Research Article

# Study of Background of Patients Suffering From Diabetes Mellitus with Special Reference to Muzaffarpur Town

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## ABSTRACT

Diabetes is a challenging health problem. It has become the third leading cause of death after heart disease and cancer in many developed and developing countries of the world, The world wide data show that 5.35 million people live with Type-I diabetes and 0.395 million (7.4%) are children. The annual incidence turns out to be the highest in India throughout the world. According to WHO estimation; India will have over 57 million diabetic patients by 2025. Viewing this alarming rate of diabetes all over India, Muzaffarpur has been selected as the locale of study. The present study focused on the background profile & prevalence rate of Diabetes in selected area of Muzaffaprur town. Random sampling method was used to select the Diabetic patients. This is an evident proof to show that obesity is directly linked with diabetes and such people are at greater risk of having CHD. Genetic factors have been found responsible for causing diabetes among 63% of the respondents.

**Keywords:** Diabetes, CHD, Genetic factors.

## INTRODUCTION

Diabetes is a growing health problem that has apparently plagued for ages. It may be defined as a chronic metabolic disorder which the presents to illage glucose completely or partially. It is characterized by partial or total lack of functioning of carbohydrates, protein and fat. According to WHO; in 2000 the world-wide prevalence of Diabetes Mellitus is 171,000,000. About 5 lakh cases are listed annually in India only. [1]

Diabetes is due to failure in the formation of Insulin or liberation or action. Since insulin is produced by the β-cells of the islets of Langerhans, any receding in the number of functioning cell will decrease the amount of insulin that can be synthesized.

There are two major farms of diabetes –IDDM (Type I) and NIDDM (Type III). The major causes of Diabetes include genetic factors, life style and genetic susceptibility. The number of people with diabetes is increasing due to population growth, aging, urbanization and increasing due to population growth, aging, urbanization and increasing prevalence of obesity and physical inactivity. The classic triad of signs and symptoms include polyurea, polydipsia and polyphagia. Other symptoms include weight loss blurred vision delayed wound healing capacity and ketoacidasis. Neuropathy and sexual dysfunctioning is the major

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complications associated with Diabetes. [2-3]

The three cornerstone of the management of diabetes include physical activity, medication and nutritional management. This corner stone along with OHD and insulin have found to be the most offensive way of lowering blood glucose level. It also improves the lipid level and reduces the complications to a great extent. But it has been found that most of the diabetic patients are not aware of its complication and no idea regarding nutritional management. It has proved to be entirely a new concept for them. [4-5]

Since, Medical Nutritional Therapy (MNT) is an integral component of diabetes self-management education or training, therefore, to knowledge the present condition and prevalence of diabetes, Muzaffarpur town of Bihar chosen as the locale of study. They study was done keeping the following objectives in mind:

1. To study the background profile or Diabetes patients
2. To know the rate of prevalence of persons suffering from Diabetes Mellitus.

## METHOD

Muzaffarpur, a well known educational, social and cultural center next to Patna in Bihar is chosen purposively for the study as people of different sections and societies live here. Random sampling technique was used to select 200 diabetic patients as respondents. Appointment of time was taken and willing respondents were sought for information on the subject concerned. The interview schedule was framed and

all sorls of information were collected. The data tabulated, classified & analyzed giving statistical treatment.

## RESULTS & DISCUSSION

The data in the age of diabetic patients are shown in the Table below:

**Table 1: Distribution according to age**

| S. No. | Age Group | Frequency | Percentage |
|--------|-----------|-----------|------------|
| 1. | 25-35 | 28 | 14.00 |
| 2. | 36-45 | 27 | 13.50 |
| 3. | 46-55 | 65 | 32.50 |
| 4. | 56-55 | 39 | 19.50 |
| 5. | 65 & above | 41 | 20.50 |
| | **Total** | **200** | **100.00** |

It is evident from the above table that 32.5% of the diabetic patients are under the age- group of 46-55 years whereas 13.5 of the diabetic patients are between the age group of 36-45 years. Thus the table shows that the middle age group is much susceptible and prone to diabetes. Through the disease occurs at all ages yet a greater percentage of the cases occurs in person over 45 years of age.

Among the 200 respondent, the ratio of male and female diabetics is presented in Table 2.

**Table 2: Distribution according to sex**

| S. No. | Sex | Frequency | Percentage |
|--------|-----|-----------|------------|
| 1. | Male | 112 | 56.00 |
| 2. | Female | 88 | 44.00 |
| | **Total** | **200** | **100.00** |

The above table shows that 56% of diabetic patients are males whereas 44% are females. It shows that males are much susceptible to diabetes in comparison with females.

The persons who are suffering from diabetes are checked according to their activity level. As activity level is considered as an important factor which is directly responsible for causing diabetes. So, the activity level of the respondents is shown in the table below:

**Table 3: Distribution According to activity level**

| S. No. | Activity level | Frequency | Percentage |
|--------|----------------|-----------|------------|
| 1. | Sedentary | 119 | 59.50 |
| 2. | Moderate | 63 | 31.50 |
| 3. | Heavy | 48 | 9.00 |
| | **Total** | **200** | **100.0** |

This table shows that 59% of the respondents are leading sedentary life style and they frequently become diabetic. In comparison to sedentary life style, 31.5% of the respondents are moderate workers only 9% of the respondents are doing heavy work.

