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Research Article

**PREVALENCE OF METABOLIC SYNDROME IN TYPE II  
DIABETES MELLITUS PATIENTS**<sup>1</sup>Muhammad Umair Ahsan, <sup>2</sup>Ahmed Raza, <sup>3</sup>Zarif Khan<sup>1</sup>Allama Iqbal Medical College, Lahore<sup>2</sup>Allama Iqbal Medical College, Jinnah Hospital Lahore<sup>3</sup>Spinghar Medical Institute of Higher Education, Afghanistan**Abstract:****Objective:** To know the frequency of metabolic syndrome in patients with type II diabetes mellitus.**Study design:** A descriptive cross-sectional study.**Place and Duration:** In the Medicine Unit I of Services Hospital, Lahore for one-year duration from March 2017 to march 2018.**Methods:** 200 total patients with type II diabetes mellitus were selected for the study.**Results:** During the study period, the majority of the patients were between 51 and 50 years, 41% (n = 82), and the mean and standard deviation were 51.85 + 6.21, 42% (n = 84). were male and 58% (n = 116) were female. The frequency of metabolic syndrome was 80% in patients with type II diabetes mellitus (n = 160).**Conclusion:** The frequency of metabolic syndrome is high in patients with type II diabetes mellitus. Therefore, it is recommended to classify all patients presenting with type II diabetes mellitus for metabolic syndrome. However, each configuration must have supervision to know the frequency of the problem.**Keywords:** type II diabetes, frequency, metabolic syndrome.**Corresponding author:****Muhammad Umair Ahsan,**  
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**INTRODUCTION:**

Metabolic syndrome is a set of risk factors for hypertension, glucose intolerance, dyslipidemia and abdominal obesity, including cardiovascular disease and diabetes. In the USA, the adult population Metabolic Syndrome prevalence was above than 26%. Similarly, in 7 European countries the Metabolic Syndrome prevalence was about 23%. It is suggested that 21% to 25% of Southern Asians develop Metabolic Syndrome and much more are prone to this. The exact metabolic syndrome prevalence in Pakistan is unknown. The main cause for Metabolic Syndrome attracting commercial and scientific attention is the raised mortality and morbidity, and in particular CVD-related factors. and ischemic heart disease; People with metabolic syndrome are associated with the most common cause of death in death (almost 70% CVD), the most leading cause of death is type 2 diabetes. Obesity, especially abdominal obesity, is usually linked with resistance to the insulin effects on the use of glucose in the environment and fatty acids, hyperinsulinemia and which cause insulin resistance, type 2 diabetes mellitus, related adipocyte cytokines (adipokines), hyperglycemia and hyperinsulinemia all leads to the process of (ASCVD) atherosclerotic cardiovascular disease can lead to abnormal lipid profile, vascular endothelial dysfunction, vascular inflammation and hypertension. The aim of this study was to determine the prevalence of metabolic syndrome in patients with diabetes mellitus type II. The importance of the study is that in our configuration increases the frequency of metabolic syndrome in diabetic patients, we can also consider diabetes type II as an indicator of metabolic syndrome and can easily diagnose

metabolic syndrome in diabetic patients and if this is detected metabolic syndrome with control of Diabetes mellitus.

**MATERIALS AND METHODS:**

This descriptive cross-sectional study was held in the Medicine Unit I of Services Hospital, Lahore for one year duration from March 2017 to march 2018. 200 patients who met the criteria for inclusion in the Department of Medicine after the informed consent was taken. Metabolic syndrome occurred when at least three of the following four criteria were met:

