A Study on Risk Factors of Type II Diabetes among the Adults Who Attended Medical Exhibition (Vijayawada, Krishna District)

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Abstract: *Globally, the incidence and prevalence are increasing. India is its race to become "Word Diabetes Capital". Diabetes is a lifelong serious disease and should be treated as such. Left unchecked, it shortens life. It is not a condition that goes away by itself. Diabetes is defined as a state in which homeostasis of carbohydrate, lipid and protein metabolism is improperly regulated by insulin. This results primarily in elevated fasting and in postprandial blood glucose levels .If this imbalanced homeostasis does not returns to normal and continues for a protracted period of time, it leads to hyperglycemia that in due course turns into a syndrome called Diabetes mellitus. Out of the total 1161 adults tested, 2/3 (64%) were males and rest of them were females. Out of the total sample tested, 2/3 (64%) were males and rest of them were females. 128 (12%) people know that they were diabetic and astonishingly, 38 (2.3%) persons were newly diagnosed to be suffering with Diabetes, raising the prevalence level to 14.3% (166). All of them were given advice regarding diabetic care. The remaining 85.7% [995] were non diabetics.*
Key Words: *Diabetic foot care, Diabetes Mellitus, Hyper Glycaemia, Hypo Glycaemia, prediabetic,*

I. Introduction

Diabetes mellitus is a metabolic disease. It is mainly characterized by hyperglycemia that leads to several long term complications. Diabetes is an "Iceberg" disease [1]. Globally, there is increase in both incidence and prevalence of Diabetes type 2. Every time we eat sugary or starchy food, the amount of glucose available to the body rockets. Yet the levels of glucose in the blood stream are maintained within narrow limits by two key hormones –insulin and glucagon-working to prevent hyperglycemia (abnormally high glucose levels) or hypoglycemia (low glucose). [2] Insulin helps the sugar to leave the blood and go into our body cells, where it is used as a kind of fuel. When this happens the way it should be, the level of the sugar in the blood goes down and our bodies have the energy for a full and active life. In people with Diabetes, this system does not work. In diabetes, the body cannot make the energy from the food the person eats .Sugar stays in the blood instead of going into the cells of the body. Diabetes is a lifelong serious disease and should be treated as such .Left unchecked, it shortens life. It is not a condition that goes away. [3] Diabetes is defined as a state in which homeostasis of carbohydrate, lipid and protein metabolism is improperly regulated by insulin. This results primarily in elevated fasting and in postprandial blood glucose levels .If this imbalanced homeostasis does not returns to normal and continues for a protracted period of time, it leads to hyperglycemia that in due course turns into a syndrome called Diabetes mellitus. [4] Type II Diabetes accounts for at least 90% of all cases of diabetes mellitus. It is caused by Insulin resistance and/or Relative Insulin Deficiency. It remains undetected for many years .It is usually diagnosed after the age of 40. It is often diagnosed from the associated complications or incidentally by an abnormal blood or urine glucose test.

1.1 Background:

Non-communicable diseases are fast becoming the major cause of morbidity and mortality in developing countries .India is now named as Diabetic Capital of the world. Most of the Diabetes is detected only after the complications set in and the goal of secondary prevention is not fulfilled .Hence this is the study for early detection of diabetes and the relation of various risk factors to diabetes.

1.2 Criteria used:

Known Diabetics were defined by, history of Diabetes and/or ongoing hypoglycemic therapy.
Unknown Diabetics were defined basing on Random Blood glucose level >=200 mg/dl

II. Objectives

1. 1 .To measure the prevalence of Known and unknown Diabetics among the adults (>30 years) who attended the Medical Exhibition organized at Siddhartha Medical College, Vijayawada as a part of Silver Jubilee Celebrations of Dr.NTR University of Health Sciences, the first Health University in India.
2. To find the relation between Diabetes and various risk factors like age, sex, family history, smoking, alcoholism and obesity.

III. Methodology

3.**1Study design:** Cross-sectional study
3.2Study area: Medical Exhibition in Siddhartha Medical College, Vijayawada on the occasion of Silver jubilee celebrations of Dr. NTR University of Health Sciences, Vijayawada.

