

# Awareness about Diabetes Mellitus in Rural Population of Punjab

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## ABSTRACT

Diabetes mellitus is a metabolic disease that affects multiple organs of body and every sixth person in Pakistan is suffering from it. Diabetic complications besides increasing the morbidity and mortality, are also increasing the financial burden. Life style changes and early diagnosis can significantly decrease the complications of the disease. This cross-sectional study was planned to assess the knowledge of rural population about diabetes, its risk factors and treatment modalities. Knowledge of rural population is poor about diabetes and health education programs should be started to raise awareness among masses about the disease.

**Keywords:** Diabetes mellitus, morbidity, mortality

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## INTRODUCTION

Diabetes mellitus is a metabolic disease that is characterized by hyperglycemia and it results from defects in insulin secretion, action or both, uncontrolled hyperglycemia for prolonged periods can cause dysfunction and failure of multiple organs including eyes, kidneys, heart, brain, nerves and blood vessels<sup>1</sup>. According to WHO 422 million people are living with diabetes mellitus and its prevalence is rising in middle and low-income countries<sup>2</sup>.

In Pakistan as well, diabetes is one of the most commonly encountered disease by physicians and diabetes prevalence data suggests that 35.3 million people among adult population are found to be diabetic, one in every sixth person is diabetic without knowing their disease<sup>3</sup>. The complications that are associated with diabetes mellitus besides mortality, are retinopathy, neuropathy, nephropathy, cardiovascular diseases and stroke. These complications result in significant morbidity and mortality that is increasing the financial burden on society. Diabetes is a silent disease; a large percentage of patients become aware of it when they have already developed some life-threatening complication. Knowledge of diabetes mellitus and its risk factors can help in early detection, better compliance and reduction of complications.

This study was planned to identify the areas of weaknesses regarding knowledge of diabetes mellitus, its presentation, risk factors, life style changes to improve outcome and complications of the disease. By improving the deficient knowledge about disease improvements can be made in the current programs and better disease control can be achieved.

The objective of study was to assess the knowledge of rural population about diabetes mellitus.

## MATERIALS AND METHODS

A total of 500 participants were enrolled through a non-probability, convenient sampling method in a community based cross-sectional study in the rural areas of district Multan Punjab from March 2017 to June 2017. Community members of age 20 years to 70 years, not diagnosed with diabetes, were included in the study. Exclusion criteria were age less than 20 and more than 70 years and diagnosed cases of diabetes. Study participants were interviewed by Lady Health Workers during their routine visits in community after written informed consent through a pre-designed, pre-tested questionnaire. During interviews, all questions were asked in local language (Urdu/Punjabi) which were later converted to English language for data analysis. Data was entered in SPSS-22 for analysis. Quantitative variables like age were presented as mean and qualitative variables like gender and questions were presented as percentages and frequencies.

## RESULT

A total of 500 participants were included in the study. Mean age was 37.14 years. 38% were housewives/unemployed, 26% were private workers, 19% had a government job and 17% were doing their own business. A total of 46% were males while 54% of them were females. 56% of the them had a monthly income of less than pkr 10,000, 40% had between 10,000 to 50,000 and 4% earned 50,000 to 1 lac monthly. 37% of study participants were uneducated, 45% had done matric, 12% intermediate and 6% graduation. 37% of the participants had a known diabetic patient in their family.

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Table 1:

