CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

In India the diabetic population was rapidly increasing with 30 million diabetic patients, the largest in the world. Forty percent of all diabetic admissions to hospitals in India is due to foot problems. Researches showed that walking has been shown to reduce cholesterol levels, have a protective effect from coronary heart disease, reduce body weight, reduce blood pressure and improve circulation in medical patients. Walking about 30 minutes after eating has been beneficial in keeping post prandial blood sugars in control for many patients. They feel that they can accomplish a 20 to 30 minutes walks 2 or 3 times per day and over a couple of months, they feel better. Many have reduced their medication levels during their tenure in their walking programme.(Girish and Sridhar, 2007)

Researches also proved that aerobic exercises significantly altered blood glucose, blood cholesterol, blood lipids and other benefits to different population. Different researches have proved that dieting regulations could contribute much for managing diabetics. However, researches are scarce combining the aerobic exercises with dieting regulations in managing diabetics. Hence, the investigator in this study made an attempt to find out the effect of aerobic exercises with and

without low glycemic diet on selected physical, physiological, biochemical and hematological variables among type 2 diabetics mellitus men.

Physical activity (PA) is a key element in the prevention and management of type 2 diabetes, many with this chronic disease do not become or remain regularly active. High-quality studies establishing the importance of exercise and fitness in diabetes were lacking until recently, but it is now well established by Sheri, et al. (2010) that participation in regular PA improves blood glucose control and can prevent or delay type 2 diabetes, along with positively affecting lipids, blood pressure, cardiovascular events, mortality, and quality of life. Structured interventions combining PA and modest weight loss have been shown to lower type 2 diabetes risk by up to 58% in high-risk populations. Most benefits of PA on diabetes management are realized through acute and chronic improvements in insulin action, accomplished with aerobic exercises. The effect of combining aerobic exercises with diet restrictions were not fully explored Hence, the investigator made an attempt to find out the effect of floor aerobics exercises with and without low glycemic diet among type II diabetics mellitus males.

The aim of the study was to discover whether there would be any significant effect of floor aerobic exercises with and without low glycemic diet on physical physiological biochemical and hematological variables among male type II diabetic mellitus. To achieve the purpose of the study among 100 people 45

male type II diabetic mellitus were selected from Chennai district. They were randomly divided into three equal groups and each group consists of 15 subjects. Experimental group I underwent Aerobics with low glycemic diet, Experimental group II underwent Aerobics without low glycemic diet control group was not undergone any training.

The following variables were selected for this study,

PHYSICAL VARIABLES

- Body Mass Index
- Percentage of body fat

PHYSIOLOGICAL VARIABLES

- VO_2 Max
- Blood Pressure

BIOCHEMICAL VARIABLES

- Low Density Lipoprotein
- High Density Lipoprotein

HEMATOLOGICAL VARIABLES

- Hemoglobin
- Fasting Blood Sugar
- Postprandial blood sugar

The research design of the study is random group design. The selected 45 subjects were assigned into three groups namely, experimental group I, experimental group II and control group, and each group consisting of 15 subjects. The pretest was administered to assess the selected variables among three groups. A pilot study was conducted before analyzing of training programme to ensure the suitability and duration of exercise. The experimental treatment was conducted for a period of 12 weeks on alternative days, thrice a week. Experimental group I underwent Aerobics exercises with low glycemic diet, Experimental group II will undergo Aerobics without low glycemic diet control group did not undergo any training. The training was given for a period of 60 minutes. Immediately after the experimental period, post test were conducted to assess the selected variables among three groups. The differences between the initial and final scores on selected variables were considered as the effect of floor aerobics exercises with and without low glycemic diet among the subjects. To test the statistical significance, ANCOVA was employed.

5.1.1 LEVEL OF SIGNIFICANCE

The subjects were compared on the effect of aerobic exercises with and without low glycemic diet on selected physical, physiological, biochemical and hematological variables among male type II diabetic mellitus. The differences between means of initial and final scores on selected criterion variables, were subjected to statistical treatment using ANCOVA. In all the cases, 0.05 level of

confidence was fixed to test the significance, which was considered as appropriate.

5.1.2 FINDINGS

Based on the results of the study, it was found that floor aerobic exercises with low glycemic diet was significantly better than floor aerobic exercises without low glycemic diet contributed for beneficially altering selected physical, physiological, biochemical and hematological variables among type 2 diabetic mellitus males and there was no significant differences on percent body fat, low density lipoprotein, between the treatment groups.

