

DIABETES MELLITUS: AWARENESS AMONG GENERAL POPULATION¹Dr. Shazia Ghani, ²Dr. Arifa Urooj, ³Dr. Nisa Khan and ⁴Dr. Anum Siddiqui^{1,4}PMDC # 4214-AJK.²PMDC # 4160-AJK.³PMDC # 88538-P.

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Article Received on 19/05/2018

Article Revised on 09/06/2018

Article Accepted on 30/06/2018

ABSTRACT

Diabetes mellitus is a physiological condition caused by either production of inactive insulin or inadequate production of insulin. Insulin is responsible for regulating blood sugar levels. **Objectives:** This study aims to unveil how well informed the population is as far as diabetes mellitus is concerned. **Methods:** A total of 400 subjects were randomly selected and interviewed using two different structured questionnaires during the period from August 30, 2016, to September 17, 2016. The questionnaire was including risk factors, symptoms, and complications of type 2 diabetes mellitus, as well as methods of prevention. The SPSS (version 20), was used for statistical analysis. **Results:** Out of 400 subjects 200 were males, and 200 were female, their ages ranged from 18 to 24 years old, and 16.5% (66/400) were a diabetic patient. In this study, 52.5% (105/200) of the male respondents were not aware of the risk factors for diabetes mellitus. This was a larger number compared to the 40.5% (81/200) of female unaware. However, 92% of both male and female respondents taking health related courses had an idea about causes of diabetes mellitus. About 67% (268/400) of the respondents were not sure whether the condition is infectious or non-communicable. Only 29.25% (117/400) of participants identified high blood pressure as a major risk factor. Lifestyle and genetics were the major aspects most of the respondents were aware of causes of diabetes mellitus. Just 9.5% (38/400) knew that some medications could cause the disease. Moreover, close to 60% (240/400) were not aware of the methods of prevention. 39.5% (158/400) knew that diabetes mellitus could result in peripheral neuropathy while 30% (120/400) knew that diabetes mellitus could cause retinopathy. Other complications got a low response including chronic renal failure 12.5% (50/400), CHD 11% (44/400), sexual dysfunction 4.5% (18/400) and stroke 4.5% (18/400). **Conclusion:** There is a lack of awareness of diabetes mellitus among Pakistani population. This calls for larger studies to investigate the awareness of this morbid disease among the public. Raising the awareness of the population as an important sector of the community is badly needed.

KEYWORDS: Diabetes mellitus, inadequate, blood pressure.**INTRODUCTION**

Diabetes mellitus is a chronic disease with high mortality and morbidity due to its complication, macro-vascular: myocardial infarction, stroke, and peripheral arterial disease and microvascular like renal failure, peripheral and autonomic neuropathy. Moreover, blindness, diabetes mellitus also greatly impairs quality of life. Diabetes mellitus is alarmingly increasing due to increasing risk factors.

Diabetes is due to either the pancreas not producing enough insulin or the cells of the body not responding properly to the insulin produced.^[5]

There are three main types of diabetes mellitus:

- Type 1 DM results from the pancreas's failure to produce enough insulin. This form was previously

referred to as "insulin-dependent diabetes mellitus" (IDDM) or "juvenile diabetes." The cause is unknown.^[8]

- Type 2 DM begins with insulin resistance, a condition in which cells fail to respond to insulin properly.^[8] As the disease progresses a lack of insulin may also develop.^[9] This form was previously referred to as "non insulin-dependent diabetes mellitus" (NIDDM) or "adult-onset diabetes." The most common cause is excessive body weight and not enough exercise.^[8]
- Gestational diabetes is the third main form and occurs when pregnant women without a previous history of diabetes develop high blood-sugar levels.^[8]

Pakistan is among countries with the highest prevalence of diabetes mellitus (23.7%).^[4] As of 2015, an estimated 415 million people had diabetes worldwide,^[11] with type 2 DM making up about 90% of the cases.^[12,13] This represents 8.3% of the adult population,^[13] with equal rates in both women and men.^[14] As of 2014, trends suggested the rate would continue to rise.^[15] Diabetes at least doubles a person's risk of early death.^[5] From 2012 to 2015, approximately 1.5 to 5.0 million deaths each year resulted from diabetes.^[6,11]

The global economic cost of diabetes in 2014 was estimated to be US\$612 billion.^[16] In the United States, diabetes cost \$245 billion in 2012.^[17]

Diabetes mellitus is a preventable and controllable disease by raising the awareness of the public by its progression; it is noted that people are not putting preventive measures in spite of relatives being affected with the disease, (Scobie et al. 2009). People with diabetes can benefit from education about the disease and treatment, good nutrition to achieve a normal body weight, and exercise, with the goal of keeping both short-term and long-term blood glucose levels within acceptable bounds. Also, given the associated higher risks of cardiovascular disease, lifestyle modifications are recommended to control blood pressure.^[10]

We are not aware of researchers who have studied the awareness of diabetes mellitus among Pakistani population in Lahore area, so we conducted this research to estimate the awareness of population in Lahore area about this spreading disease.

1. METHODS

This cross-sectional comparative study was conducted at Lahore City, Pakistani. Four hundred students were selected randomly by choosing the 15th to come while waiting at a strategic place, all health workers who agree to participate during the same period were included. Participants were invited to sign a written informed consent and then responded to a self-written questionnaire. A questionnaire was used to record knowledge, attitude and preventive practices towards Diabetes Mellitus among the population in Lahore; Subjects below 18 years old were excluded, and most responses were from the North region of KSA.