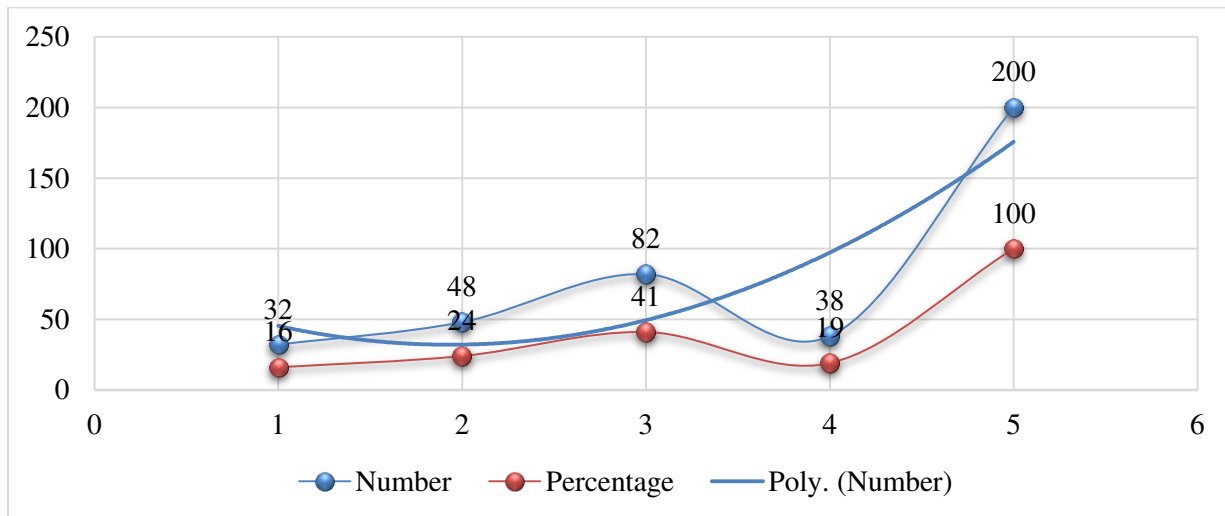
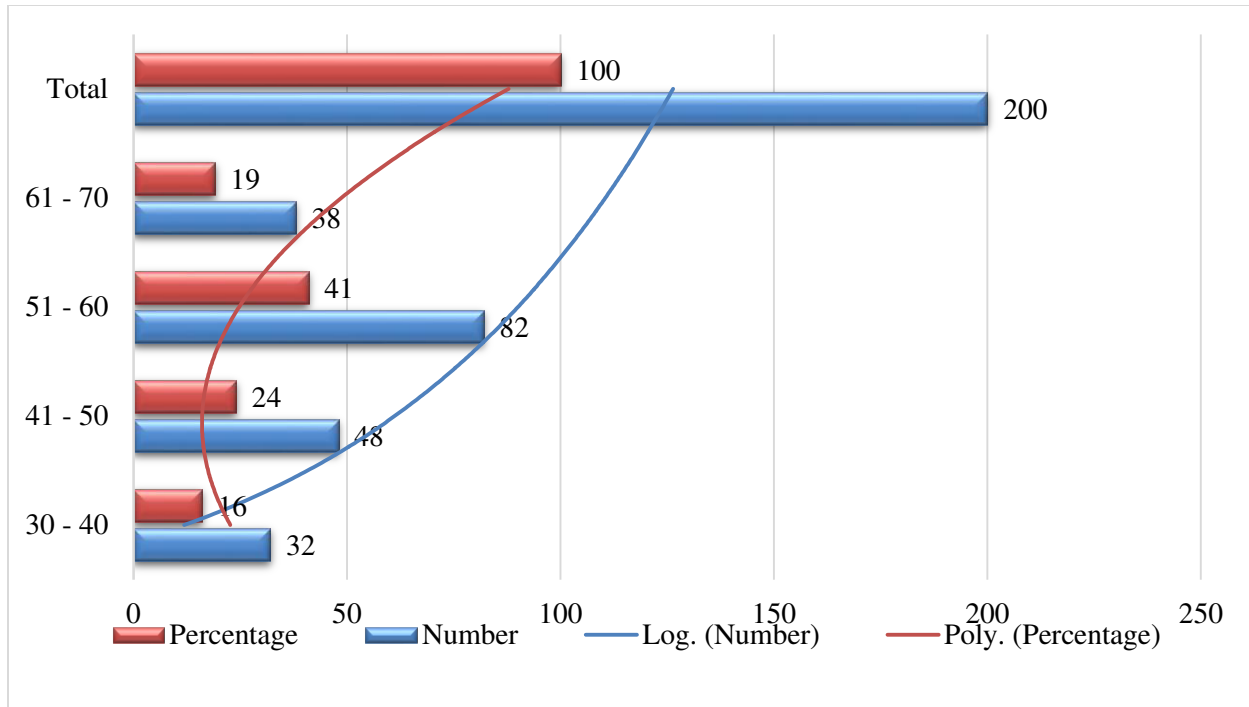
- 1) BMI  $\geq 30$ ;
- 2) diastolic blood pressure  $\geq 90$  mmHg or systolic blood pressure  $\geq 140$  mmHg;
- 3) fasting triacylglycerol  $\geq 150$ mg / dL (1.8 mmol / L), (HDL-C) high density lipoproteins  $< 41$  mg / dL in men (1.10 mmol / L) and  $< 49$  mg / dL (1 in women 30 mmol / L;
- 4) Blood sugar fasting  $\geq 116$  mg / dL (5.91 mmol / L). All this information is recorded in a form (Annex). The collected data were analyzed and analyzed in SPSS version 16.0. Demographic data (gender) are presented as frequency and percentage.  $\geq 140$  PBS, PAD 90 triglycerides and fasting glucose in patients with type II diabetes mellitus  $\geq 110$  mg / dL (6.1 mmol / L) mm Hg and calculated (ie BMI  $\geq 30$ , metabolic syndrome frequency and mean  $\pm$  mean age of patients the standard deviation was calculated.

