

## EFFECT OF INTERVAL TRAINING ON PHYSICAL FITNESS VARIABLES OF FOOTBALL PLAYERS

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### ABSTRACT

The objective of the investigation was to determine the impact of interval training on the physical fitness parameters of football athletes. For this investigation, forty (40) state level football athletes aged between 14-16 years were arbitrarily chosen from Golden Star football club Kheri, Talwana. The participants were arbitrarily divided into two categories as the experimental group (soccer athletes) and control group. The experimental group underwent a period training programme while no training was provided for the command group. The duration of instruction was six weeks in a timetable of weekly three days for alternating days. The information was gathered based on the chosen physical health factors prior to and following the exercise duration. The information gathered was examined by "t" examination and the degree of importance was established at 0.05 level. Data examination revealed noteworthy enhancement in the velocity, nimbleness, and stamina of the football athletes.

**KEYWORDS-** Interval training, physical fitness, sports, football, state player

### INTRODUCTION

Today games and sports have begun as worldwide cultural events.(Santosh, 2022)The level of competitiveness in sports has significantly increased due to the growth of professional leagues

in numerous sports and the expanding interest in athletics. The globalization of sports is one of the primary causes of the escalating competitiveness, as fans from all around the world can now follow their favorite teams and players more conveniently than ever. The increased focus on performance and outcomes in athletics is another issue, as teams and sportsmen try to win more games and contests. Social media has also contributed to the rise in sports competition, as athletes and teams now have additional ways to publicize their successes and seize sponsorship opportunities. It is crucial for athletes to cooperate with an accredited coach or trainer to establish a training programme that is tailored to their specific needs and goals. Interval training entails recurring brief to extended periods of quite elevated intensity physical activity (equivalent or surpassing maximal lactate steady-state velocity) interspersed with intervals of recuperation (gentle physical activity or repose)(Goodman, 1996). It encompasses a multitude of endeavours that assess an athlete's synchronisation, equilibrium, and reaction speed.

This is especially accurate for athletes who engage in sports where the cultivation of aerobic and/or anaerobic metabolic mechanisms is of specific significance. Interval training is characterised by its nature as a form of training that incorporates alternating periods of physical activity and recuperation (Daniels, & Scardina, 1984). Football is a strenuous and biologically challenging game that necessitates the iteration of numerous alterable tasks, such as jogging, leaping, pivoting, and dashing.(Lee et al., 2020). Interval training is a regimen that fluctuates the magnitude within the training session by alternating a workout of an elevated intensity with a reprieve period of diminished intensity; then another workout is accomplished, once more pursued by a reprieve period, and so forth through the workout.(Bovas, 2020)It can aid in augmenting velocity, nimbleness, stamina as well as dynamic power. To fabricate a programme that is tailored to an athlete's distinct prerequisites and aspirations, it is crucial to collaborate with a proficient coach or instructor. Interval training is an essential component of an athlete's comprehensive training regimen in football. Participants of all varieties, ranging from the skilled to the leisurely enthusiast, now comprehend the prospective advantages of engaging in an Interval training regimen.(Tamilselvan Scholar et al., 2022)

### **Globalization of Sports and Escalating Competitiveness**

In modern times, athletics have evolved into global cultural spectacles, enticing spectators from every nook and cranny of the planet. This phenomenon can be ascribed to multiple factors, encompassing the expansion of professional leagues in diverse sports and the continuously

expanding fascination in athletics. The globalisation of sports is a noteworthy catalyst of increased rivalry, as it enables enthusiasts across the globe to effortlessly track their preferred teams and athletes. This worldwide extent has heightened the concentration on efficiency and results in sports, with squads and athletes endeavouring to attain triumph in an exceedingly cutthroat environment.(Kumar & Dhull, 2023) Moreover, the emergence of social media has played a crucial role in intensifying the rivalry, offering athletes and teams supplementary channels to exhibit their accomplishments and secure valuable endorsement prospects. To navigate this fiercely competitive sporting milieu, athletes progressively collaborate with accredited coaches or trainers to formulate training regimens customised to their individual requirements and aspirations.(Kumar, Dhull, et al., 2023)

### **The Significance of Interval Training in Sports**

Interval training is a training technique that entails alternating intervals of vigorous exercise with periods of recuperation. This method of training, distinguished by brief to extended periods of vigorous exercise followed by intervals of gentle exercise or relaxation, has acquired acknowledgement for its efficacy in improving athletic performance.(Kumar, Nara, et al., 2023) It encompasses a multitude of activities that challenge an athlete's synchronisation, equilibrium, and reaction time. Interval training is especially beneficial for athletes engaged in sports where the cultivation of both cardiovascular and anaerobic metabolic mechanisms is crucial. It provides a flexible method to coaching, enabling athletes to diversify the intensity within a solitary session, thereby fostering enhancements in velocity, nimbleness, stamina, and dynamic power.