It is a clear proof that those who are not habituated to do regular physical work and spend most of their time in doing no work, easily come in the clutch of diabetes whereas those who are physically active are less prone to this sort of trouble. Moderate workers also may become prey to diabetes but the people doing heavy work are less sensitive to become the victim of diabetes.

People irrespective of different socio-economic background fall prey to this disease no matter at all whether they belong to any sort of association or income level or diabetes. The income level of the respondents was sought. It is important to mention that not a single respondent told about his/her income level of the respondents. It is presented below in Table 4.

**Table 4: Distribution According to Income**

| S. No. | Income (In Rs.) | Frequency | Percentage |
|--------|-----------------|-----------|------------|
| 1. | > 5000 | 38 | 19.00 |
| 2. | 5000-10000 | 3 | 1.50 |
| 3. | 10000-15000 | 48 | 24.00 |
| 4. | 15000-20000 | 52 | 26.00 |
| 5. | 20000 & above | 59 | 29.50 |
| | **Total** | **200** | **100.00** |

It is evident from this table that 29.5% people are having income between above 20,000, 26% people have income between Rs. 15000 and Rs.20000 24% respondents have income between Rs. 15000 and Rs. 20000 24% respondents have income between Rs. 10000 and Rs. 15000 19% of the respondents have income below Rs. 5000. Most of them are housewives. Only 1.5% of the respondents have income between Rs. 5000 & Rs. 10000.

It has been found that people having income above Rs. 20,000 lead a luxurious life and have high standard of living. They include more fatty foods in their diets and are thus more subject to the ill-effect of diabetes. On the contrary people of less income cannot afford to include high calorie and protein diet in their meal, even though they become diabetic due to some genetic factors.

BMI (Body Mass Index) is an index for detecting obesity. Since obesity is linked with diabetes so the BMI of diabetic patient is calculated with the standard formulae, i.e.

$$BMI = Weight\ (kg)/\ Height\ (m)$$

BMI of the respondents is shown in the table given below:

**Table 5: Distribution according to BMI (Body Mass Index)**

| S. No. | Activity Level | Frequency | Percentage |
|--------|----------------|-----------|------------|
| 1. | < 25 | 36 | 18.00 |
| 2. | 25-29.9 | 67 | 33.50 |
| 3. | 30-39.9 | 94 | 47.00 |
| 4. | >40 | 3 | 1.50 |
| | **Total** | **200** | **100.00** |

The above table shows the distribution according to their BMI. About 47% of the respondents have BMI between 30 and 39.9. People having this BMI range are considered obese of 2nd grade. For mechanical and metabolic reasons these persons are supposed to be at greater risk of having arteriosclerosis & hypertension which lead to other complications.

33.5% of the respondents have BMI between 25 and 29.9 which indicate obesity of grade I. People having BMI between this ranges is overweight but can lead a normal life. 18% of the respondents have BMI less than 25 and are not considered obese. Only 1.5% of the respondents have BMI more than 40 which denotes obesity of grade III. The persons having BMI more than 40 are in pathetic condition and are likely to have complications.

It is evident that obesity located in the central abdominal part of the body is statistically associated with a number of metabolic derangements. Obesity probably acts as a diabetogenic factor through increasing resistance to the action of insulin in those genetically predisposed persons to develop NIDDM. Only lifestyle, obesity and age cannot be considered as the sufficient evidences of causing diabetes. Genetic factor is considered as the most important factor for causing diabetes. It has been shown in various studies that positive family history of diabetes in the family continues genetically. The distribution according to positive family history of Diabetes is shown below:

**Table 6: History of Diabetes**

| S. No. | Family/History | Frequency | Percentage |
|--------|----------------|-----------|------------|
| 1. | Positive | 126 | 63.00 |
| 2. | Negative | 74 | 37.00 |
| | **Total** | **200** | **100.00** |

It is clear from the above table that 63% of the respondents have positive family history of diabetes. Either their parents or grandparents are having diabetes or due to genetic factors, it is in them also. 37% respondents do not have family history of diabetes but it was observed that due to faulty food habit and life style they have become diabetic.

**CONCLUSION**

The study revealed that:

1. 32.5% of the diabetic patients are under the age group of 45-66 years and a greater percentage of cases occur in persons over 45 years of age.
2. Male (56%) are more susceptible to diabetes than female (44%).
3. People who lead sedentary life style are more prone to diabetes than moderate and heavy workers. Their percentage is about 59.5% against 31.5% and 9% respectively.
4. 29.5% people who are having income above Rs. 20,000 lead a luxurious life and have faulty food patterns which lead to diabetes.
5. 47% of respondents are suffering from obesity of 2nd grade as they have BMI range between 30-39.9. They are at greater risk of having cardiovascular disorder and other complications.
6. 63% of the respondents are found to be diabetic due to genetic factors whereas the rest 37% of the respondents are having this metabolic defect due to other reasons such as faulty life style, obesity and physical inactivity.

**SUGGESTIONS**

Changes in life style, personnel habits and dietary pattern are important to control diabetes especially type-2 which is subject not to be cured, it can only be controlled. So small but frequent diet regime should be followed to control the condition. Physical exercise should be introduced on a regular basis. It is always better to control the condition rather than to face adverse and alarming condition.

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