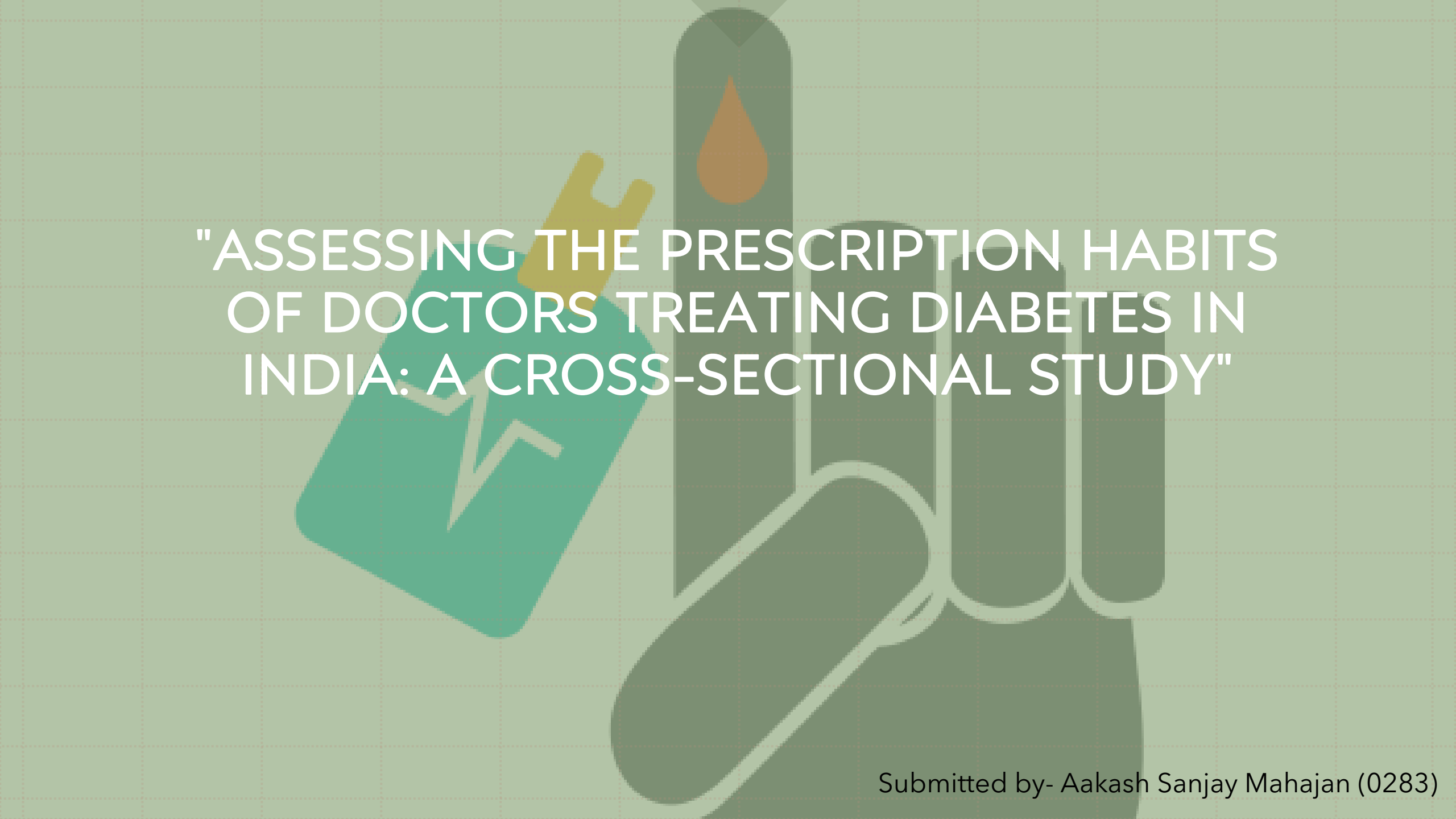




# "ASSESSING THE PRESCRIPTION HABITS OF DOCTORS TREATING DIABETES IN INDIA: A CROSS-SECTIONAL STUDY"

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# INTRODUCTION

- Diabetes, medically referred to as diabetes mellitus, comprises a set of prevalent hormonal disorders marked by persistently elevated blood sugar levels.
- Types of Diabetes.
  - Type 1 Diabetes.
  - Type 2 Diabetes.
  - Gestational Diabetes
- Some other types of diabetes are prediabetics, neonatal diabetes, and maturity-onset of diabetes in the young (MODY).



# EPIDEMIOLOGY

As of 2019, an estimated 463 million people had diabetes worldwide accounting for 8.8% of the adult population.

India has an estimated 77 million people (1 in 11 Indians)

According to the DHS survey, 6.5% of individuals under 50 had diabetes, and 5.7% had prediabetes

Tamil Nadu and Kerala, have reported a high incidence of diabetes

In India, the incidence of diabetes is 8.9% (according to IDF).

# OBJECTIVE

**1. Primary objective:** To investigate the prescription habits of doctors treating diabetes in India.

## 1. Secondary objectives:

- To assess the usefulness of technology and telemedicine in diabetes treatment.
- To investigate the Factors influencing the prescription decisions of doctors in India.



