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Research Article

**A COMPREHENSIVE STUDY ON RELATIONSHIP OF
DIABETES MELLITUS (TYPE 2) AND OBESITY IN PAKISTAN****Dr Wajahat Saleem¹, Dr Hafiz Abid Hussain², Dr Ammar Hassan³**¹Rural Health Center Mureedwala, Faisalabad, ²Tehsil Headquarter Hospital Narowal, ³Social Security Dispensary Rajoky, Sialkot.**Article Received:** March 2019**Accepted:** April 2019**Published:** May 2019**Abstract:**

Introduction: Type 2 diabetes mellitus is one of the most common public health issues worldwide and its incidence is on the rise, particularly in middle-income and low-income countries.

Objectives of the study: The main objective of the study is to analyze the relationship of diabetes mellitus (type 2) and obesity in Pakistan.

Methodology of the study: The cross sectional study was conducted at Allied Hospital Faisalabad during March 2018 till August 2018. The data was collected from 200 diabetic patients who visited the OPD of the hospital. The data was collected through a questionnaire. We assess the nutritional and economic health of patients by asking some survey questions. From the large pool of data we select health status, diet quality, lifestyle, food culture, food security, and demographic information of the selected patients. The economic and health status describe the level of awareness regarding disease.

Results: The data were collected from 200 diabetic patients. We also collect the basic characteristics of patients and compared these values with normal values. So we can find that diseases person have more blood pressure value as compared to normal. The demographical conditions of the patients explains the co-efficient and standard error values. The level of confidence interval is 90 and 95 in this table for the significant value.

Conclusion: It is concluded that T2DM patients require reinforcement of DM education including dietary management through stakeholders (health-care providers, health facilities, etc.) to encourage them to understand the disease management better, for more appropriate self-care and better quality of life.

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INTRODUCTION:

Type 2 diabetes mellitus is one of the most common public health issues worldwide and its incidence is on the rise, particularly in middle-income and low-income countries. When associated with complications, type 2 diabetes can have a profound impact on the person with consequences also for the society as a whole [1]. Diabetes was previously thought to be a disease of the affluent and mostly prevalent in urban areas but due to urbanisation, change in nutrition and a more sedentary lifestyle for many people, it has affected middle-income and low-income nations, including Pakistan [2].

Pakistan is a South Asian country with an area of 796 095 km² and a population of 207.7 million people. In terms of population, Pakistan is the sixth most populous country and is the 36th largest country by geographical area in the world [3]. Before 2018, the only previous national diabetes survey in Pakistan in 1999, reported the prevalence of type 2 diabetes as 11% using the oral glucose tolerance test (OGTT). Part of the same survey separately reported the prevalence of type 2 diabetes in different provinces of Pakistan [4]. The International Diabetes Federation (IDF) reported in its Atlas 5th edition the prevalence for Pakistan to be 6.8%, aged 20–79 years, but healthcare professionals with local insight always believed this to be an underestimate. Subsequently, there were conflicting findings with prevalence ranging from 7.2% to 19.21% in different regions of the country [5].

In T1DM, there is absolute insulin deficiency due to the destruction of β cells in the pancreas by a cellular mediated autoimmune process. In T2DM, there is insulin resistance and relative insulin deficiency. GDM is any degree of glucose intolerance that is recognized during pregnancy. DM can arise from

other diseases or due to drugs such as genetic syndromes, surgery, malnutrition, infections, and corticosteroids intake [6].

Objectives of the study:

The main objective of the study is to analyze the relationship of diabetes mellitus (type 2) and obesity in Pakistan.

Methodology of the study:

The cross sectional study was conducted at Allied Hospital Faisalabad during March 2018 till August 2018. The data was collected from 200 diabetic patients who visited the OPD of the hospital. The data was collected through a questionnaire. We assess the nutritional and economic health of patients by asking some survey questions. From the large pool of data we select health status, diet quality, lifestyle, food culture, food security, and demographic information of the selected patients. The economic and health status describe the level of awareness regarding disease.

Statistical analysis

The collected data were analyzed using SPSS software (version 21.0). The results are presented as a mean with 95% confidence interval limits or standard deviations. The significant value for $P < .05$ was accepted as statistically significant.

RESULTS:

The data were collected from 200 diabetic patients. We also collect the basic characteristics of patients and compared these values with normal values. So we can find that diseases person have more blood pressure value as compared to normal. The demographical conditions of the patients explains the co-efficient and standard error values. The level of confidence interval is 90 and 95 in this table for the significant value.

Table 01: Demographic characteristics and history of patients

Variables	Co-efficient	SE
Blood pressure	0.048	0.35
Healthy eating index (HEI)	-0.059	0.05
Smoker	0.060	0.80
Food security	0.106	0.12
Drinker	-0.343	0.08
Belong to city area	0.057	0.01
Belong to rural area	0.59	0.70
BMI	0.5460.24	

Table 02: Relationship between supplement intake and diet quality among diabetes patients.

Variables	Co-efficient	SE
Carbohydrate	0.019	0.03
Protein	0.061	0.08
Amino acid	0.106	0.19
Fat	0.434	0.02
Lipids	0.057	0.01
BMI of diseased person	0.29	0.07

DISCUSSION:

Recently, evidence suggested a link between the intake of soft drinks with obesity and diabetes, resulting from large amounts of high fructose corn syrup used in the manufacturing of soft drinks, which raises blood glucose levels and BMI to the dangerous levels. It was also stated by Assy that diet soft drinks contain glycated chemicals that markedly augment insulin resistance. Food intake has been strongly linked with obesity, not only related to the volume of food but also in terms of the composition and quality of diet [7]. High intake of red meat, sweets and fried foods, contribute to the increased the risk of insulin resistance and T2DM. In contrast, an inverse correlation was observed between intake of vegetables and T2DM. Consumption of fruits and vegetables may protect the development of T2DM, as they are rich in nutrients, fiber and antioxidants which are considered as protective barrier against the diseases [8]. Recently, in Japanese women, a report revealed that elevated intake of white rice was associated with an increased risk of T2DM [9].

A worldwide epidemic exists with respect to diabetes mellitus because of increased rates of obesity. There is a significant correlation between obesity and insulin resistance and obesity causes the increase in the severity of the disease. The adipose tissues in the visceral region function as an endocrine organ that produces certain proteins with role in glucose homeostasis. The expression level of some of these proteins is increased in diabetes and can serve as specific marker of the disease [10].

CONCLUSION:

It is concluded that T2DM patients require reinforcement of DM education including dietary management through stakeholders (health-care providers, health facilities, etc.) to encourage them to understand the disease management better, for more appropriate self-care and better quality of life. The overall purpose of treating T2DM is to help the patients from developing early end-organ complications which can be achieved through proper dietary management.

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