Knowledge of diabetes	Correct(n)	%age	Complications	Correct(n)	%age
Diabetes is a condition of			Decaying limbs that require surgical removal	340	68
high blood sugar	400	80	Kidney problems	242	48.4
not enough insulin in blood	230	46	Eye problems	156	31.2
the body not responding to insulin	160	32	Loss of sensation in arms and legs	175	35
non-contagious	435	87	Cardiovascular problems	136	27.2
not curable	250	50	High blood pressure	300	60
occur in children, adolescents, adults	145	29	stroke	186	37.2
Insulin is a drug to control sugar	340	68	<b>Treatment available</b>		
Insulin is a natural hormone	300	60	Insulin injections are available diabetes	350	70
<b>Risk factors</b>			Tablets and capsules are available	240	48
Family history of diabetes	240	48	<b>Lifestyle measures</b>		
Age above 40	167	33.4	Diabetics should carry sweets	158	31.6
Pregnancy	43	8.6	should exercise regularly	199	39.8
Obesity	390	78	should have a low fat and high fiber diet	201	40.2
<b>Signs and symptoms</b>			should care for their toes and feet	97	19.4
Constant feeling of thirst	123	24.6	should have good weight control	341	68.2
Frequent urination	389	77.8	<b>Things diabetics should not do</b>		
Weight loss despite normal appetite	200	40	Diabetics should not eat sweets	452	90.4
Blurred vision	180	36	Diabetics should not smoke	234	46.8
Slow healing of cuts	385	77	Diabetics should not wear tight shoes	178	35.6
Tiredness and weakness	267	53.4	<b>monitoring of diabetic condition</b>		
Dry mouth	245	49	should test their blood sugar regularly	267	53.4
Headache	107	21.4	should go for regular eye check-up	123	24.6
Recurrent infections	68	13.6	should go for regular check-up	301	60.2

## DISCUSSION

This study was planned to raise awareness and determine the knowledge of rural population about diabetes to prevent and manage the disease. General knowledge was assessed in eight questions, majority (87%) knew that diabetes is a non-contagious disease in which blood sugar levels are raised (80%). 60% respondents knew that insulin controls blood sugar level and 68% said that it is a drug that is used by diabetic patients. Half of the population thought that diabetes is curable.46% people said that diabetes is a condition where body produces less insulin and only 29% thought that diabetes could occur in all age groups. In 2016, similar study was carried out in Kuwait where general knowledge of adults about diabetes was around 63%<sup>4</sup>. Slow wound healing (77%) and frequent urination (77.8%) were reported by majority of respondents as symptoms of diabetes.

A large number of people did not know that diabetes could present with recurrent infections, weight loss, problems of vision and headache. Symptoms of diabetes are disregarded in our country and people are not aware that damage could start several years before appearance of symptoms. Hyperglycemia progresses slowly and it is unfortunate that our population is not aware about the early symptoms of diabetes rather they are familiar with the complications. 78% people recognized that obesity could predispose to diabetes mellitus. In a study in Karala fatigue was considered most common symptom and diet as the risk factor by majority of respondents<sup>5</sup>.

70% people said that insulin injections were used to treat diabetes and 48% said that it was treated with tablets and capsules. In a study in India most of the participants believed that diabetes could be treated with oral medications<sup>5</sup>. Study participants (68.2%) knew that

diabetics should control their weight and they should prefer low fat and high fiber diet (40.2%) but most of them did not know that diabetics should keep sweet with them to avoid hypoglycemia. Knowledge about exercise was not appreciable<sup>7</sup>.19.4% said that diabetics should take care about their toes and feet. Out of 500 participants 68% knew diabetic foot as most common complication of diabetes followed by hypertension (60%) and nephropathy (48.4%). In another study in Ghana diabetic foot was reported to be most commonly known complication of diabetes<sup>8</sup>. More than half of population thought that diabetics should monitor their blood sugar levels regularly and should go for regular check-ups 24.6% thought that diabetics should go for regular eye examinations. In a study carried out in India among diabetic patients 86% people were aware of the eye complications of diabetes<sup>9</sup>.

## CONCLUSION

The conclusion of study is that knowledge of rural population is poor regarding diabetic presentation and treatment. People are not aware of the significance of life style changes and prevention of complications.

**Recommendation:** Taking into consideration the high prevalence of Diabetes in Pakistan health education programs should be started to elaborate the knowledge of diabetes in all age groups in local languages.

**Limitation:** The limitation of this study was that the study subjects were approached from a small sect of rural population hence the findings cannot be generalized to the whole rural population and secondly study population was not divided into diabetics and non-diabetics and that can affect the overall results of the study

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