7. SUMMARY & CONCLUSION

The prevalence of depression (7%) among diabetes patients is as per the following sequence,
Newly diagnosed Type 2 DM > Severe Type 2 DM > Moderate Type 2 DM

The pharmaceutical care provided was helpful in reducing the severity of depression among the type 2 diabetes patients, reducing LDL and triglycerides levels while didn’t show significant improvement in glycemic levels. This portion of study alarms the need for screening diabetes patients for the presence of depression. Now in clinical practice focus is only given on diabetes treatment and prevention of its complication, but it should also consider the screening for depression as the depressed patients fails to achieve glycemic control.

The madhumegha chooranam capsule showed comparable antidiabetic activity as that sulfonylurea (glibenclamide / glimepiride) or metformin. Similarly the nilavembu kudineer chooranam showed comparable antidiabetic activity as that of (glibenclamide / glimepiride) or metformin. The addition of the MMC / NKC provided similar antidiabetic property to the dual drug combination sulfonylurea + biguanide. Further the addition favored better reduction in the postprandial blood glucose level and reduced number of adverse effects (hypoglycemia). There was better blood glucose reduction when the MMC / NKC given with metformin and glibenclamide or glimepiride. There was no clinically significant side effects seen when the MMC / NKC given with metformin and glibenclamide or glimepiride. Importantly the usage of MMC/ NKC is not associated with weight gain. The main
adverse effects of sulfonyl urea i.e hypoglycemia is ameliorated when MMC / NKC given along with them. The patients under pharmaceutical care showed significant glycemic control (p< 0.05) comparing the non pharmaceutical group. Hence it is possible by involving pharmaceutical care plan along with these drugs to achieve tighter blood glucose levels. The patients who had poor glycemic control were selected and subjected to stringent follow up. The subjects under stringent monitoring showed significant reduction in HbA1c levels at week 12 from baseline. There was no statistically significant change in the BP, SrCr and urine albumin levels at the week 12 when compared to baseline. The total cholesterol, LDL levels and triglycerides reduced significantly from the baseline while the HDL estimates shown an significant increase. There were 6 incidence of hypoglycemic events reported (R) under stringent follow up which can be corrected by changing the diet or exercise plan. Based on the above data newer treatment strategies that can be applied to government hospitals in Tamilnadu, India is prepared.
The treatment strategy or algorithm is based on the fasting blood glucose level and is as follow:

### Mild T2DM (Fasting Plasma Glucose 126 to 160 mg/dL)
- **MMCh**
- **GLI/GLIME**
- **MET**

- **PC**
- **PC**

- **MET/MMC**
- **MMC**

- **Increase to Maximum Effective Dose**

Reassess every 3 months

**ADD**

**Stringent Monitoring**

### Moderate T2DM (Fasting plasma glucose >160 to <240 mg/dL)
- **MMC + GLI**
- **MMC + GLI/GLIME**
- **MMC + MET**

- **PC**
- **PC**

- **ADD**
- **MET**
- **GLI/GLIME**

- **Increase to Maximum Effective Dose**

Reassess every month

**Stringent Monitoring**

### Severe T2DM (Fasting plasma glucose >240 mg/dL)
- **NKC**
- **NKC + MET**
- **NKC + GLI/GLIME**

- **PC**
- **PC**

- **ADD**
- **GLI/GLIME**
- **MET**

- **Increase to Maximum Effective Dose**

Reassess every 15 days

**Stringent Monitoring**
The gender wise exercise barriers were assessed in the Nilgiris population, the barriers are ranked from one to ten. The top three barriers for women are family commitment, lack of social support and lack of time; similarly the top three barriers for men are lack of time, lack of interest and unawareness of regular exercise’s importance, respectively.

Many studies recommend only a general management plan for T2DM whereas this study reports while recommending exercise strategies, gender should be considered and strategy plans framed accordingly. The RE behavior of most people with T2DM in the Nilgiris district, Tamil Nadu State, India does not comply with guidelines. It is better late than never to start motivation to those subjects with an individual exercise regimen considering gender wise barriers. In conclusion, RE practices of type 2 diabetic patients in the study site are inadequate. Several internal and external barriers gender wise to RE were ranked. Therefore, strategies aiming at overcoming these barriers and improving motivators are urgently needed.

The contribution of the Community Pharmacists in three districts of Tamilnadu viz Chennai, Coimbatore and Nilgiris was assessed for 14 elements. The results showed the inadequate contribution from community pharmacist towards DM management.
Community Pharmacist plays a major role towards management of type 2 diabetes. They are the direct and final link in the process of drug therapy. Without their contribution the earlier detection of diabetes, proper management and delaying the diabetes related complications can’t be achieved. The results of this study show that the awareness, understanding their importance and role towards diabetes management service are not sufficient. The outcome of this work is to sensitize the community pharmacist and regulatory authorities about their need and responsibility. Suitable continuing pharmacy education program national wide along with reasonable incentives, implementing diabetes monitoring program through collaboration with health care systems which also includes pharmacy colleges and Diabetic Associations are required to facilitate better diabetes management services in India