

SPECIMEN FORMAT FOR THESES OF MONTH

Faculty : **School of Education**

Department : **Physical Education**

Branch/ Area: : **Sports Training**

Sub Subject Heading: : -

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Title of the thesis : Effect of High Intensity Interval Training, Aerobic
Training and Concurrent Training on Selected
Physical, Physiological and Skill Performance
variables among Football Players

(i) In Roman Script =

(ii) In roman Script =

Nomenclature of Degree: : **Ph.D**

Month & Year of Enrolment: : **January, 2020**

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Name of Supervisor : **Dr. T. Shanmugavalli**

Designation of Supervisor : **Assistant Professor & Head**

**Centre/department/school in
which research was conducted** : **School of Education, Department of Physical
Education**

University's Name & Address : **Avinashilingam Institute for Home Science and Higher
Education for Women - Coimbatore**

Abstract within 300 words:

The aim of this study was to investigate the effects of High-Intensity Interval Training (HIIT), Aerobic Training (AT), Concurrent Training (CHAT) and Control group (CG) on selected physical, physiological, and skill performance variables among football players. Football demands a high level of fitness, combining speed, agility, endurance, and technical proficiency. To identify the most effective training method, the following objectives were formulated: To examine the effects of HIIT on selected performance variables; To assess the influence of aerobic training on physical and skill outcomes; To evaluate the combined effects of HIIT and AT (concurrent training); and to compare the effectiveness of these three training methods.

Hundred intercollegiate male football players aged 18–21 years, with at least two years of playing experience, were randomly divided into four equal groups (n=25 each): Group I (HIIT), Group II (AT), Group III (CHAT), and Group IV (CG). The intervention lasted for Twelve weeks, with each group undergoing its respective training protocol three days per week under controlled conditions. Physical variables assessed included Muscular strength, Muscular endurance, Speed, Power, Agility and Cardiovascular Endurance; physiological variables included heart rate and VO₂ max; and skill performance variables included, passing, kicking, dribbling and shooting.

Pre- and post-test data were collected, and Analysis of Covariance (ANCOVA) was employed to analyze the results, controlling for pre-test differences. The significance level was set at $p < 0.05$. All four groups showed statistically significant improvements in most measured variables. However, the Concurrent Training group (CHAT) demonstrated the most comprehensive enhancement across all physical, physiological, and skill performance domains, with several variables reaching high statistical significance.

In conclusion, Concurrent Training, which combines the strengths of both HIIT and aerobic training methods, was found to be the most effective in enhancing overall football performance.

Keywords : High-Intensity Interval Training, Aerobic Training, Concurrent Training, Football, Physical Fitness, Skill Performance, VO₂ max, ANCOVA, Objectives.