# STUDY DESIGN AND METHODOLOGY

**Research type:**  
Primary and  
Secondary research

**Study design:**  
Descriptive and  
Analytical

**Sampling method:**  
Random Sampling

**Study Area:**  
Bangalore,  
Hyderabad, Mumbai,  
Indore, New Delhi,  
Thane.

**Sample size:** 70

**Sample selection:**  
The Sample is  
Collected from  
different cities in  
India.

**Data Collection:**  
Quantitative data  
collection.

**Study Duration:** 3  
Months

# METHODS AND MATERIALS

A Cross-Sectional study was conducted for a period of three months (March 2023- May 2023) for a study on the prescription habit of doctors treating diabetes in India. Data was collected from a random selection of doctors using a cross-sectional survey methodology. who treat diabetes in India. The sample size of the study is 70. After collecting the data, the data was analyzed using descriptive statistics.



# PARAMETER OF THE STUDY

01

Evaluate the prescribing patterns of diabetes medications in medical specialty

02

Assess the frequency of patient encounters for diabetes management

03

Investigate the most commonly prescribed medications for diabetes

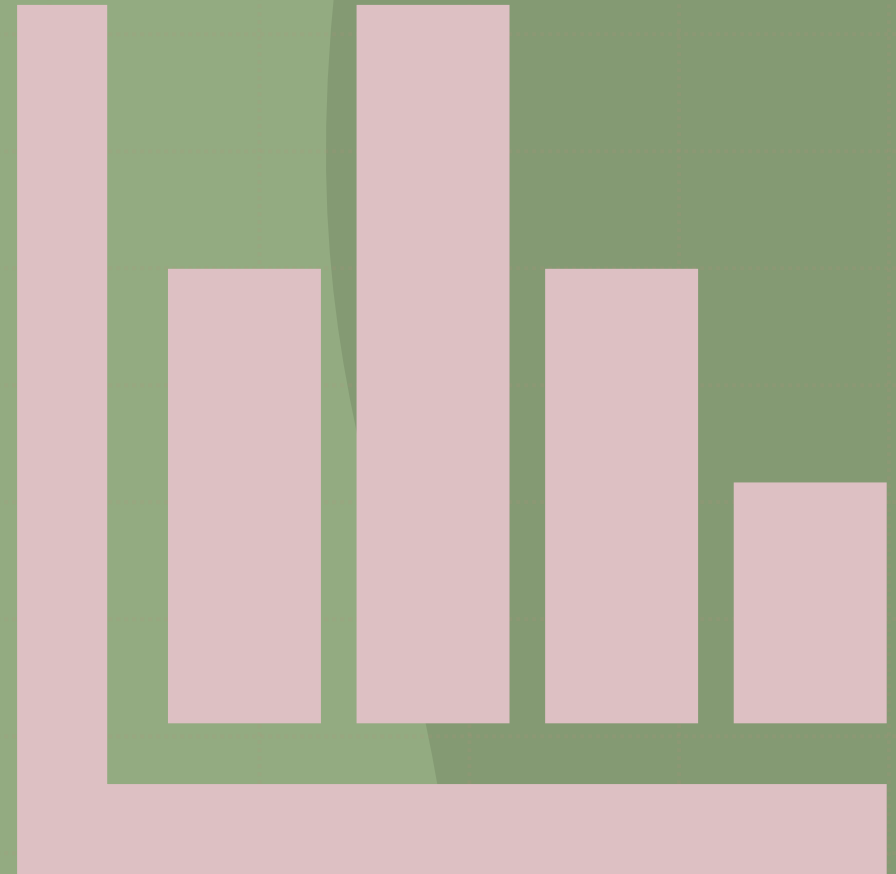
04

Investigate the role of technology in the management of diabetes, including telemedicine and remote monitoring

