Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Swimming which was considered to be only a survival activity, has now developed into one of the most popular competitive sport at the International and Olympic level. Today the preparation of swimmer for achievement is a complex dynamic state, characterised by high level of physical, physiological and psychological efficiency and the degree of perfection of the necessary skills and knowledge. For the physiological system of the body, to be fit, the systems must function well enough to support the specific activity that the individual is performing. All swims involve the both aerobic and anaerobic work, but in different proportions. This is why events of different distances require a different type of swimmer. The performance of the swimmer have been all the time a matter of great concern for the coaching and sports scientists and continuous efforts is being made in this direction.

The purpose of the study was to compare between national level sprint swimmers and long distance swimmers in selected physical and physiological variables. The other purpose of the study was to prepare a profile on national level sprint swimmers and long distance swimmers in physical and physiological variables.
The physical variables selected were height, weight, lean body weight, fat percentage, grip strength of left hand and right hand separately and arm and shoulder strength. The physiological variables selected were maximum oxygen consumption ($VO_2^{max}$), anaerobic power, resting heart rate, peak flow rate, air flow rate, vital capacity, positive breath holding and negative breath holding time.

Thirty male sprint swimmers and thirty male long distance swimmers of national level (senior) belonging to different states of India were selected randomly as subjects. All subjects were very enthusiastic to prove their mettle.

To examine the significance of the difference between national level sprint and long distance swimmers 't' ratio has been computed.

To determine the selected physical and physiological profiles of national level sprint and long distance swimmers the mean and standard deviation have been evaluated for all the variables.

The level of significance chosen was 0.05.

**Conclusions**

Within the limitation of the present study, the following conclusions were drawn:

1. There was significant difference in arm and shoulder strength between sprint and long distance swimmers.
2. There were no significant differences in height, weight, lean body weight, percentage of fat, grip strength (left hand) and grip strength (right hand) between sprint and long distance swimmers.

3. There were significant differences in maximum oxygen consumption, anaerobic power, peak flow rate, air flow rate and vital capacity between sprint and long distance swimmers.

4. There were no significant differences in resting heart rate, positive breath holding and negative breath holding capacity between national level sprint and long distance swimmers.

5. Quantitatively sprint swimmers were ahead in height, weight, lean body weight, arm and shoulder strength, grip strength (right hand), grip strength (left hand), anaerobic power, resting heart rate (beats/minute), positive breath holding and negative breath holding capacity than long distance swimmers.

6. The long distance swimmers were quantitatively ahead in fat percentage, maximum oxygen consumption, peak flow rate, air flow rate and vital capacity than sprint swimmers.

**Recommendations**

1. It is recommended that similar study may be done using parameters other than those used in this study.
2. Similar study may be undertaken with female swimmers as subjects.

3. Similar study may be repeated with junior and sub-junior swimmers as subjects.

4. It is recommended that the present study may be undertaken by selecting subjects of different age group and achievement level other than those employed in this study.