Chapter-V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Rapid modernization of human civilization with industrialization based activities have completely altered life style pattern throughout the world.

Though this has resulted unprecedented economic prosperity, mechanization has made human life sedentary and significant absence of activeness. The increasing purchase power, professional stress, dietary habit etc. have altogether increased health hazard and risk factor multifold.

Concurrently it is also seen that, awareness about health is prevailing among sizable segment of Indian city population. This is evident from the fact that every class of Indian city today has number of health clubs. Survey shows health club in our country are doing brisk business to that extent that, government have clamped service taxes on it.
This health club culture scenario have thrown open some critical issues before physical educator and health conscious fraternity – in terms of ethics in training, service satisfaction, qualifications/experiences/competence of health club trainer etc.

Fitness improvement, weight reduction, look improvement, obesity control, post cardiac/diabetic/arthritis treatment rehabilitation etc. were found to be most common reasons of people visiting health club.

The point of contention have arises as majority of health club being based on resistance training, in the form of weight training. Does this forms of training is suitable for people who visits health clubs with host of purposes?

All above mentioned contentious issues have made research scholar to think that an urgent need has been necessitated to design resistance training of various types to understand its effect on all the health parameters as well as fitness parameters.

It was also needed to understand whether resistance training can be prescribed at par with other forms of training like aerobics, calisthenics, yoga, running and jogging.
Hence conceptualization of this study resulted research scholar purposively selecting blood lipid and body fat percentage to investigate upon, as these parameters were critical health indicator as well as risk factors to health hazard like obesity, diabetic, hypertension etc.

With this conception as prime consideration, research scholar envisaged the study finally as to investigate the effect of high intensity and low intensity weight training programme on blood lipids and body fat.

The subject for this study were from Indore (Madhya Pradesh). Subjects selected for the study were recently oriented and took up weight training. A total of sixty subjects were selected. The age of the subject ranged from 20 to 28 years. These subjects were randomly selected as following group's Experimental group-I (20), Experimental group-II (20), Control group - (20).

The selected blood lipids (High density lipoprotein & Low density lipoprotein) was measured by the analysis of the blood samples by a professional biochemist. The obtained score was recorded in mg% Fat percentage was measured by Slown Weir Nomogram Technique. In these technique two sites (Thigh and Subscapular) skin
thickness was used. Lean Body weight was calculated by subtracting
the fat weight of the subjects from their total body weight. Weight was
recorded to nearest half kilogram.

Data were taken at Body temple, Talvalkar Gym and Bengal
Health club when the subjects were not busy and had enough time to
spare for testing. Necessary instruction was passed on to the subjects
before the administration of each test. Confidentiality of response was
guaranteed.

Random group design was adopted for this study. The subjects
were randomly divided into three groups, Two experimental and one
controlled group, consisting of 20 subjects each.

To determine the effect of low intensity and high intensity
weight training programme on blood lipids and body fat the mean and
standard deviation was used. To compare blood lipids and body fat at
initial stage and final stage of eight weeks weight training programme,
analysis of covariance was applied at .05 level of significance.

The statistical analysis revealed the mean and standard
deviations of subject's blood lipids at different intensities (high
intensity training, low intensity training and control group). The
observed mean and standard deviation of blood lipids. **PRE TEST**

**HDL** high intensity $42.28 \pm 5.51$; low intensity $40.95 \pm 5.27$; control group $41.69 \pm 4.98$; **POST TEST HDL** high intensity $44.29 \pm 5.07$; low intensity $43.36 \pm 5.33$; control group $41.44 \pm 4.98$; **PRE TEST LDL** high intensity $116.23 \pm 11.28$; low intensity $112.91 \pm 12.23$; control group $112.84 \pm 13.01$; **POST TEST LDL** high intensity $115.04 \pm 10.22$; low intensity $110.61 \pm 11.08$; control group $113.68 \pm 13.32$; **PRE TEST FAT PERCENTAGE** high intensity $13.01 \pm 3.76$; low intensity $12.15 \pm 3.54$; control group $11.40 \pm 3.75$; **POST TEST FAT PERCENTAGE** high intensity $12.73 \pm 3.81$; low intensity $9.16 \pm 2.53$; control group $11.39 \pm 3.80$ were, respectively.

a) Significant difference was found in case of HDL between adjusted final mean of low intensity training and control group, High intensity training and control group. The difference between means was higher than critical difference for adjusted means. On the other hand insignificant difference was found between the adjusted final means of High intensity and low intensity training. The difference between means was lower than critical difference for adjusted means.

b) Significant difference was found in relation to LDL between adjusted final mean of low intensity training and control group. The
difference between means was higher than critical difference for adjusted means. Further, significant difference was found between the adjusted final means of High intensity and low intensity training. The difference between means was higher than critical difference for adjusted means.

No significant difference was found between adjusted final mean of High intensity training & control group. The difference between means was less than critical difference for adjusted means.

c) Significant difference was also found between the adjusted final means of low intensity training & control group and low intensity training & high intensity training when compared on fat percentage. The difference between means was greater than critical difference for adjusted means.

**Conclusions**

Based on statistical analysis, their critical observations and interpretation, discussion hence made upon, existing critical literature reviewed and scholar's own understanding of each and every aspects of whole experiment would like to make following inferences.
1. Resistance training programme based on weight training can be successfully designed and highly effective in reducing body fat, weight control as well as reduction & improvement of blood lipid profile.

2. Low intensity training based programme are more effective to improve lipid profile and body fat reduction than high intensity programme.

3. Weight training programme planned and designed carefully on low intensity training parameters can be very well prescribed for betterment of health status as well as fitness improvement.

4. If programmed intelligently considering individuals existing ability and limitations and resistance assessment protocols, weight training can be well prescribed as a substitute for other popular forms of training also.

5. Effect of weight training programme is dependent on careful implementation of training schedule, well planned exercise organization, full proof intensity monitoring, periodic load assessment and progressive changing.
6. Low intensity weight training programme significantly effected LDL decrease and HDL increase.

7. Further, low intensity weight training programme also significantly effected reduction of body fat.

8. High intensity weight training programme is also effective in significantly increasing HDL percentage but it has no significant effect on LDL.

9. High intensity weight training programme is not effective for the purpose of reducing body fat.

**Recommendations**

Keeping every facts pertaining to this study in fore front, inferences drawn upon findings there off research scholar is of view that the accomplishment of this research project have significantly added knowledge to existing training and health literature though on very limited health parameters.

Based on all this understanding scholar would like to offer following recommendations.
1. Resistance training in the form of weight training is an effective training means as well as method and should be prescribed for the purposes as other forms of training like Aerobics, Calisthenics, Running etc. provided appropriate load parameters are designed accordingly.

2. Low intensity weight training program is highly recommended for body weight control and lipid profile improvement; reduce heart risk factor, preventive as well as rehabilitative for diabetic and obese patient.

3. Research projects in large scale should be taken up to investigate effects of variations of low intensity of weight training on different adult age group.

4. Investigation should be carried out to find out effect of weight training on life style disease like, acute obesity and diabetes.

5. Research programme should be taken up to investigate the effect of weight training on all the blood parameters and anthropometric variables.
6. Research programme should be taken up to investigate effect of weight training on all the fitness parameters.

7. Research programme should be taken up to investigate effect of weight training on other physical and physiological parameters.

8. Research programme should be taken up to investigate effect of weight training on bone density of all age groups, sex, types etc.