Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Today, it is necessary for a physical educator and coach to recognize the vital part science plays in the successful conduct of physical education and athletic programmes. A good understanding of available scientific knowledge will not only result in good teams and better programmes of activities but will also enable protection of the health of players.

The present investigation undertaken by the research scholar is an attempt to prepare physiological and physical profiles of soccer players, because the knowledge available at present is completely inadequate to provide clear cut information regarding the profile of Indian soccer players on physiological and physical variables.

The subjects for this study were a total of one hundred soccer players, aged 18 - 30 years. The subjects had participated in soccer competitions regularly for a number of years in their respective clubs. The selected physiological variables considered for study were Heart rate, Blood Pressure, Respiratory rate, Anaerobic Power, Vital
Capacity, Positive Breath Holding Capacity and Negative Breath Holding Capacity. The physical variables selected were Cardio-Respiratory Endurance, Speed, Agility, Leg Strength, Power, Flexibility, Reaction Time and Body Composition.

The data was collected after employing standard test and measurement procedures. The data was subjected to descriptive analysis and analysis of variance at 0.05 level of significance. ‘F’ required to be significant was 2.46 for 4.95 degree of freedom.

**Conclusion**

On the basis of obtained results and within the limitations of this study, the following conclusions may be drawn:

The average values of Physiological variables of all soccer players were: Heart Rate at rest (57.65 ± 3.86 b.min⁻¹), Heart Rate during game (145 ± 13.29 b.min⁻¹), Heart Rate during recovery (101.59 ± 7.41 b.min⁻¹), Systolic Blood Pressure at rest (114.62 mmHg±4.33), Diastolic Blood Pressure at rest (75.10±3.90 mmHg), Systolic Blood Pressure during game (156.60±10.07 mmHg), Diastolic Blood Pressure during game (61.90±4.05 mmHg), Systolic Blood Pressure during
recovery (127.77±7.69 mmHg), Diastolic Blood Pressure during recovery (71.15±5.08 mmHg), Resting Respiratory Rate (16.35±2.45 per minute), Respiratory Rate during game (34.88±3.58 per minute), Respiratory Rate during recovery (26.41±1.91 per minute), Vital Capacity (4.65±0.40 liters), Positive Breath Holding Capacity (99.72±3.72 sec), Negative Breath Holding Capacity (75.80±2.50 sec) and Anaerobic Power (92.39±8.37 kg.m.sec\(^{-1}\)).

The average values of Physical variables of all soccer players were: VO\(_2\) max (56.96 ±2.63 ml.kg\(^{-1}\).min\(^{-1}\)), Flexibility (9.72±1.54 inches), Standing Broad Jump (2.87±0.10 meters), Strength (157.72±5.85 kg), Height (171.47±6.20 cm), Weight (69.17±2.62 kg), Agility (9.81±0.27sec), Left Foot Reaction Time (0.224±0.036 sec), Right foot Reaction Time (0.225±0.039 sec), Fifty Meter Dash (6.65±0.35 sec), Age (24.49±3.05 years), Body Fat percentage (13.70±0.50 %) and Lean Body Weight (59.67±1.91 kg).

Significant differences were found among different clubs in relation to Resting Systolic Blood Pressure, Systolic Blood Pressure during recovery, Resting Respiratory Rate, Respiratory rate during
game, Vital Capacity, Flexibility, Agility, Left Foot Reaction time, Right Foot Reaction time and 50 meter dash

No significant differences were found among different clubs in case of Resting Heart Rate, Heart Rate during game, Heart Rate during recovery, Resting Diastolic Blood Pressure, Systolic Blood Pressure during game, Diastolic Blood Pressure during recovery, Respiratory Rate during recovery, Positive Breath Holding Capacity, Negative Breath Holding Capacity, Anaerobic Power, VO₂ max, Standing Broad Jump, Strength, Height, Weight, Body Fat and Lean Body Weight

**Recommendation**

In the light of the conclusions drawn the following recommendations have been made:

1. A similar study may be carried out with other parameters not used in this study
2. A similar study may be undertaken using subjects of different games and sports
3. A similar study may be undertaken using sportsmen of different levels (i.e. international players)
4. A similar study may be undertaken with respect to women teams in different sports.

5. A similar study at different stages of training or coaching, such as pre-competition sessions, etc., may be carried out.

6. A separate test battery may be used for selection of players for a particular sport.

7. Before any conclusive implementation of the results is made, there is a need for more extensive research related to talent selection.

8. A similar study may be conducted by employing one extensive sample to cover other age groups and levels of players than the ones employed in this study.

9. Similar studies may be conducted with controlled intensity, as laboratory experiments, following treadmill performance of the soccer players.

10. Comparison by means of biochemical and cardiac performance variables of sports persons belonging to different sports groups can be made.
11. By giving more emphasis to cardiac performance variables, structural and functional changes for elite athletes can be analyzed.

12. The results of similar studies will be guiding factors for classification of different sports events as well as planning of systematic training schedules.

13. Similar tests can be performed and interpreted every month.

14. A similar study may be conducted while training for different durations and on different surfaces.

15. Emphasis can be given to studies on biochemical aspects of training—both long-term and short-term. By monitoring these parameters it would be possible to codify the practical schedule and nutritional requirements of specialized athletes for optimum performance under Indian conditions.

16. Studies can be conducted on soccer players receiving specialized exercise training so that future training is supported by scientific data for excellence in specific fields.

17. Studies on fatigue resulting from different types of exercises can be carried out and its metabolic basis worked out. Such studies
would be of great applied value in enhancing players' performance and would safeguard their health.

18. India is a vast country both from the geographical as well as the genetic lineage point of view. Therefore, to exploit the potential of the masses, sport research should be conducted in different climatic regions and on populations of different genetic origins.