**RESULTS:**

200 total patients were selected for the study to determine the incidence of metabolic syndrome in patients with type II diabetes mellitus.

**Table – I:** Age Distribution Among 200 Subjects

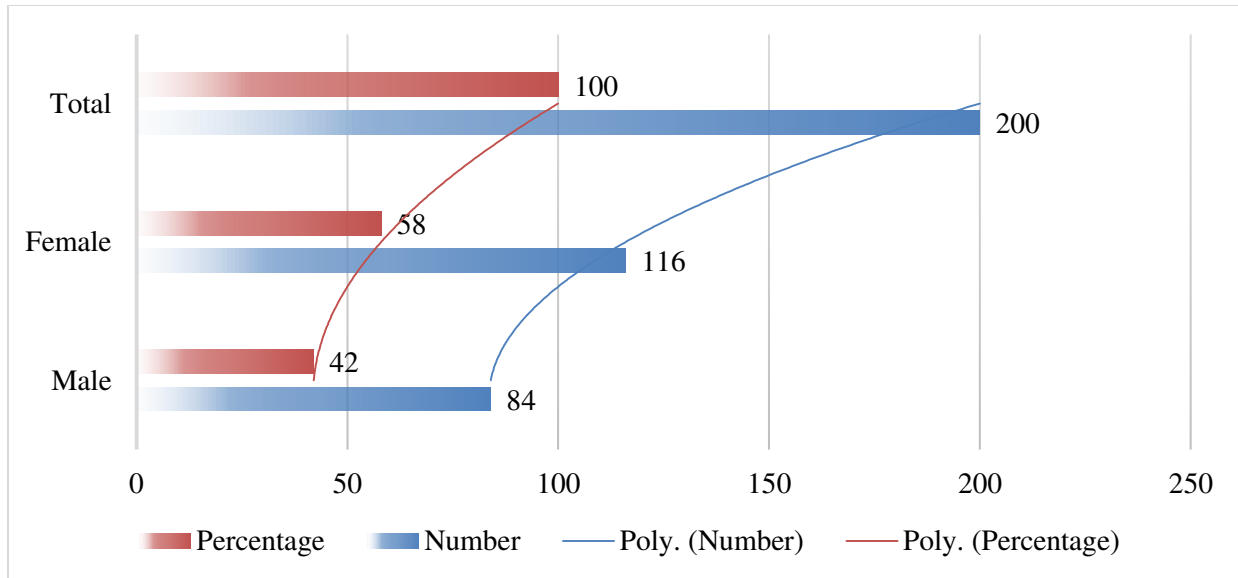
Age (Years)	Number	Percentage
30 - 40	32	16
41 - 50	48	24
51 - 60	82	41
61 - 70	38	19
Total	200	100
Mean $\pm$ SD	51.85	6.21



Age distribution of the patients was 42% (n = 32) of the age distribution, 30-40 years, 24% (n = 48) 41-50 years, 41% (n = 82) 51-60 showed between.