5.2 CONCLUSIONS

1. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected physical variable, body mass index compared to control group. Comparing between treatment groups, it was found that floor aerobic exercises with low glycemic diet was significantly better than floor aerobic exercises without low glycemic diet group among type 2 diabetics mellitus males.

2. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected physical variable, percent body fat compared to control group. Comparing between treatment

groups, it was found that there was no significant differences between floor aerobic exercises with and without low glycemic diet groups among type 2 diabetics mellitus males.

3. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected physiological variable, VO2 max compared to control group. Comparing between treatment groups, it was found that floor aerobic exercises with low glycemic diet was significantly better than floor aerobic exercises without low glycemic diet group in altering VO2 max among type 2 diabetics mellitus males.

4. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected physiological variable, systolic blood pressure compared to control group. Comparing between treatment groups, it was found that floor aerobic exercises with low glycemic diet was significantly better than floor aerobic exercises without low glycemic diet group in altering systolic blood pressure among type 2 diabetics mellitus males.

5. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected physiological variable, diastolic blood pressure compared to control group. Comparing between treatment groups, it was found that floor aerobic exercises with low

glycemic diet was significantly better than floor aerobic exercises without low glycemic diet group in altering diastolic blood pressure among type 2 diabetics mellitus males.

6. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected biochemical variable, low density lipoprotein compared to control group. Comparing between treatment groups, it was found that there was no significant differences between floor aerobic exercises with and without low glycemic diet groups in altering low density lipoprotein among type 2 diabetics mellitus males.

7. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected biochemical variable, high density lipoprotein compared to control group. Comparing between treatment groups, it was found that floor aerobic exercises with low glycemic diet was significantly better than floor aerobic exercises without low glycemic diet group in altering high density lipoprotein among type 2 diabetics mellitus males.

8. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected hematological variable, hemoglobin compared to control group. Comparing between treatment

groups, it was found that floor aerobic exercises with low glycemic diet was significantly better than floor aerobic exercises without low glycemic diet group in altering hemoglobin among type 2 diabetics mellitus males.

9. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected hematological variable, fasting blood sugar compared to control group. Comparing between treatment groups, it was found that floor aerobic exercises with low glycemic diet was significantly better than floor aerobic exercises without low glycemic diet group in altering fasting blood sugar among type 2 diabetics mellitus males.

10. It was concluded that 12 weeks floor aerobic exercises with and without low glycemic diet significantly altered selected hematological variable, postparandial blood sugar compared to control group. Comparing between treatment groups, it was found that floor aerobic exercises with low glycemic diet was significantly better than floor aerobic exercises without low glycemic diet group in altering postparandial blood sugar among type 2 diabetics mellitus males.

5.3 RECOMMENDATIONS

The findings of this study proved that floor aerobic exercises with and without low glycemic diet contributed to beneficially alter selected physical,

physiological, biochemical and hematological conditions of type 2 diabetic mellitus males. In view of the findings of this study, the following are recommended.

1. The protocols experimented in this study requires no equipment and can be performed by person of any age, hence, floor aerobic exercises may be popularized among diabetic patients for managing their diabetics.

2. Fitness trainers and physicians can prescribe floor aerobic exercises with low glycemic diet for managing diabetics of such patients.

3. The importance of low glycemic diet in addition to the physical activities have not yet been recognized by all, hence adequate attention may be given among diabetic patients on the need of adopting low glycemic diet regulations.

5.4 SUGGESTIONS FOR FURTHER RESEARCHES

During the course of the study, the investigator came across number of new ideas and suggestions which could be addressed by future researchers. Some of the most important ones are given below:

1. Similar researches may be undertaken to find out the differences in improving physical, physiological and biochemical variables among type 2 diabetics mellitus women patients.

2. A study to compare the effects of different forms of physical activities, such as aerobic exercises, step aerobic exercises, aqua aerobic exercises would throw more light on effects of different training protocols among diabetic patients..

3. A separate research may be undertaken to find out the effect of low glycemic diet on selected physical, physiological, biochemical and hematological levels of diabetic patients to highlight the importance of diet in managing diabetics.

4. A similar study with large number of subjects may be conducted to support the findings of this study.