8.19	0.96	**8.72****
		Interval Training Group	6.84	0.59	

Significant at 0.05 levels

The pre-test results show no major difference in speed between the control group and the interval training group, indicating that both groups were almost equal at the beginning of the study. After eight weeks of training, the post-test results show a significant improvement in speed performance in the interval training group compared to the control group. The obtained t-values indicate that the difference between the two groups in the post-test is statistically significant. This clearly shows that interval training had a positive and meaningful effect on the speed performance of the athletes.

Table: No -2- Pre-Test and Post-Test Agility Scores of Control Group and Interval Training Group

Test	Variable	Group	Mean	SD	t-value
Pre-Test	Agility	Control Group	13.10	0.42	**1.31***
		Interval Training Group	13.01	0.95	
Post-Test	Agility	Control Group	12.84	1.01	**9.04****
		Interval Training Group	11.03	1.06	

Significant at 0.05 levels

The table shows the mean and standard deviation of agility scores for the control and interval training groups in the pre-test and post-test. The pre-test results indicated no significant difference between the groups, showing that both were comparable at baseline. The post-test results revealed a significant improvement in agility in the interval training group compared to the control group. The obtained *t*-value at the post-test level was statistically significant at 0.01, indicating the effectiveness of interval training in improving agility performance.

SUMMARY AND CONCLUSION

The study highlighted the role of scientific sports training in improving performance capacity, which includes physical fitness, technique, coordination, tactics, physique, and psychological factors. The findings revealed that interval training had a significant positive influence on speed and agility among the athletes of Gulbarga University, Karnataka. Therefore, interval training was found to be an effective method for improving overall motor fitness of the athletes.

FINDINGS

- Interval training significantly improved **speed** performance.
- Interval training had a significant positive effect on **agility**.
- Interval training was effective in improving overall **motor fitness** of the athletes.

RECOMMENDATIONS

- Interval training methods may be effectively implemented at the **college and university levels**.
- Coaches may design **integrated fitness training programmes** based on scientific principles.
- Regular physical fitness training should be encouraged to promote **health and physical well-being** among students and sportspersons.

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