In the milieu of football, interval training assumes a pivotal role as an integral constituent of athletes' comprehensive training programmes. Participants of all levels, varying from experts to weekend enthusiasts, have arrived to value the potential advantages of engaging in interval training programmes.(Santosh, 2022) These programmes are crafted to accommodate the distinct needs and goals of every athlete, highlighting the significance of cooperation with proficient coaches or trainers.

Comprehending the metamorphic potential of interval training in augmenting the corporeal qualities of athletes is crucial in the quest for superiority in sports. It is a methodology that corresponds with the developing panorama of sports, where performance enhancement is of utmost importance.(Bovas, 2020) The implementation of interval training contributes to the

expansion and advancement of athletes, enhancing the sporting experience and raising the benchmarks of competition.

## METHODOLOGY

### Study Design

The principal aim of this investigation was to examine the influence of a six-week interval training regimen on the physical fitness variables of football athletes. To tackle this aim, a well-organized research design was utilised, which included the choice of a sample of state-level football athletes and the execution of an interval training routine.

### Sample Selection

The examination populace comprised of 40 provincial-level football athletes aged between 14 to 16 years. These participants were chosen arbitrarily from the Golden Star football club in Kheri, Talwana. To guarantee the unpredictability of the sample, no particular criteria other than age were implemented. The chosen participants were subsequently divided evenly into two categories: a test group and a comparison group. Every team consisted of 20 football athletes.

### Intervention - Interval Training

The exploratory cluster was exposed to a six-week period training regimen. This training regimen was formulated to amplify the physical well-being aspects of the participants and was carried out for one hour each morning. The training protocol was implemented prior to the initiation of the customary football training sessions. The interval training was implemented on a timetable of three days per week, with training sessions occurring on alternating days throughout the six-week duration.

### Outcome Measures

To evaluate the efficiency of the interval training programme, particular physical fitness parameters were chosen as outcome indicators. These criteria encompass velocity, dexterity, and stamina. The velocity of the participants was assessed through a 30-meter sprint, while nimbleness was evaluated using a 4X10 metre shuttle run. Stamina was assessed by performing a

12-minute jog or stroll examination. Information on these variables were gathered both prior to and following the six-week instructional duration.

### Statistical Analysis

The collected data were subjected to statistical analysis using the t-test. This assessment aimed to determine whether there were notable discrepancies in the physical health measures of the football players before and after the interval workout routine. A significance level of 0.05 was established to assess the statistical importance of the findings.

### RESULTS

Information regarding every faction's velocity, dexterity, and stamina are acquired in accordance with the conducted investigation. The data is displayed in Table 1, as illustrated.

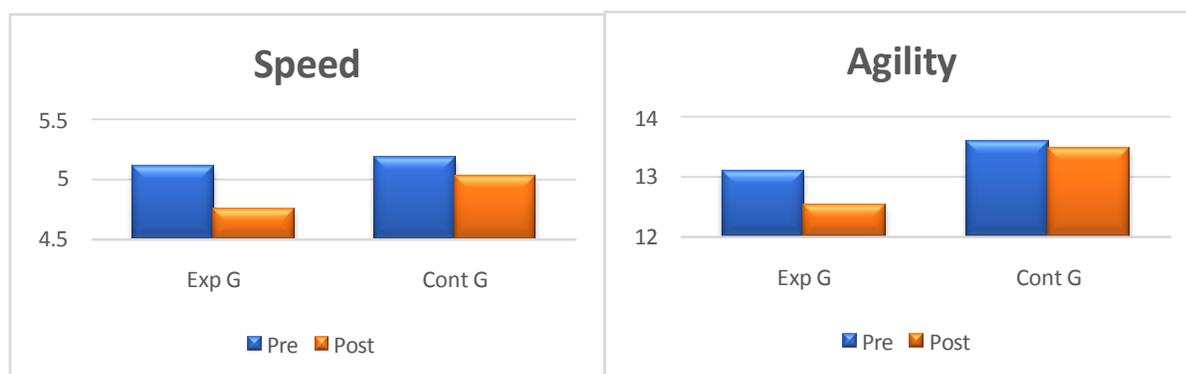
Variable	Group	Pre	Post	T-Value	Sig
Speed	Exp.	5.106 ±0.326	4.753 ±0.451	5.048	.000
	Cont.	5.179 ±0.339	5.030 ±0.362	7.907	.000
Agility	Exp.	13.08 ±0.744	12.54 ±0.699	4.391	.000
	Cont.	13.58 ±1.196	13.48 ±1.086	7.103	.000
Endurance	Exp.	3010.85±277.3	3307.01±268.9	7.745	.024
	Cont.	2942.9±293.8	2942.9 ±288.9	2.010	.000