05

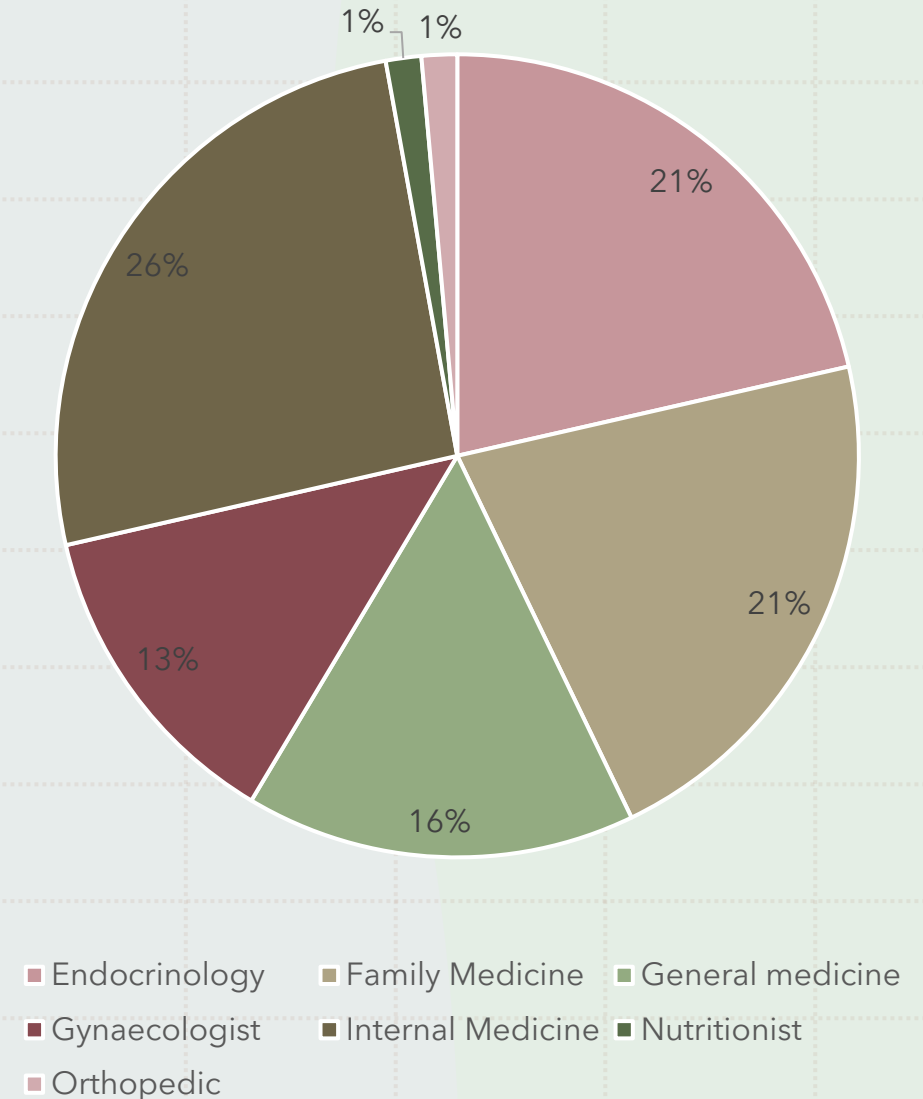
Assess the impact of the COVID-19 pandemic on prescription habits for diabetes treatment.

# RESULT AND DISCUSSION



# Medical specialty

Out of the 70 participating doctors, the majority belonged to the following specialties: Endocrinology (21%), Internal Medicine (26%), and Family Medicine (21%). Additionally, General Medicine accounted for 16% of the participants, while Gynaecologists made up 13%. The remaining 1% each consisted of a Nutritionist and an Orthopedic doctor.



