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## **A descriptive study to assess the prevalence and risk factors of diabetes mellitus among adult population in a selected community area in Bangalore.**

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### **ABSTRACT :**

Diabetes mellitus is one of the main threats to human health in the 21st century. In the past two decades, an explosive increase in the number of people diagnosed with diabetes is seen worldwide. According to WHO, the number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. India today heads the world with over 32 million diabetic patients and this number is projected to increase to 79.4 million by the year 2030. The research design adopted for the present study was a non experimental descriptive survey design. The study was conducted among 300 subjects from a selected community area, Bangalore. The main objective of the study was to assess the prevalence and risk factors of diabetes mellitus and identify the association between prevalence and risk factors of diabetes mellitus. The analysis of the present study reveals that 4% of subjects were diabetic and 6% of subjects were pre diabetic with a total of 10% altogether out of 300 subjects studied. And there was an association between diabetes mellitus and risk factors such as age, gender, education, body mass index, waist circumference of female, waist circumference of male, habit of smoking, history of any suffering from illness other than diabetes mellitus, history of diagnosis of high blood sugar in life time, history of given birth to a large baby, systolic blood pressure  $\geq 140$  mm of Hg and diastolic blood pressure  $\geq 90$  mm of Hg.

Keywords: Diabetes mellitus, prevalence, risk factors, adult population

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### **Introduction**

Diabetes mellitus is one of the main threats to human health in the 21<sup>st</sup> century. In the past two decades, an explosive increase in the number of people diagnosed with diabetes is seen worldwide. According to WHO, the number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. India today heads the world with over 32 million diabetic patients and this number is projected to increase to 79.4 million by the year 2030. According to 5<sup>th</sup> atlas published by international diabetic federation (IDF) 8.3% of the adult population, or 71.4 million people, in south-east Asia region had diabetes in 2011. And surprisingly 61.3 million people were from India. Further India accounts for most of the children with type 1 diabetes in the region and India is the largest contributor to regional mortality with 983,000 deaths attributable to diabetes. The number of people with diabetes is increasing due to population growth, aging, urbanization, and an increasing prevalence of obesity and physical inactivity. Diabetes mellitus is the most important cause of lower-extremity amputation, end-stage renal disease, blindness, disability, and premature mortality. Quantifying the prevalence of diabetes is important for rational planning. Studies in different parts of India have demonstrated an escalating prevalence of diabetes not only in urban populations, but also in rural populations as a result of the urbanization of lifestyle parameters. The prevalence of pre diabetes is also high. Recent studies have shown a rapid conversion of impaired glucose tolerance to diabetes in the southern states of India, where the prevalence of diabetes among adults has reached approximately 20% in urban populations and approximately 10% in rural populations. Lower age at onset and a lack of good glycemic control increases the occurrence of vascular complications. The economic burden in treating diabetes and its complications is considerable. The primary prevention of diabetes is urgently needed in India to curb the rising burden of diabetes. A study by International Diabetes Federation (IDF) revealed that a diabetic in India spends rupees 25,931 annually on diagnosis, treatment and its associated complications. The patient also spends nearly rupees 5,000 as indirect cost annually while making rounds to hospitals for treatment. Knowing the prevalence and risk factors of diabetes mellitus will help to quantify the problem and to take appropriate measures such as prevention, early diagnosis and treatment of diabetes mellitus. These measures further reduce the morbidity, mortality and cost burden to patients and society. Hence the present study has been undertaken to assess the prevalence and risk factors of diabetes mellitus among adult population in a selected community area in Bangalore.

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### **2. Methodology**

A Quantitative Research Approach Was Used For The Present Study, A Non Experimental Descriptive Survey Design Was Selected For The Study,- Based on the geographical proximity, feasibility, and availability of the samples, the present study was conducted in Laxmisagara, Anekal Taluk, and

Bangalore. The Population Selected For This Study Comprised Of Adults In The Age Of  $\geq 18$  Years, systemic random sampling was selected for this study, The Present Study Was Conducted Among 300 Adults From Laxmisagara.

### 2.1 Sampling Criteria

#### Inclusion Criteria

- Adults in the age group of  $\geq 18$  years.
- Adults who were willing to participate in the study.

#### Exclusion Criteria

- Individuals who were not available at the time of data collection.
- Individuals who were a known case of hiv infection/hepatitis b infection/pancreaticcancer.

### 2.2 Data collection tools and techniques

#### Preparation Of Tool

A Baseline Characteristics Performa Was Developed To Collect The Baseline Characteristics Of The Subjects. A Structured Questionnaire Was Developed To Collect Data Regarding Risk Factors Of Diabetes Mellitus. The Questionnaire Was Developed After A Thorough Review Of Literature. A Draft Is Prepared And Is Discussed With Experts In The Field Of Nursing, Medicine And Statistics. Glucometer Was Used To Measure Blood Sugar Level And Sphygmomanometer Was Used To Measure Blood Pressure.

