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## A Study to compare the effect of Fenugreek vs Cinnamon on Blood Sugar among Type-II diabetic patients

Dr. N. Adlin Shiniya

[adlinshiniya2015@gmail.com](mailto:adlinshiniya2015@gmail.com)

Annammal College of Nursing, Kuzhithurai, Tamil Nadu

### ABSTRACT

*The present study was conducted to assess the effectiveness of Fenugreek Vs Cinnamon on Blood Sugar among Diabetes patients at Sree Mookambika Medical College Hospital, Kulasekharam, Kanyakumari District. A Quantitative Evaluative approach was adopted to compare the effectiveness of Fenugreek verses Cinnamon on Blood Sugar level among type-II Diabetes patients. The study design adopted was an Experimental design, Factorial in nature. The samples were selected Purposively and Randomly assigned. Effectiveness of two interventions were compared. The sample size was estimated by power analysis prior to the commencement of the study was  $N=4pq/d^2$ . The Mean of Mean difference of FBS in Fenugreek group, -10.42 (SD 10.093) was greater than the Mean of Mean difference of FBS in Cinnamon group -5.88 (SD 9.639) and  $t = -2.516 (<0.05)$  was highly significant. The investigator concluded that, Both Fenugreek and Cinnamon were effective in reducing Blood sugar (FBS, PPBS, HBAIC) among Type-II Diabetes Mellitus patients.*

**Keywords:** Fenugreek, Cinnamon, Blood Sugar, Diabetes Patients.

### 1. INTRODUCTION

Metabolic disorders play a major role in an individual life crippling the abilities to function as a productive member of the family. They affect the ability of the cell to perform critical biochemical reactions that involve the processing or transport of proteins, carbohydrates, or lipids. Diabetes is a one such major metabolic disorder. Although it can be controlled, it lasts a lifetime.

### 2. STATEMENT OF THE PROBLEM:

A Study to compare the effect of Fenugreek Vs Cinnamon on Blood Sugar among Type-II diabetic patients.

### 3. OBJECTIVES

- To evaluate the blood sugar level before and after taking fenugreek among patients with Type-II diabetes in Fenugreek group.
- To evaluate the blood sugar level before and after taking Cinnamon among patients with Type-II diabetes in Cinnamon group
- To compare the mean difference in blood sugar between fenugreek group and cinnamon group.
- To test the association between the mean difference in blood sugar and selected factors among patients Type-II diabetes in both group

### 4. OPERATIONAL DEFINITIONS

**Effect:** Refers to judgement, in this study it refers to the outcome after the consumption of the fenugreek Vs Cinnamon among Type-II diabetic patients.

**Fenugreek:** It refers to the consumption of raw seeds of fenugreek (2 tsp) soaked in 1 glass of H<sub>2</sub>O overnight and consuming the water and seeds in empty stomach in morning for 3 months.

**Cinnamon:** It will be administered in the form of 6 gm powder dissolved in 30ml of water and consumed daily once before breakfast for 3 months.

**Blood Glucose Level:** Refers to the level of FBS assessed by empty stomach, PPBS assessed after two hours of FBS three times totally by Glucometer and Glycosylated Haemoglobin assessed from Clinical Laboratory after three month interval.

**Type-II Diabetes:** Refers to those patients who were diagnosed to have Type-II diabetes mellitus whose fasting blood Sugar level will be more than 110 mg/dl. Post-Prandial more than 140mg/dl and HBA1C more than 6.5 mg/ dl.

## 5. RESULTS AND DISCUSSION

**The findings were discussed based on the objectives of the study:**

### **Findings on Mean difference of (FBS, PPBS, HBA1C) between Fenugreek and Cinnamon group**

The Mean of Mean difference of FBS in Fenugreek group was -10.42 and (SD 10.093) was greater than the Mean of Mean difference of FBS in cinnamon group was -5.88 and (SD 9.639),  $t = -2.516$  ( $<0.05$ ) was highly significant.