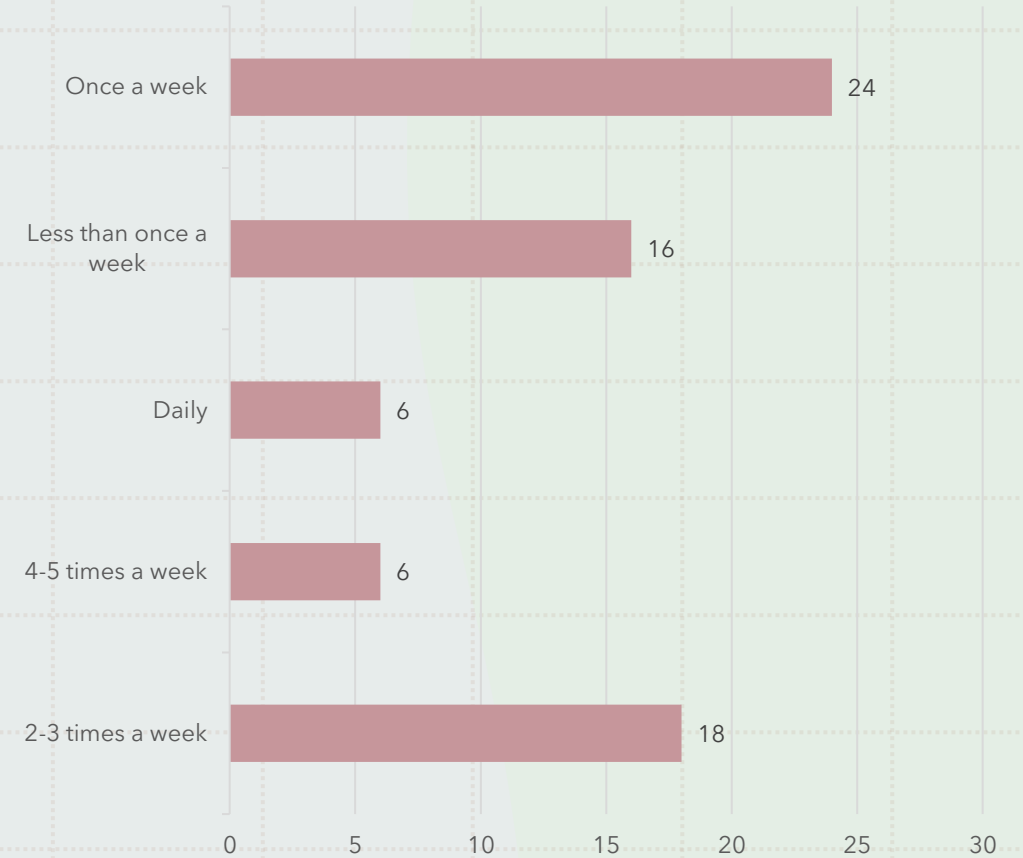
# Prescription pattern

1. Endocrinology had the highest prescription count for Insulin, Gynaecologist had the highest prescription count for Insulin, Family Medicine had the highest prescription count for Metformin, and Internal Medicine had the highest prescription count for Metformin, while General Medicine also had a significant prescription count for Metformin. Nutritionist was the only specialty with a prescription for multivitamins. Additionally, Endocrinology had the highest prescription count for combination medicines, specifically Metformin + pioglitazone, and Metformin + glimepiride + pioglitazone. Orthopedic had the lowest prescription count overall.



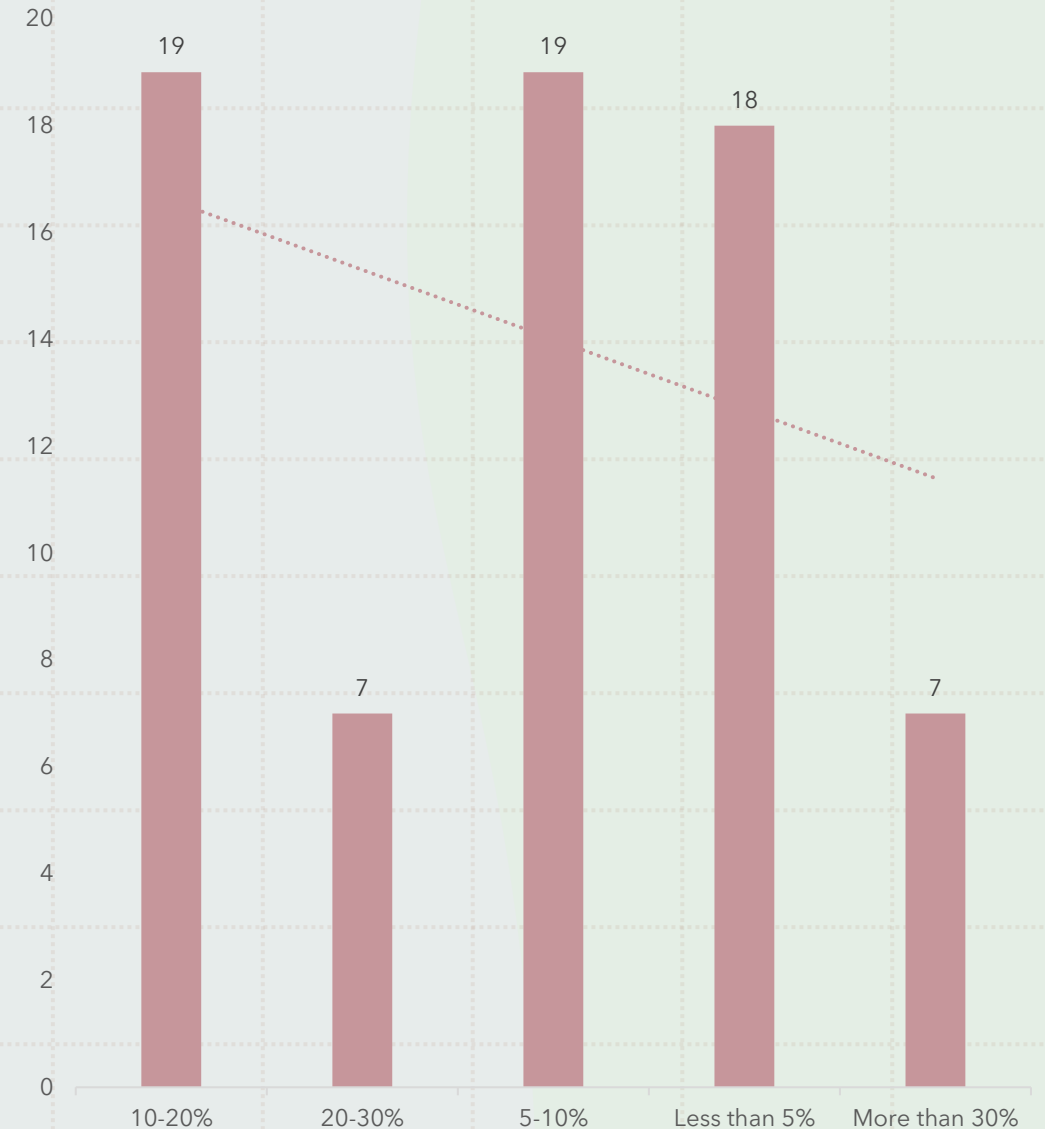
# Patient encounter frequency

34.3% of doctors encounter patients suffering from diabetes once a week, while 25.7% encounter such patients 2-3 times a week. Patients who visit less than once a week account for 22.9%. Doctors encounter patients with a footfall of 4-5 times a week in 8.6% of cases, and the same percentage applies to doctors who see diabetic patients daily.