### 2.3 Description Of The Tool

In The Present Study A Baseline Characteristics Performa Was Used To Collect The Baseline Data About The Subjects. Glucometer Was Used To Measure Serum Glucose Level. A Structured Questionnaire Was Used To Identify The Risk Factors Of Diabetes Mellitus. The Questionnaire Contained Items Related Age, Gender, Education, Income, Waist Circumference, Height, Weight, Body Mass Index, Genetic Predisposition, Physical Activity, Intake Of Fruits And Vegetables, History Of Any Illness Other Than Diabetes Mellitus, Diagnosis Of High Blood Sugar In Lifetime, Intake Of Any Medicines Other Than Diabetes Mellitus, History Of Given Birth To A Large Baby, Habit Of Smoking, And Blood Pressure.

## 3. OBJECTIVE

- To Assess The Prevalence Of Diabetes Mellitus Among Adult Population.
- To Identify The Risk Factors Of Diabetes Mellitus Among Adult Population
- To identify the association between prevalence of diabetes mellitus and selected risk factor

## 4. RESULTS

The analysis of the present study reveals that 4% of subjects were diabetic and 6% of subjects were pre diabetic with a total of 10% altogether out of 300 subjects studied In the present study there was an association between diabetes mellitus and risk factors such as age (chi square =32.29,  $p < 0.001$ ), gender (chi square =4.98,  $p = 0.026$ ), education (chi square =88.60,  $p < 0.001$ ), waist circumference of men (chi square = 4.410,  $p = 0.036$ ), waist circumference female (chi square = 20.59,  $p < 0.001$ ), body mass index (chi square =15.69,  $p < 0.001$ ), history of suffering from any illness other than diabetes mellitus (chi square =22.2,  $p < 0.001$ ), habit of smoking (chi square =4.22,  $p = 0.040$ ), history of diagnosis of high blood sugar in life time (chi square =102.77,  $p < 0.001$ ), given birth to a large baby (chi square =36.99,  $p < 0.001$ ), systolic blood pressure  $\geq 140$  mm of Hg (chi square =9.92,  $p = 0.002$ ) and diastolic blood pressure  $\geq 90$  mm of Hg (chi square =5.99,  $p = 0.014$ ). There were no association between diabetes mellitus and risk factor such as monthly income (chi square =2.025,  $p = 0.36$ ), daily exercise for 30minutes or any activity equal to that (chi square =3.33,  $p = 0.068$ ), habit of eating fruits and vegetables every day (chi square =0.785,  $p = 0.376$ ), family history of diabetes mellitus (chi square =0.181,  $p = 0.670$ ). The multivariate regression logistic analysis shows that the individuals in the age group of 35-49 years have 9.28 times (odd ratio: 9.28, 95% Confidence interval 1.74-49.63) and individuals in the age group of  $\geq 50$  years have 67.01 times (odd ratio: 67.01, 95% Confidence interval 7.06-635.82) higher risk for diabetes when compared with individuals  $\leq 35$  years age group. In case of gender, men are 5.05 times (odd ratio: 5.05, 95% Confidence interval 1.59-16.03) more likely to have diabetes when compared with females.

**Table 1: The data presented in table 1 shows that 4% of subjects were diabetic and 6% of subjects were pre diabetic with a total of 10% altogether.**

Group	Frequency (F)	Percentage (%)
Pre Diabetes	18	6%

Diabetes	12	4%
Non Diabetes	270	90%

## 5. CONCLUSION

The present study was designed to assess the prevalence and risk factors of diabetes mellitus among adult population in a selected community area in Bangalore. The findings of the study revealed that 4% of subjects were diabetic and 6% of subjects were pre diabetic with a total of 10% all together. There was an association between diabetes mellitus and risk factors such as age, gender, education, waist circumference of men, waist circumference of women, BMI, history of suffering from any illness other than diabetes mellitus, habit of smoking, history of diagnosis of high blood sugar, given birth to a large baby and blood pressure at 0.05 level of significance. Whereas there was no association between diabetes mellitus and risk factors such as monthly income, daily exercise, habit of eating vegetables and fruits every day and family history of diabetes. Multivariate regression logistic analysis reveals that individuals in the age group of 35-49 years are 9.28 times (odd ratio: 9.28, 95% Confidence interval 1.74-49.63) and individuals in the age group of  $\geq 50$  years are 67.01 times (odd ratio: 67.01, 95% Confidence interval 7.06-635.82) higher risk for diabetes when compared with individuals  $\leq 35$  years. In case of gender, men are 5.05 times (odd ratio: 5.05, 95% Confidence interval 1.59-16.03) more likely to have the risk of diabetes when compared with females.

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