2. ANALYSIS

The ethical committee of the Faculty of Medicine approved the research, and the Statistical Package for Social Sciences (SPSS) version 20 was used for analysis and Chi-Square was used to compare categorical data, with P-value < 0.05 considered significant.

3. RESULTS

The questions in the questionnaire were mainly based on the specific objectives of this study. Every respondent was anonymously assessed individually according to

their response to specific questions. This was followed by collective analysis to come up with the clear picture of the state of awareness as far as diabetes mellitus is concerned. Out of 400 subjects, 200 were males, and 200 were female). 90% (360/400) of them were not working in medical field. All the subjects were over 18 years old. 63% (252/400) had a bachelor degree, 14% (56/400) had a postgraduate university degree and 23% (92/400) with high school degree. In this population 30% had a chronic disease, 26.5% (106/400) had DM, and 3.5% (14/400) had asthma. 33% (132/400) of the tested population had previous education about Diabetes mellitus.

A. Risk Factors for diabetes mellitus

In this study, 52.5% (105/200) of the male respondents were not aware of the risk factors for diabetes mellitus.

This was a larger number compared to the 40.5% (81/200) of female unaware. However, 92% of both male and female respondents taking health related courses had an idea about causes of diabetes mellitus. About 67% (268/400) of the respondents were not sure whether the condition is infectious or non-communicable. Only 29.25% (117/400) of participants identified high blood pressure as a major risk factor. Lifestyle and genetics were the major aspects most of the respondents were aware of causes of diabetes mellitus. Just 9.5% (38/400) knew that some medications could cause the disease. (Table 1)

Table 1: (Diabetes mellitus awareness).

Risk Factors	Percentage of knowledge
Age	30.75% (123/400)
Genetics	68.5 (274/400)
Consuming more sweets	66% (246/400)
Overweight or obesity	52.25% (209/400)
High blood pressure	29.25% (117/400)
Lack of physical activity	71% (284/400)
Certain medications	9.5% (38/400)

B. Methods of prevention

57% (228/400) were aware that diabetes could be prevented. Despite being aware of the causes of diabetes mellitus, only 8% of the respondents aware of risk factors for diabetes mellitus take measures to prevent it or reduce the risk of developing the condition. 93.75% (375/400) of all respondents have no measures of preventing the condition in place. (Table 2)

As the study team learned from the clinicians in Lahore City hospitals, most of the persons at risk of developing the condition on the basis of genetics did not place any measures in place despite having close relatives with the condition. (Table 2).

Table 2: (Preventive Methods Knowledge).

Methods	Percent. of knowledge
Regular physical activity	72.25% (290/400)
Eat healthy and balanced food	62.5% (250/400)
Appropriate body weight.	60.75% (243/400)
No smoking.	48% (192/400)
Don't drink alcohol.	44.75% (179/400)

C. Signs and symptoms

33% (132/400) of the total population know about Diabetes mellitus symptoms, 16% (64/400) received this information from social media, and 17% (68/400) from a doctor. (table 4).

Table 3: (Diabetes mellitus symptoms awareness).

Symptom	Percent. of Knowledge
Blurry Vision.	42.5% (170/400)
Increased thirst or the need to urinate.	32.75% (131/400)
Feeling tired or ill.	31.5% (126/400)
Recurring skin, gum or bladder infections.	28.25% (113/400)
Unexpected weight loss.	26.75% (107/400)
Slow healing cuts or bruises.	24% (96/400)
Loss of feeling in the feet.	44.5% (178/400)

D. Complication of Diabetes mellitus

39.5% (158/400) knew that diabetes mellitus could result in peripheral neuropathy while 30% (120/400) knew that diabetes mellitus could cause retinopathy. Moreover, 29.5% (118/400). Other complications got a low response including chronic renal failure 12.5% (50/400), CHD 11% (44/400), sexual dysfunction 4.5% (18/400) and stroke 4.5% (18/400) (Table 4).

Table 4: (Diabetes mellitus complication awareness).

Complication	Percentage of Knowledge
Peripheral neuropathy	39.5% (158/400)
Retinopathy	30% (120/400)
Diabetic foot	29.5% (118/400)
Chronic kidney disease	12.5% (50/400)
Coronary heart disease	11% (44/400)
Sexual Dysfunction	4.5% (18/400)
Stroke	4.5% (18/400)

4. DISCUSSION

The results of this study indicate information deficiency among Lahore population. This might be the situation in the society at large, but that would require a wider scope of the study to prove. The risk of diabetes mellitus among the study population is very high mainly due to lack of awareness. This is further increased by the fact that even those aware of the condition do not take the initiative to prevent it. Above half of all the respondents have insufficient knowledge concerning diabetes mellitus. Lack of interest and ignorance were found to be

the major obstacles to attaining information about this condition. The public health sector should take the initiative of creating awareness on the major diseases affecting the society without any measures being taken. Diabetes can be prevented and controlled after its development in individuals but only with people being aware of its progression.

5. CONCLUSION

There is a lack of awareness of diabetes mellitus among the general population in Lahore City. This calls for larger studies to investigate the awareness of this morbid disease among the public. Raising the awareness of the University student as an important sector of the community is badly needed.

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