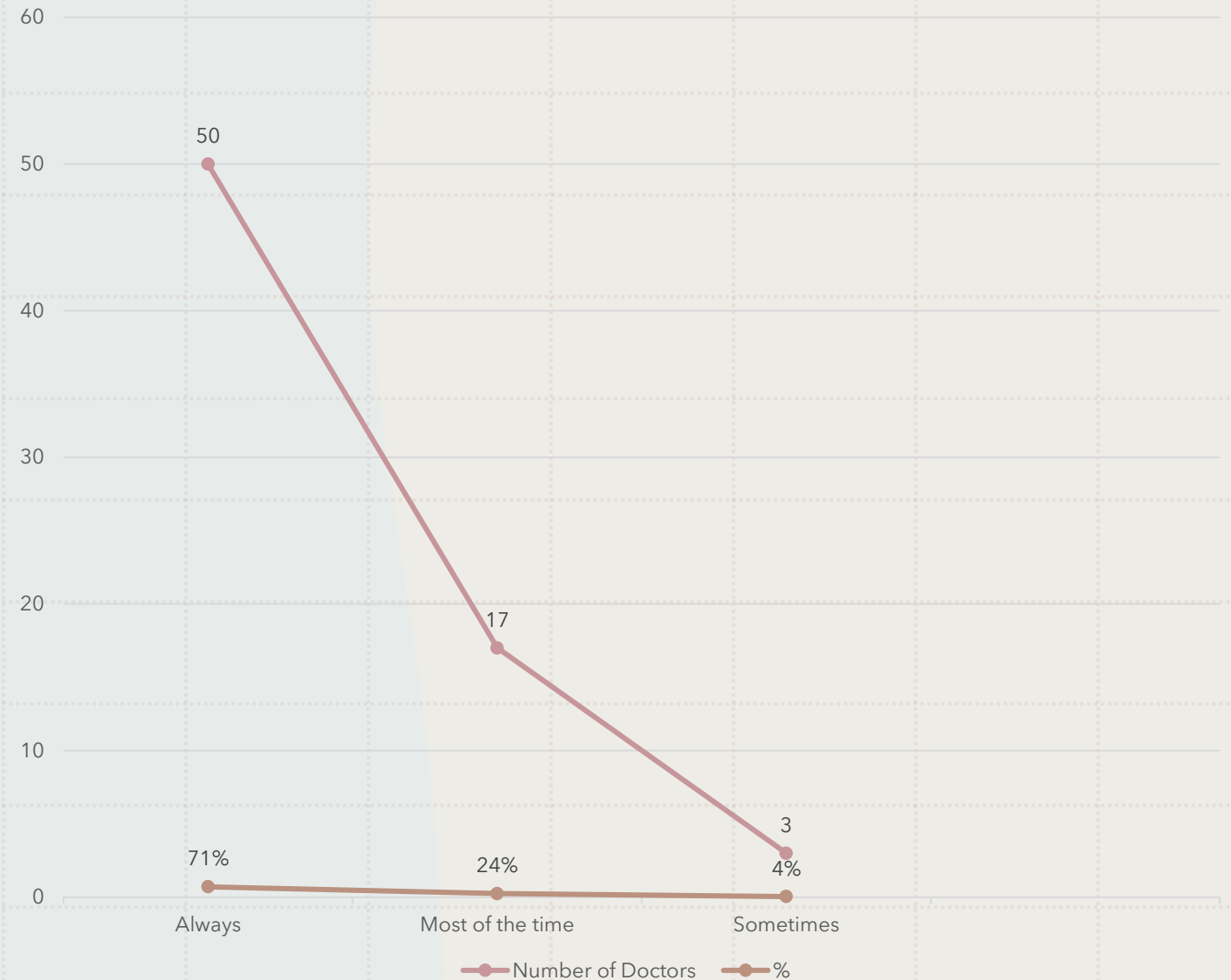
# Diabetes percentage population

Out of the 70 doctors who participated in the survey, an average of 20% of their patient population is diabetic. Among them, 19 doctors (27%) have a patient population with a diabetes rate of 5-10%. Another 19 doctors (27%) have a patient population with a diabetes rate of 10-20%. Additionally, 7 doctors (10%) have a patient population with a diabetes rate of 20-30%, while another 7 doctors (10%) have a patient population with a diabetes rate higher than 30%. Furthermore, 18 doctors (26%) have a patient population with a diabetes rate of less than 5%.



