

## A Study to Determine the Frequency of Risk Factors in diabetic patients attending Diabetes Clinic at Ibn-e-Siena Hospital Multan

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### ABSTRACT

**Aim:** The aim of study was to know the frequency of risk factors such as obesity, smoking & hypertension in diabetic patients among general population attending diabetes clinic at outpatient department of Ibn-e-Siena Hospital & Research Institute Northern Bypass Multan.

**Study Design:** Descriptive

**Place & duration:** Study was carried out at diabetes research center Ibn-e-Siena Hospital & Research Institute Multan from 15 August to 15 September 2017.

**Methods:** 128 diabetic patients (70 male and 58 female) above 25 years of age coming from Multan town and surrounding areas of Ibn-e-Siena hospital were taken in the study. They were clinically examined and questioned in accordance with pre designed schedule of investigation to get required information.

**Results:** Out of these 128 diabetic patients included in this study, 52 patients were obese (40.6%) and 76 patients were non obese (59.4%). When their blood pressure was checked 49 of these respondents were found hypertensive (38.3%) and 79 have normal blood pressure (61.7%). On enquiring about smoking 38 persons were smokers (29.7%) while 90 of these were nonsmokers (70.3%).

**Conclusions:** This descriptive study on adult diabetic patients showed that all the three risk factors were found in different individuals. Out of these risk factors obesity was the most common followed by hypertension and less frequent was smoking.

**Keywords:** frequency, diabetes, hypertension, smoking, obesity, risk factors.

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### INTRODUCTION

Diabetes is a general term referring to disorders characterized by excessive urine excretion (polyuria) as diabetes mellitus and diabetes insipidus. When used alone it refers to diabetes mellitus. Both DM & DI are metabolic disorders. In DM the glucose level is high and in DI the hormone ADH is low in blood. DM is said to be iceberg disease. DM is of two Types i.e. Type 1 or primary or juvenile or insulin dependent and Type II or secondary or maturity onset or noninsulin dependent. The underlying cause of diabetes is insulin deficiency which is absolute in IDDM and partial in NIDDM. This may be due to wide variety of mechanisms such as pancreatic disorders, defects in the formation of Insulin, Destruction of beta cells, decreased insulin sensitivity, genetic defects and auto-immunity. Diabetic patients present with sign and symptoms of polyphagia, polyuria, polydipsia and weight loss. DM if undiagnosed or inadequately treated, develop multiple complications such as coronary heart disease, stroke, renal disease, retinopathy, neuropathy and gangrene of lower limbs. In order to control the disease, a detailed knowledge of associated risk factors is mandatory. Obesity is directly linked with Type II DM when BMI is more

than 40. It is said that 25-47% of hypertensive patient have insulin resistance. As regards smoking 44% have high risk of developing Type II DM than nonsmokers & risk increases as the number of Cigarettes smoked per day increases. There were 150 million diabetics worldwide in 2000 and the figure will be double in 2025 (a prevalence rate of about 5.4%). South East Asian countries will become the most challenged region in the world and will bear maximum global burden of the disease. At present 20% of current global diabetic population resides in south East Asia.

### MATERIAL & METHODS

The study was carried out in diabetes research center at outpatient department of Ibn-e-Siena Hospital over a period of two months. 128 diabetic patients above the age of 25 years were taken in the study and they were all from Multan and surrounding areas of the hospital alongside of southern bypass. Already diagnosed DM patients were examined clinically to note the sign & symptoms and any other complication of the disease. Personal information was taken according to the questionnaire and data was recorded particularly about smoking, exercise and blood pressure.

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## RESULTS

Fifty two patients out of these 128 diabetics included in this study were obese having BMI > 25 (40.6%) and other 76 patients were not obese and have BMI < 25 (59.4%) as shown in Table 1. On recording the blood pressure and taking history of sample population, 49 patients were found hypertensive (38.3%) and 79 were normotensive (61.7%) as shown in Table 2. According to data collected about smoking habits 38 persons were smokers (29.7%) and remaining 90 were found to be nonsmokers (70.3%) as shown in Table 3.