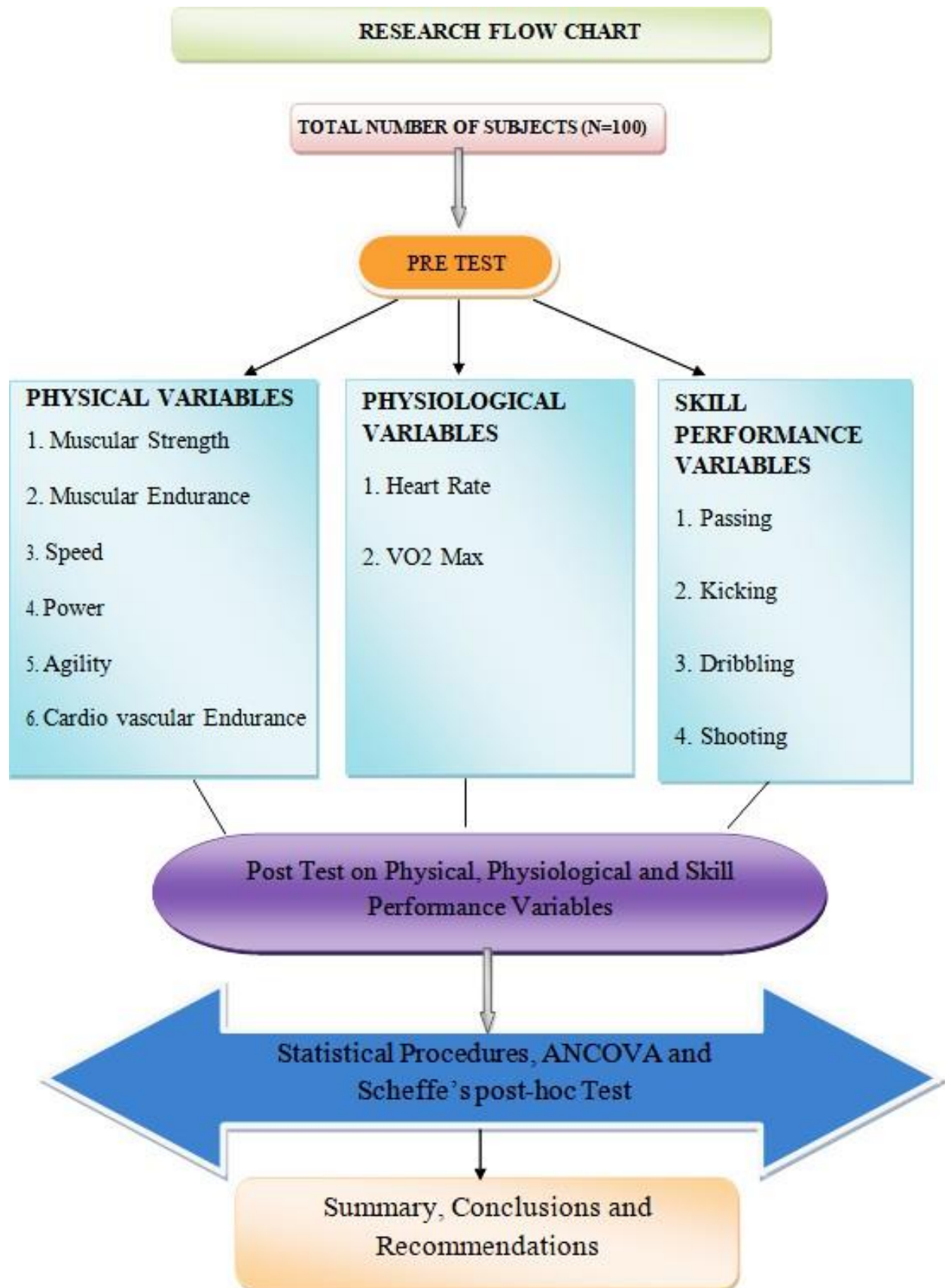
i) Major objectives :

- ii)** To find out the effect of High-Intensity Interval Training (HIIT).
- iii)** To evaluate the effect of Aerobic Training.
- iv)** To investigate the effect of Concurrent High-Intensity Interval Training and Aerobic Training.
- v)** To compare the effectiveness of High-Intensity Interval Training, Aerobic Training, and Concurrent Training.
- vi)** To identify which training method produces the most significant improvement in overall performance among intercollegiate male football players.

ii) Hypothesis:

- 1.** The experimental groups showed significant improvements in selected physical variables compared to the control group.
- 2.** The experimental groups exhibited significant enhancements in selected physiological variables compared to the control group.
- 3.** The experimental groups displayed significant improvements in selected skill performance variables compared to the control group.
- 4.** Concurrent training was more effective than High-Intensity Interval Training and Aerobic Training in improving overall physical fitness, physiological, and skill performance variables among intercollegiate male football players.
- 5.** There were significant improvements in physical fitness, physiological, and skill performance variables among intercollegiate male football players who underwent High-Intensity Interval Training, Aerobic Training, and Concurrent Training.

iii) Methodology :



iv) Findings:

1. **All experimental interventions (HIIT, AET, and CHAT) produced statistically significant improvements** in physical fitness variables, whereas the control group showed no meaningful changes.
2. **Combined training (CHAT) emerged as the most effective overall intervention**, demonstrating superior improvements across multiple performance variables.
3. **Aerobic training (AET) was particularly effective in enhancing muscular strength and muscular endurance**, indicating its strong contribution to foundational fitness development.
4. **High-intensity and combined training methods (HIIT and CHAT) were more effective in improving speed, agility, and power**, highlighting their role in performance-specific adaptations.
5. **Cardiovascular endurance improved significantly across all experimental groups**, with the greatest gains observed in the combined training group, emphasizing the benefit of integrated training approaches.

Examiners

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