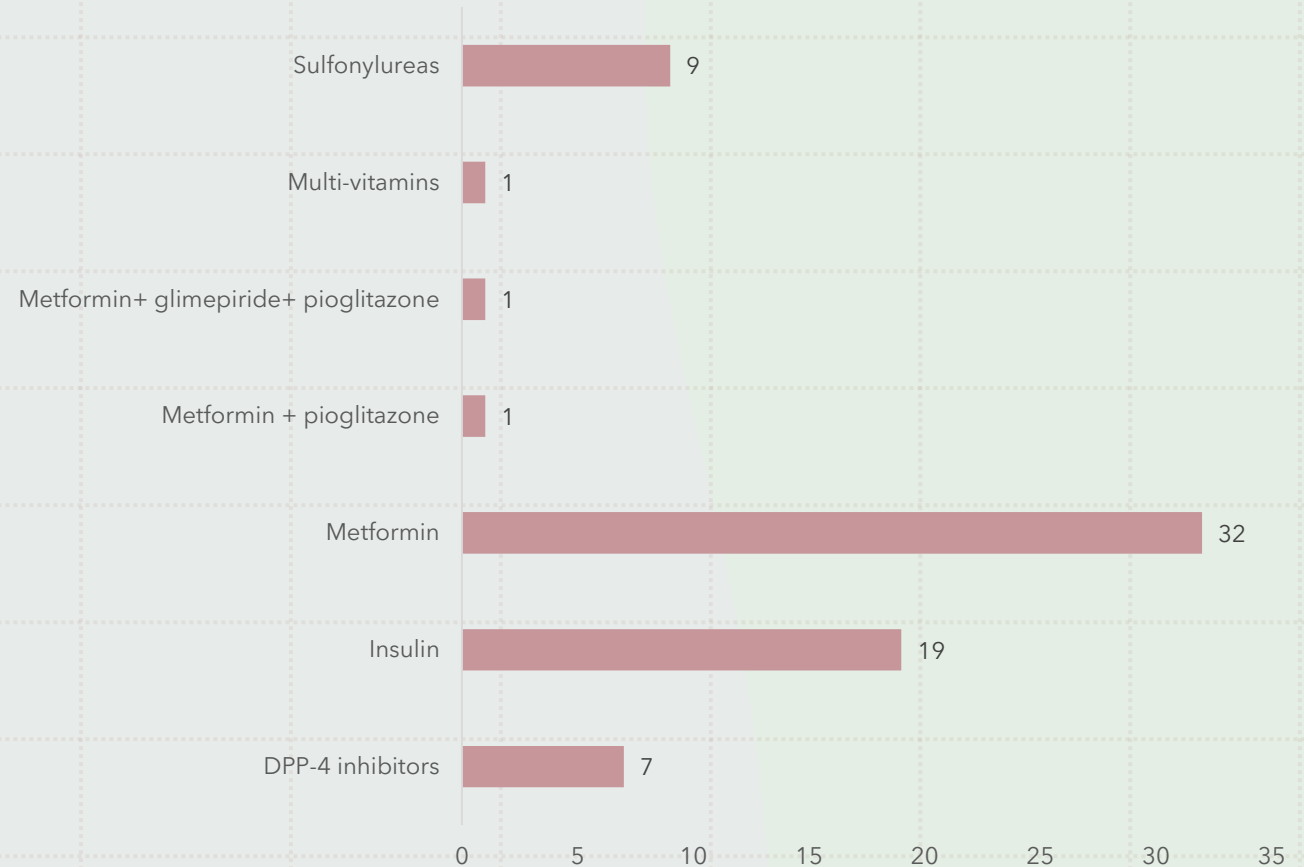
# Frequency of Adherence to Clinical Guidelines

1. Clinical guidelines are always followed by 71.4% of doctors, while 24.3% of doctors adhere to the guidelines most of the time, and 7.3% of doctors follow the guidelines occasionally.



# Most prescribed medicine

Metformin (45.7%), sulfonylureas (12.9%), insulin (27.4%), and dipeptidyl peptidase-4 inhibitors (10%) were the most prescribed medications for diabetes treatment. Moreover, combination medications, including a two-drug combination (metformin + pioglitazone) and a three-drug combination (metformin + pioglitazone + glimepiride), were also prescribed, accounting for 1% of total prescriptions each.