The Mean of Mean difference of PPBS in Fenugreek group was 35.07 and (SD 22.419) which is greater than the Mean of Mean difference of PPBS in Cinnamon group -14.30 and (SD 16.249),  $t = -5.810$  ( $<0.001$ ) was highly significant .

The Mean of Mean difference of HBA1C in Fenugreek group 1.86 (SD 0.921) greater than the Mean of Mean difference of Cinnamon group 1.35 (SD 1.076) at  $t = 2.817$  ( $<0.001$ ) was significant.

### **Findings on association between the Mean difference in blood sugar (FBS) and selected factors among Type-II Diabetes Mellitus in Fenugreek group:**

There was a significant association between the mean difference in Blood sugar and Marital status  $t = 2.539$  ( $<0.016$ ),  $\beta = 14.415$  (95% CI 2.890 – 25.940); Anti-Diabetic treatment  $t = 2.593$  ( $<0.014$ ),  $\beta = 7.442$  (95% CI 1.616-13.268); Stress  $t = 2.963$  ( $<0.005$ ),  $\beta = 7.129$  (95% CI 2.245-12.013) and Rate of sleep  $t = 2.310$  ( $<0.027$ ),  $\beta = 7.827$  (95% CI 0.948- 14.706 )}.

### **Findings on Association between the Mean difference in blood sugar (PPBS) and selected factors among Type-II Diabetes Mellitus in Fenugreek group**

There was a significant association between the Mean difference of blood sugar PPBS and selected factors like Occupation  $t = -2.358$  ( $<.024$ )  $\beta = -14.741$ , (95% CI (-27.435-(-2.0470) and Personal habits  $t = -2.028$  ( $<0.038$ )  $\beta = -5.232$ , (95% (-10.150-9-0.315)}.

### **Findings on Association between the Mean difference in blood sugar (HBA1C) and selected factors among Type-II Diabetes Mellitus in Fenugreek group**

There was a significant association between the Mean difference of blood sugar HBA1C and selected factors like Marital status  $t = 2.163$  ( $<0.037$ )  $\beta = 1.119$ , (95% CI (-0.248-1.039)} and Duration of exercise  $t = 2.340$  ( $<.025$ )  $\beta = -0.064$ , (95% CI (0.107-1.506)}.

### **Findings on Association between the Mean difference in blood sugar (FBS) and selected factors among Type-II Diabetes Mellitus in Cinnamon group**

There was significant association between the Mean difference of blood sugar FBS and selected factors like Marital status  $t = -0.2531$  ( $<0.016$ ),  $\beta = -7.861$  (95% CI - 14.168- (-1.555)}; Exercise  $t = -2.269$  ( $<0.030$ ),  $\beta = -21.052$  (95% CI(-3.287-8.953)}.

### **Findings on Association between the Mean difference in blood sugar (PPBS) and selected factors among Type-II Diabetes Mellitus in Cinnamon group**

There was significant association between the Mean difference of blood sugar PPBS and selected factor like Anti-diabetic treatment  $t = 1.835$  ( $<0.035$ )  $\beta = -12.721$ , (95% CI (-1.464-28.947)}. Regular Anti-diabetic treatment significantly influenced the reduction in Blood sugar (PPBS) among Type-II Diabetic Patients.

### **Findings on Association between the Mean difference in blood sugar (HBA1C) and selected factors among Type-II Diabetes Mellitus in Cinnamon group.**

There was no association between the Mean difference in blood sugar (HBA1C) and selected factors among Diabetes Mellitus in Cinnamon Group.

## 6. CONCLUSION

Both Fenugreek and Cinnamon were effective in reducing Blood sugar (FBS, PPBS, HBA1C) among Type-II Diabetes Mellitus patients. However, Cinnamon was effective than Fenugreek, because it was less influenced by other factors. Therefore people can use both Fenugreek and Cinnamon to reduce blood sugar. However, Cinnamon carries a better advantage.

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