3.3 Study participants: Adult population aged >=30years who attended the medical exhibition.
3.4 Sample size: 1161.

IV. Material And Methods

Age	Non diabetic	Diabetic	Total
30-40Yrs	510 (94.8%)	28(5.2%)	538 100.0%
41-50Yrs	271 (84.4%)	50 (15.6%)	321 (100.0%)
51-60Yrs	113 (73.9%)	40 (26.1%)	153 (100.0%)
>60Yrs	101 (67.8%)	48 (**32.2%**)	149 (100.0%)

4.1. Study Tools:
1. Pretested semi structured questionnaire
2. Glucometer
3. Measuring tape
4. Weighing machine

Data collection was by using pretested semi structured questionnaire by interview technique. All the adult people aged more than 30 years who attended the exhibition were included in the study. Very few people were not willing to participate due to time constrain in the exhibition. Height and Weight were measured for calculating Body Mass Index [BMI]. Random Blood Sugar [RBS] levels were measured using Gluco meter.

4.2 Study period: October-November 2011
4.3 Statistical test applied was the chi square test.

V. Results

Out of the total 1161 adults tested, 2/3 (64%) were males and rest of them were females.
Among the 1161, 128 (12%) people know that they were diabetic and astonishingly, 38 (2.3%) persons were newly diagnosed to be suffering with Diabetes, raising the prevalence level to 14.3% (166). All of them were given advice regarding diabetic care. The remaining 85.7% [995] were non diabetics.

Tab-1: Relation of age with diabetes:

X^2 value=93.289, df=3, p <0.01

In our study, we found that 32.2% were diabetics in the sixth decade of life and it is significantly shown that the percentage of diabetics increased with increase in age.

Table-2: Gender wise distribution:

STATUS	MALE	FEMALE
DIABETIC	6%	19%
NON DIABETIC	94%	81%

Among the diabetic population, 19% of them were females and 6% of them were males
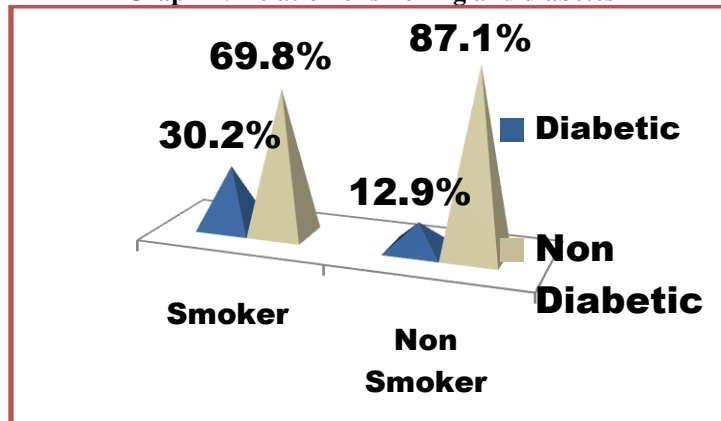

Graph-1: Relation of Family history with diabetes
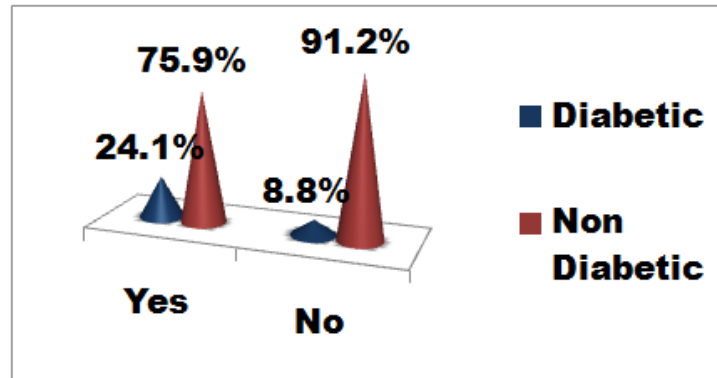
X^2 value=51.457, DF=1, p <0.01

