7.0 SUMMARY

⇒ Diabetic population in India is projected at 60 million in the year 2011.

⇒ Baseline characteristics from 14 point questionnaire reveals 39% of the subjects to be hypertensive, 43% of the participants are smokers, 53% are alcoholics, 78% of the subjects had sedentary occupation, Per cent has known coronary artery disease, % of subjects are found to have % of family history of diabetes, % of the subjects had eye complications, and % of the participants are found to have musculoskeletal ailments.

⇒ Results of this study have analyzed the effect of aerobic exercises, physioball exercises and a control group subjects among male type II diabetic patients using physical and biochemical parameters indicates as follows.

⇒ A reduction in waist circumference among physioball subjects by more than two times than aerobic exercises is recorded; it is noteworthy that physioball exercises are quite effective in reducing the risk for cardiovascular complications and improved glycemic control among type II diabetic subjects.

⇒ Body mass index, which has shown a reduction with physioball exercises by three times than aerobic exercises is effective in lowering hypertension, cardiovascular risk an improved glycemic control, cost effective and improved individual well being.

⇒ Lowering of resting heart rate indicates that the heart has become more efficient through training, that it requires less energy in the trained condition for the heart to do the same work which is true among physioball subjects where resting heart rate is lowered by two times than aerobic exercises, hence an impact on cardiovascular system is evident among type II diabetic male subjects.

⇒ Physioball exercises have two fold effect than aerobic exercises in lowering blood pressure among type II diabetic subject is prudent with its impact on improved health.
Physioball exercises are two old effective than aerobic exercises in improving glycemic control and reducing micro and macro vascular complications associated with type II diabetic subjects, is highly noteworthy to be included in the comprehensive diabetic management.

Physioball subjects benefit by a lowered risk for CAD by 7.6%; thus physioball exercises are twice effective than aerobic exercises in lessening the risk of CAD by lowering LDL among Type II diabetic patients.

While aerobic subjects have a benefit of decreased risk of CAD by 2%, physioball subjects have a benefit of decreased risk for CAD by 6%; Hence physioball exercises are efficient by improving the HDL 3 times stronger than aerobic exercises, thereby decreasing the risk for CAD among Type II diabetic patients.

Physioball helps to lower total cholesterol than aerobic exercise, thereby lowering the risk of Type II diabetic patients for CAD.

In this study aerobic subjects have a lowering of triglyceride by 5.49% and physioball subjects a lowered triglyceride by 7.10%; Thus physioball is stronger than aerobic exercises in lowering the risk for macro vascular complications among Type II diabetic patients.

An improved quality of life means a lot with lot to type II diabetic mellitus, a chronic metabolic disorder having an influence on his mental, psychological and social life.

Subjective evaluation of overall scores on their quality of life, a major outcome of this study points to an improved score among aerobic subjects by 11% and by 25% among physioball subjects with a decreased score by 6% among control group subjects, is quite evident that physioball exercises helps to improve the quality of life by more than two than aerobic exercises among type II male diabetic patients.
Subjective evaluation on overall physical wellbeing of all the participants at the completion of this study have shown only 4% have improved score and 64% remained the same and 28% with worse state among control group. Among aerobic subjects 32% have improved score, 66% remained the same, 2% became worse, and among physioball exercise group 70% have improved score and 30% remained the same, is highly indicating that physioball subjects are more than two fold improved score on their overall physical well being.

Subjective scores of evaluation, on their overall emotional state at the completion, have shown among control group subjects none with better score, 58% remained the same and 42% became worse, among aerobic subjects 14% have got better, 84% remained the same and 2% got worse, while physioball subjects 56% got better, 44% remained the same.

Subjective evaluation of all the subjects on their overall enjoyment of life, up on completion of the study, shows while none have improved, 76% remained the same and 24% got worse among control group. Among aerobic exercise subjects 34% got better, 62% remained the same and 4% got worse, while among physioball subjects 62% got better, 38% remained the same, indicating that physioball exercises are nearly two times effective in improving overall enjoyment life of subjects with type II diabetic male, thus enhancing their quality of life to a larger extent, a major outcome of this study, to be considered a new focus for the diabetic management.

Subjective evaluation by all the participants overall ability to handle stress on completion of the study, among control group subjects 62% remained the same and 38% got worse. Among aerobic exercise subjects 18% have improved, 78% remained the same and 4% got worse, while among physioball subjects 58% got better, 42% remained the same, thus physioball exercises are three fold stronger in improving overall ability to handle stress among type II male diabetic patient gets proven, and so improving the quality of life of them.
Subjective evaluation on overall quality of life, up on completion of the study by all the participants, indicates 84% remained the same, and 16% among control subjects, among aerobic subjects 34% have better scores, 60% remained the same and 6% got worse, while physioball subjects 60% have got better and 40% remained the same, which indicates physioball exercises are nearly two time efficient in improving the overall quality of life among male type II diabetic subjects gets prudent.

Exercise prescription for type II diabetic mellitus should include physioball exercises as a modality of physical activity, a major recommendation of this study’s outcome.

As a mean of prophylactic, study using physioball for overweight, obese, non diabetic among adults and children should be considered by researchers.

Benefits shown in this study using physioball and biochemical parameters among type II diabetic mellitus can further be studied on female subjects as well type I diabetic subjects.

Limitations with physioball being it requires supervised performance with activities by a qualified physiotherapist, being high amount of energy expenditure involved with multiple co contractions required, for each Activity, not to hold breath while doing activity, slipping of lower extremities from ball.

Advantages apart from, scientific findings in this study being an indoor nature, less frequency of work out per week, cost effective and time conserving when compared with conventional aerobic exercises.

Future studies with other neurological ailments, muscular skeletal ailments and sports injuries with physioball are worth researching.