In Table 1, the information on the physiological well-being parameters of both the experimental (Exp.) and control (Cont.) groups are displayed, contrasting their pre-training (Pre) and post-training (Post) evaluations. The criteria being assessed are velocity, dexterity, and stamina.

**Speed:** Prior to the interval training regimen, the experimental group exhibited an average velocity of 5.106 metres, accompanied by a standard deviation of ±0.326. Following the six-week training regimen, their velocity enhanced to an average of 4.753 metres, with a standard deviation of ±0.451. The t-score for this alteration was 5.048, and the importance level (Significance) was discovered to be .000, indicating an exceedingly substantial enhancement in velocity among the experimental group. Likewise, the command group demonstrated a noteworthy enhancement, with a t-score of 7.907 and a Significance value of .000.

**Agility:** The preliminary nimbleness assessment for the experimental cohort was 13.08 metres, with a deviation of  $\pm 0.744$ . Pursuing the interval training regimen, their nimbleness enhanced to an average of 12.54 metres, with a standard deviation of  $\pm 0.699$ . The t-score for this alteration was 4.391, and the Significance value was .000, indicating a significant enhancement in nimbleness among the experimental cohort. Similarly, the experimental group exhibited a noteworthy improvement in dexterity, with a t-score of 7.103 and a Significance value of .000.

**Endurance:** In relation to stamina, the experimental group had an initial assessment of 3010.85 metres, with a deviation of  $\pm 277.3$ . Following the six-week period of interval training, their stamina escalated to an average of 3307.01 metres, accompanied by a standard deviation of  $\pm 268.9$ . The t-score for this modification was 7.745, and the Significance value was .024, suggesting a statistically substantial enhancement in stamina among the experimental group. On the other hand, the experimental group showed no noteworthy alteration in stamina, with a t-score of 2.010 and a Significance value of .000.



In the exploratory group the average magnitude and variability (Average  $\pm$ SD) of preliminary examination and subsequent examination for velocity were  $5.106 \pm 0.326$ ,  $4.753 \pm 0.451$ , for nimbleness were  $13.089 \pm 0.744$ ,  $12.543 \pm 0.699$  and for stamina were  $3010.85 \pm 277.3$ ,  $3307.01 \pm 268.9$  respectively.



The mean value and standard deviation of pre-test and post-test results for the control group were as follows: for speed, 5.179 0.339 and 5.030 0.362 respectively; for agility, 13.582 1.196 and 13-481 1.086 respectively; and for endurance, 2942.9 293.8 and 3307.01 268.9 respectively.

In the experimental group, there is a difference between each of the dependent variables (speed, agility, and endurance) before and after the intervention, however in the control group there are no significant changes discovered to have occurred. This can be seen by looking at Table 1 in its entirety. It can be seen from the table that the level of significance for each variable in the experimental group's speed, agility, and endurance is lower than sig 0:05, which is the same as saying that P 0.05. It is possible to state that there has been a change in terms of the experimental group's speed, agility, and endurance after they have participated in interval training.