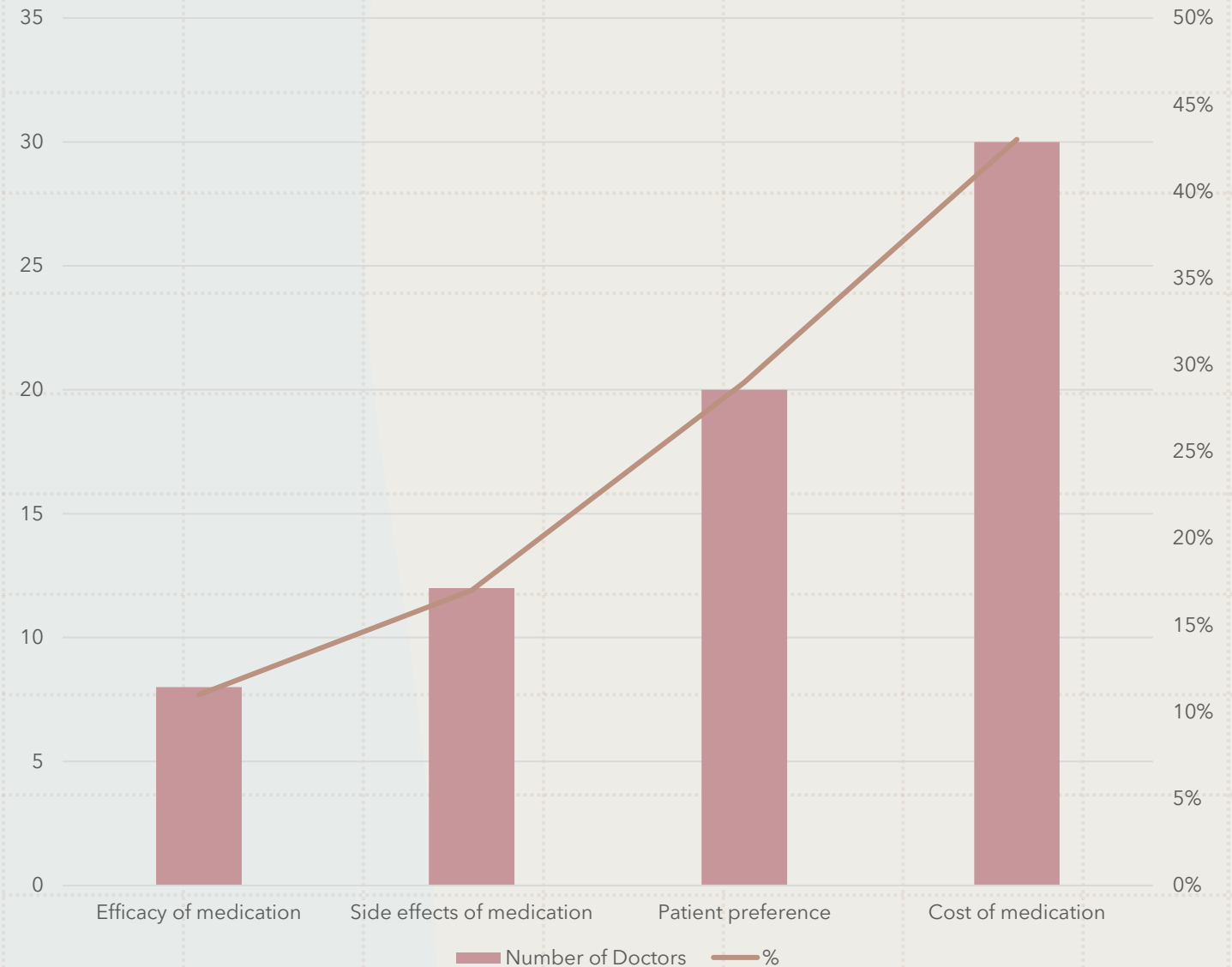
# Factors influencing prescribing decisions

**Patient Preference (28.6%):** Involving patients in decision-making is crucial.

**Cost of Medicine (42.9%):** Affordability impacts treatment accessibility and adherence.

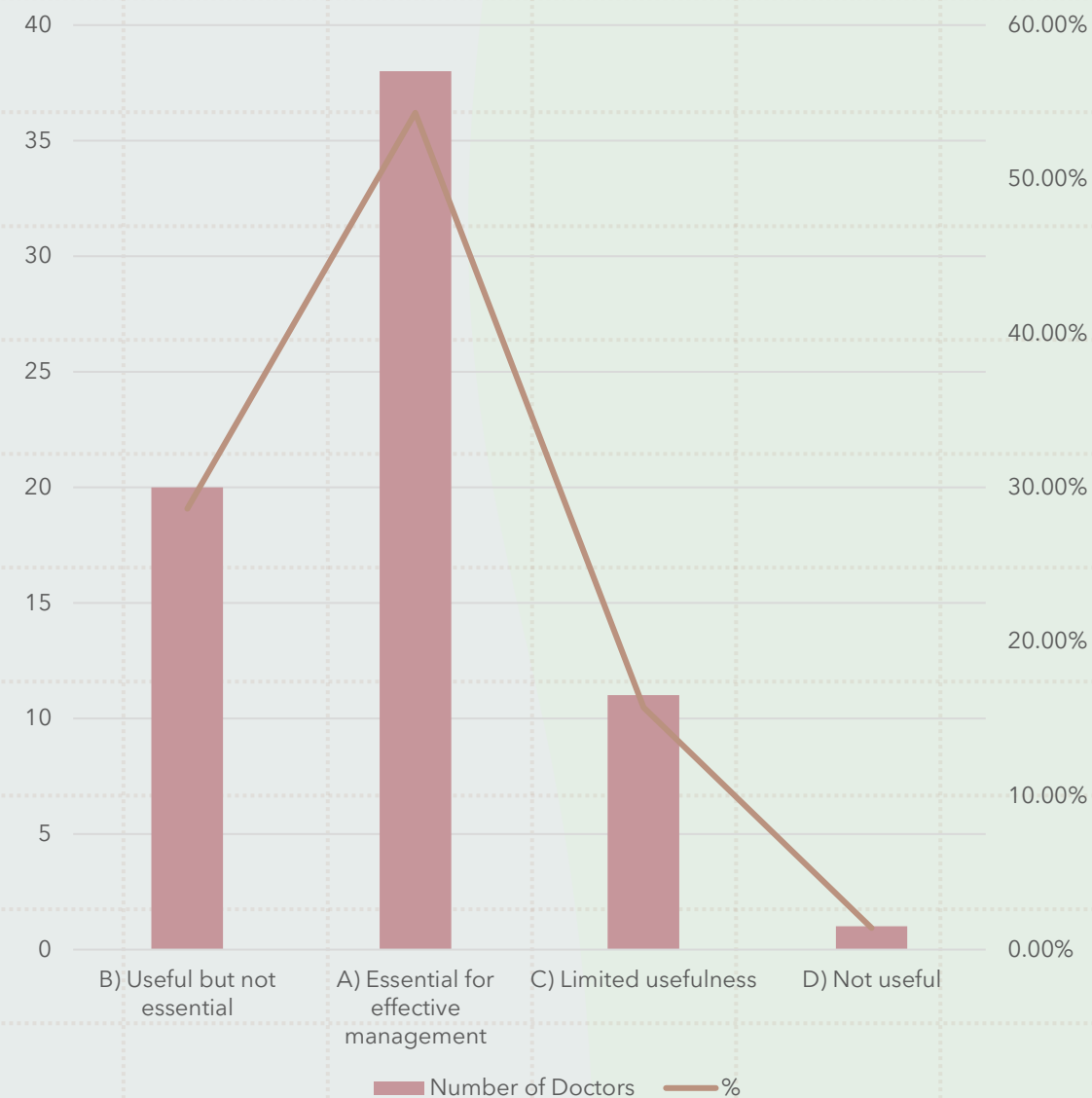
**Potential Side Effects (17.1%):** Healthcare providers prioritize patient safety and well-being.