**Table – II:** Gender Distribution Among 200 Subjects

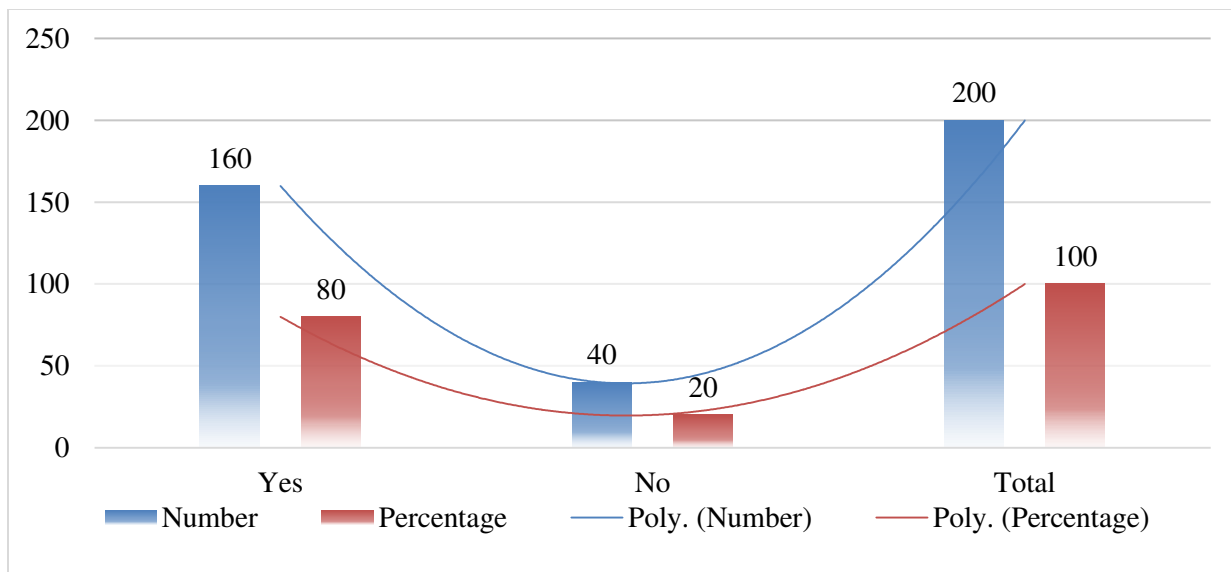
Gender	Number	Percentage
Male	84	42
Female	116	58
Total	200	100



The mean SD and 51.85 + 5.21 years between the ages of 61 and 70 years were calculated as 19% (n = 38). The distribution was 42% (n = 84) male and 58% female (n = 116). The frequency of metabolic syndrome in type II diabetes mellitus patients is 80% (n = 160) and 20% (n = 40) without metabolic syndrome.

**Table – III:** Metabolic Syndrome Frequency Among 200 T2DM Subjects

Metabolic Syndrome	Number	Percentage
Yes	160	80
No	40	20
<b>Total</b>	<b>200</b>	<b>100</b>



**DISCUSSION:**

In addition to the (CVD) cardiovascular disease mortality and morbidity, metabolic syndrome (MS) predicted that it is strongly linked with the type 2 diabetes mellitus (T2DM) development, a significant risk factor for CVD. In this study, we planned to know the frequency of metabolic syndrome in individuals with type II diabetes mellitus in our population. The importance of the study is that in our configuration increases the frequency of metabolic syndrome in diabetic patients, we can consider diabetes type II as an indicator of metabolic syndrome and easily diagnose the metabolic syndrome in diabetic patients and if this is detected they control the metabolic syndrome with the control of diabetes mellitus. Study results showed that the majority of patients in the study, 51% and 51 years old (n = 82), 41%, and SD 51.85 + 6.21 years, 42% (calculated as n = 84) male and 58% (n = 116), female cases found that the prevalence of metabolic syndrome with diabetes type II was 80% (n = 116), and 20% (n = 40) any metabolic syndrome. The study findings were consistent with the study by Ahmed N and workers who had twenty-six (63.63 males (%)) syndrome of seventy-six (63.63 males) who had seventy-six (76%) metabolic syndrome, 56 females, and forty-eight (85.71%) were diagnosed with metabolic syndrome. In this study, the MS prevalence was higher significantly in females than in men. The results were estimated in our study of 2 diabetes mellitus in the Caucasus and 75.6% among Chinese people with type 2 diabetes mellitus, that is, the prevalence of 80 to 70% of the type is in agreement with other studies. Metabolic syndrome is more common in type 2 diabetic women compared to male counterparts. Different studies have shown that gender has very different effects on metabolic syndrome in different populations. In the USA, the metabolic syndrome is more common in white men. In Black Americans, Mexican Americans, Korea, Kinmen, Iran, India and Oman, women had a higher incidence than men. Nigerian women also have a higher percentage than men. However, according to other studies, in the light of the results of the current study, we may consider type II diabetes mellitus as an indicator of metabolic syndrome and can easily diagnose metabolic syndrome in diabetic patients and also control the metabolic syndrome. with the control of diabetes mellitus.

**CONCLUSION:**

The prevalence of metabolic syndrome is high in patients with type II diabetes mellitus. Therefore, it is recommended that all patients with type II diabetes mellitus be classified for metabolic syndrome.

However, each configuration must have supervision to know the frequency of the problem.

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