Table 1: Frequency of obesity as a risk factor in diabetic patients

	<b>Obese (BMI&gt;25)</b>	<b>Non Obese (BMI&lt;25)</b>
Diabetics	52(40.6%)	76(59.4%)

Table 2: Frequency of Hypertension as a risk factor in diabetic patients.

	<b>Hypertension B.P&gt;149/90</b>	<b>Non Hypertension B.P&lt;140/90</b>
Diabetics	49(38.3%)	79(61.7%)

Table 3: Frequency of smoking as a risk factor in diabetic patients

	<b>Smokers</b>	<b>Non Smokers</b>
Diabetics	38(29.7%)	90(70.3%)

## DISCUSSION

In this study we concentrated on three risk factors namely obesity, hypertension and smoking in diabetic patients. This study shows that the people who are obese, smokers or have high blood pressure are more prone to develop Type II DM. During this survey it was found that obesity was more prevalent among diabetics showing obesity as important risk factors for diabetes mellitus. While correlating obesity as a risk factor with DM, our observation was that obesity is moderately frequent risk factor in DM and this hypothesis is supported by researches conducted in USA. Data collected from national health and nutrition examination survey (NHNES) 2001-2004, states that about 2/3<sup>rd</sup> of the adults in USA are overweight and about 1/3<sup>rd</sup> are obese who are suffering from Type II DM. So obesity is one of the leading causes of DM. Our study showed that smoking is less frequent risk factor for DM which is supported by the study conducted at Harvard school of public health Boston by Eric. B. Ronn and Meir.J. Stampfer which says that a person who smokes 25 cigarettes or more daily had relative risk of DM of 1.94%. So cigarette smoking is an independent modifiable risk factor in Type II DM. Our study also showed that hypertension has association with DM and this is supported by the study conducted at John

Hunter Hospital New Castle, New South Wales, by Julia Lovi (Director of general medicine dept. of Endocrinology). The study conducted in Japan by Islam MM and Horive. H regarding current trend in DM prevalence in Japan says that women who are thin with normal B.P & are nonsmoker have less incidence of Type II DM. lastly according to the survey done in 2001 among USA population has shown obesity as a leading risk factor for diabetes mellitus.

## RECOMMENDATIONS

Unfortunately there is inadequate awareness about the dimension of this problem among the general public. There is also a lack of awareness about the existing interventions for preventing diabetes and the management of complications. From this study it is concluded that there is need for more public awareness and understanding of the disease. Prevention and control of risk factors can be achieved by involving private sector as well. It is recommended that

1. Normal body weight must be maintained through healthy nutritional habits and physical exercise on regular basis. Nutritional habits include an adequate protein intake, high intake of dietary fiber and avoidance of sweet foods.
2. Subjects at risk should avoid diabetogenic drugs such as oral contraceptives.
3. It is wise to reduce factors that promote atherosclerosis such as smoking, high blood pressure and elevated cholesterol.
4. Self Care: such as adherence to well Balanced healthy diet, maintenance of optimum weight & blood glucose monitoring.
5. Reduce stress level.
6. Media such as Radio & TV via announcements and by delivering programs regarding food control, exercise and dietary habits.
7. Advertisements about tobacco should be prohibited.
8. "Dum Darood" by traditional healers should be discouraged.
9. Hakeem prescription or medication should be avoided as it may contain heavy metals which can damage kidney and pancreas.
10. Life style consisting of drinking alcohol, smoking, lack of exercise and excessive food intake should be avoided and healthy life style according to Islamic teachings should be adopted and one should remain active.
11. For success we must enhance public awareness, mobilize resources and demonstrate public commitment for prevention and control of these risk factors for DM to make our nation healthy.

## CONCLUSIONS

As the number of diabetic patients is increasing day by day and it is expected that the number will be doubled in 2025 and the deaths due to this disease will increase by 50% in next ten years as estimated by WHO. Our study highlights the need for more understanding of disease particularly its risk factors. It is noted that insufficient and poor information was found among the sample population. However if the public has adequate knowledge and awareness of DM & its risk factors prevention and control, it is sufficient. The study concluded that out of the three risk factors for DM, Obesity was significant, hypertension was moderately noted and smoking was less frequent risk factor.

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