**Overall Efficacy (11.4%):** The effectiveness of treatment is vital for optimizing diabetes management.



# Usage of Telemedicine and Remote Monitoring Technology

According to a survey, 54.3% of doctors consider the Role of Telemedicine and Remote Monitoring Technology essential for effective management, while 26.8% of doctors find it useful but not essential. Additionally, 15.7% of doctors find it to have limited usefulness, and only one doctor finds it not useful.



# Changes in Diabetes Treatment Prescriptions in India During the COVID-19 Pandemic

Based on the survey, 48.6% of doctors reported no significant change in their prescription habits. On the other hand, 35.7% of doctors have increased the use of telemedicine and remote monitoring. Additionally, 10% of doctors have decreased the use of certain medicines due to supply chain disruptions. The remaining doctors are unsure about their stance on this matter.



# DISCUSSION

Endocrinologists, internal medicine practitioners, and family medicine physicians were the main participants, indicating their role in overseeing diabetes care.

Doctors saw diabetes patients once or twice a week, highlighting the significant patient load and the need for effective management techniques

Diabetes prevalence among the patient group varied, ranging from less than 5% to more than 30%, reflecting differences in patient groups, geographic areas, and healthcare environments.

- Metformin was the most recommended first-line treatment, while combination drugs were prescribed in a small number of cases.

- Adherence to clinical guidelines was generally reported by most doctors, emphasizing the importance of physician education to improve guideline adherence.

- Factors influencing prescription decisions included patient choice, medication cost, potential adverse effects, and overall effectiveness.

- Multidisciplinary teams and diabetes educators could contribute to improved patient care and outcomes.

# CONCLUSION

Doctors saw diabetes patients regularly, emphasizing the significant incidence of diabetes and the need for consistent care strategies

Metformin was the most prescribed medication, followed by insulin and sulfonylureas, demonstrating a range of treatment options

Telemedicine and remote monitoring were recognized as important tools for diabetes management, but infrastructure and training need improvement

Lifestyle modifications, including diet and exercise, were acknowledged as crucial in diabetes management

Evidence-based practice, patient-centered care, and technological integration are essential for improved diabetes treatment outcomes in India

The survey revealed the high burden of diabetes in India, emphasizing the importance of effective management techniques and strategies.

Patient preferences played a significant role in prescription decisions, emphasizing the need for shared decision-making between healthcare practitioners and patients.

The cost of medication was identified as an important factor influencing treatment accessibility and adherence.

The findings can inform healthcare policies, medical education, and clinical practice standards to enhance diabetes treatment in India and improve patient outcomes.

# RECOMMENDATIONS

## **Enhance technological integration:**

Invest in improving infrastructure and providing training for the effective integration of telemedicine and remote monitoring technologies. These advancements can enhance access to diabetes care, enable remote monitoring of patient's health parameters, and facilitate timely interventions.

## **Promote lifestyle modifications:**

Emphasize the importance of lifestyle modifications, including dietary changes and regular exercise, as essential components of diabetes management. Provide resources and support to help patients make sustainable lifestyle changes that complement their medication regimen.

## **Prioritize continuous quality**

**improvement:** Establish mechanisms for continuous quality improvement, such as regular audits, feedback loops, and performance assessments. These processes will ensure ongoing evaluation and enhancement of diabetes care delivery, leading to improved patient outcomes and satisfaction.

## **Strengthen education and training:**

Provide ongoing education and training programs for healthcare practitioners to enhance their knowledge of evidence-based guidelines and keep them updated with the latest advancements in diabetes care. This will ensure that they have the necessary skills and knowledge to provide optimal treatment to patients.

## **Adopt a patient-centered approach:**

Involve patients in the decision-making process by considering their preferences, needs, and values when making prescription decisions. This approach promotes shared decision-making and empowers patients to actively participate in their care.

THANK YOU