In the total sample, we found that 24.1% of the people with family history of diabetes were diabetic. We found that diabetes significantly associated with the risk factor of family history.
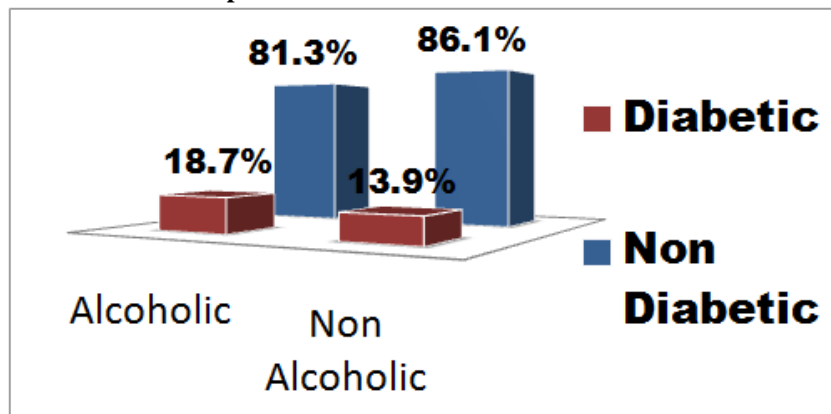
Graph-2: Relation of smoking and diabetes

X^2 value=21.619, df=1, p <0.01

Among the smokers, 30.2% were diabetic and among the non smokers 12.9%. Thus it is shown that smoking is significantly shown to be the risk factor for diabetes.

Graph-3: Relation of alcohol with diabetes

X^2 value=1.857 df=1, p = 0.173

Among the alcoholics, 18.7% were diabetic and among the non alcoholics only 13.7% were non diabetic. But it was not statistically significant (p = 0.173). However the number of diabetics is relatively more among the alcoholics. The study group might not have opened up in the public exhibition.

Graph-4: Relation of BMI with diabetes
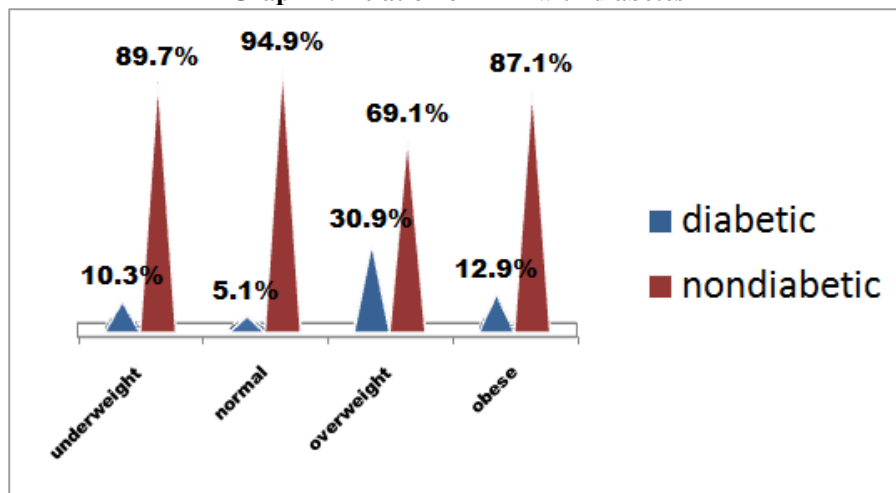
X^2 value=93.723, df=3, p <0.01

We found that 30.9% of the overweight people are diabetic and 21.9% of the obese people are diabetic .Thus a strong significant relation is established between increased BMI and diabetes. (P < 0.01)

VI. Discussion

The prevalence of diabetes in this study was 14.3%, which was nearer to the prevalence obtained by Chow et al. [5] Some of the population based studies had reported that the prevalence was higher in females which were similar to our study. [6] Unknown diabetes was 2.3% in our study, which was nearer to the study by Javed (2.03%) [7] The present study revealed that the prevalence of DM increases with age which was similar to study done by Javed**.**

VII. Conclusions And Recommendations

The present study revealed the significant relation of risk factors like age, sex, family history, smoking, and obesity with Diabetes. However there was no significant relation between alcohol intake and Diabetes. May not be true due to constrain in the study as it was conducted in the public place.

The non diabetic people who were having the above risk factors are to be screened at least once a year to detect the occurrence of the disease at the earliest. The unknown diabetics or newly detected Diabetics are to be tested for Fasting plasma glucose level for confirmation and appropriate steps to be taken up.

Acknowledgements

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