## DISCUSSION

Physical health is a fundamental requirement for the majority of the duties that an individual must fulfil in a day of existence.(Sagre et al., 2022)Interval training are strenuous workouts that aid athletes to enhance their physical fitness to triumph in the contest. The discoveries of the investigation unveil that engaging in interval training can improve the physical fitness aspects such as velocity, dexterity, and stamina. Interval training has currently extensively employed to ready athletes for a complete spectrum of training intensities from minimal to elevated. Interval training is a method of gradual workouts and guidance aimed at cultivating essential motor abilities and enhancing the athlete's capacity to be more proficient at accelerated velocities, heightened stamina, and with enhanced accuracy. The discoveries of this investigation are in alignment with the prior examination carried out by(Raghuwanshi, 2022). Additionally, this investigation explores that, in general, the coaching methods for Interval training significantly improve football players' efficiency. Furthermore, investigation carried out by(Ahmad et al.,

2020) recommends that the interval training technique in a bid to enhance the athlete's cardiovascular stamina. (Ön, 2022) discovered notable enhancement in nimbleness following the intense interval training regimen. It is thoroughly documented that Interval training has greatly enhance velocity. (Saravanan & Pushpa, 2021), agility (Satheeskumar et al., 2016) and endurance (Ahmad et al., 2020; Getnet, 2019)

## CONCLUSION

Based on the findings of the study, it is feasible to deduce that the football players' selected physiological measurements were significantly enhanced following their involvement in the intermittent exercise for a duration of six weeks. Consequently, it is advised to incorporate interval exercising with athletes, especially younger ones, to amplify the physical fitness aspects of velocity, nimbleness, and stamina during their susceptible development stages. This is due to the fact that this is the crucial element to their advancement and attaining the utmost level, showcasing the impact of its effectiveness on the enhancement of athletic capabilities. Interim training has been demonstrated to possess a favourable impact on the expansion of athletic capabilities. It is additionally feasible to carry out this investigation on youngsters in the sub-junior age category to ascertain the importance of interval exercising at the utmost elementary stage conceivable for football athletes.

## REFERENCE

- Ahmad, H., Arsil, & Syahrastrani. (2020). The Effect of Interval Training on Aerobic Endurance of Football Club Players of Payakumbuh. 460(Icpe 2019), 78–80.  
<https://doi.org/10.2991/assehr.k.200805.023>
- Bovas, J. (2020). Effect of circuit training and interval training on selected physical variable of speed endurance on college men kabaddi players. *International Journal of Physical Education, Sports and Health*, 7(3), 6–9.
- Getnet, D. (2019). Effect of interval and continuous training on the athlete's aerobic fitness level. *International Journal of Physical Education, Sports and Health*, 6(5), 152–156.
- Goodman, B. (1996). HHS panel issues proposals for implementing misconduct report. *Scientist*, 10(15), 3-.
- Kumar, D., & Dhull, K. N. S. (2023). A comprehensive analysis of circuit training: Assessing the benefits and drawbacks for diverse fitness goals. *Journal of Sports Science and Nutrition*, 4(1), 190–193.

- Kumar, D., Dhull, S., Nara, K., & Kumar, P. (2023). Determining the optimal duration of plyometric training for enhancing vertical jump performance: a systematic review and meta-analysis. *Health, Sport, Rehabilitation*, 9(3), 118–133.
- Kumar, D., Nara, K., & Dhull, S. (2023). The advantage and disadvantage of body composition on athletic success: A kabaddi player perspective. *Methods*, 1, 19.
- Lee, K. H., Lee, K., & Choi, Y. C. (2020). Very short-term high-intensity interval training in high school soccer players. *Journal of Men's Health*, 16(2), e1–e8.  
<https://doi.org/10.15586/JOMH.V16I2.211>
- Ön, S. (2022). The Effect of High Intensity Interval Training on Agility Performance. *Pakistan Journal of Medical and Health Sciences*, 16(1), 582–586.
- Raghuwanshi, G. B. (2022). Effect of interval training on endurance and playing ability of kho-kho players. 3(1), 2019–2022.
- Sagre, S., Kumar, N., & Kumar, S. (2022). effects of circuit training on selected physical fitness components of kabaddi players.
- Santosh, D. P. (2022). Relationship between motor ability and anthropometric components of Kho-Kho and Kabaddi players.
- Saravanan, R., & Pushpa, M. (2021). A high intensity interval training profile for performance variables of collegiate volleyball players. ~ 464 ~ *International Journal of Physical Education, Sports and Health*, 8(3), 464–467.
- Satheeskumar, T., Physical, E. J.-I. J. of, & 2016, undefined. (2016). Effect of anaerobic interval training on selected biomotor and skill performance variables among hockey players. *Kheljournal.Com*, 330(5), 330–333.
- Tamilselvan Scholar, S., Hassan, M., Author, C., & Tamilselvan, S. (2022). Impact of SAQ versus skill based training adaptations on agility performance of male kabaddi players. ~ 225 ~ *International Journal of Physiology*, 7(1), 225–228.