Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Atmosphere serves as a supplier of oxygen for life, media of waste disposal, filter for solar radiation, heat and transport medium. In general the atmosphere be it a rural or urban have remained reasonably fixed over time.

Increase in pollution level in environment is parallel to the rise of respiratory, cardio-vascular and other diseases.

A healthy population is not merely the target of development but it is the very engine of development. But unfortunately today we can not demand pollution free environment at the cost of industries to collapse. It is better to mention that pollution hazards and problems due to that are comparatively less in a rural set-up.

So the best way to get rid of these pollution effects it is better to strengthen those organs through participation in a conditioning programme and thus to increase the functional capacity of the systems. It is fair to say that the evidence for physical training as a preventive in diseases and or premature in aging is inconclusive.

The purpose of the study was to assess the effect of industrial pollution on the selected cardio-respiratory variables
of the industrial inhabitants and to compare those with that of a rural area. The sub-purpose of the study was to conduct a conditioning programme of eight weeks in a selected industrial zone and in the rural zone and to see its effect on the selected variables.

Study was conducted in four industrial zones viz. cement, jute, coal and heavy and in a rural zone. Subjects were 200 in number from each zone of 18 - 25 years of age group. The conditioning programme was conducted on 30 subjects for eight weeks in coal industrial zone as well as in the rural zone.

Selected variables for the studies were breath holding capacity (both positive and negative) measured in terms of duration in second, vital capacity in terms of litre, air flow rate in terms of litre/minute, peak expiratory flow rate in terms of litre per minute, resting heart rate in terms of beats counted per minute, percentage haemoglobin (gm./100 ml.) of blood) and cardiovascular endurance in terms of distance covered in kilometers.

The data was collected in four industrial and one rural zone and was analysed using one way analysis of variance and in case of significant results, least significant difference method for post-hoc test was applied. Pre-test and post-test data on conditioning effect for both experimental and control groups from both industrial and rural zones were computed using 't' test. .05 level of confidence was choiced to test the significant differences in all cases.
The findings by one way analysis of variance for all the industrial and rural zones in all the variables had significant difference.

The training and conditioning effect in both industrial and rural zones showed significant improvement in the variables negative breath holding capacity, peak expiratory flow rate, percentage haemoglobin in the blood, and cardio-vascular endurance. Significant improvement was there in case of positive breath holding capacity for the industrial experimental group only. Training and conditioning effects though improved in post test means yet yielded insignificant results in the variables, positive breath holding capacity for rural experimental group, vital capacity, air flow rate and resting heart rate for both industrial and rural experimental groups. The control groups in both industrial and rural zones resulted very slight and insignificant change during this eight weeks period.

Conclusions

Within the limitations of the present study, the following conclusions appeared justified as per the results obtained.

1. The rural inhabitants were in better condition and had significant difference with other zones in all the accepted variables.
2. The subjects from coal industrial zone in all the accepted variables were in worst most condition when compared with other zones.

3. In all the selected variables order of various zones when the mean scores sequentially arranged were as follows:
   Rural, Jute, Cement, Heavy and Coal.

4. Training had resulted in quantitative improvement on the selected variables of subjects from both industrial and rural zones.

5. Training of eight weeks duration had identical effects i.e. significant improvements in negative breath holding capacity, peak expiratory flow rate, haemoglobin percentage in blood, and cardio-vascular endurance. Insignificant improvements occurred in vital capacity, air flow rate, and resting heart rate of subjects from selected industrial and rural zones.

6. Training of eight weeks duration yielded significant improvement in positive breath holding capacity only for the subjects of industrial experimental group but not for the subjects of rural experimental group.

**Recommendations**

In the light of conclusions drawn, the following recommendations have been made:
1. While selecting the place for residence preference should be given to find out a place which is rural and relatively less polluted than that of highly polluted industrial belt.

2. In order to reduce the pollution effect as well as to strengthen the physiological variables regular participation in a training programme is obligatory for every body be it from rural or industrial areas.

3. A similar study may be conducted by using subjects belonging to different sex and age groups other than used in this study.

4. A similar study may be conducted by using the variables other than the variables used in this study.

5. A similar study may be conducted by using industrial zones other than used in this study.

6. A similar study may be conducted by using training and conditioning programme of different kinds and durations other than used in this study.