Hyderabad Journal of Sciences

Vol. 1 No. 08 (2025)

https://www.hjsjournal.com/

E-ISSN: 3105-4676
P-ISSN: 3105-4684

# PREVALENCE AND CLINICAL PROFILE OF METABOLIC SYNDROME

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## ABSTRACT

Background: Metabolic syndrome (MetS) is a collection of risk factors which increase the likelihood and rate of coronary heart disease and type 2 diabetes mellitus (T2DM). MetS is on the rise in Pakistan (disease exacerbating factors of urbanization, dietary imbalance and sedentary existence).

Objective: To estimate the frequency and clinical profile of Metabolic Syndrome (MBS) in adult patients attending a teaching hospital.

Materials and Methods: A cross sectional study was conducted in Indus Medical College, TM Khan. One hundred adult patients, aged ≥ 18 years were recruited. MetS was defined according to NCEP ATP III guidelines. Analyses were performed in SPSS.

Results: The prevalence of MetS in the participants was 47 %. The 58.2% of the study cohort was female, and 41.7% male. Central obesity (85.1%), hypertension (74.5%), and raised fasting blood glucose level (70.2%) were the most common physical examination findings observed. Older age, BMI > 25 and inactivity were significantly associated with MetS ($p < 0.05$).

Conclusions: About one half of hospital patient with MetS are adult and the commonest components were abdominal obesity followed by hypertension. Public health interventions to promote lifestyle modification and early screening are now a necessity to halt the increasing burden of MetS in Pakistan.

Keywords: Metabolic syndrome, Overweight Obesity, Hypertension, Diabetes

*How to Cite: Baloch GH, Tehreem J. Prevalence and clinical profile of metabolic syndrome. Hyd J Sci.2025;8(1):12-14. DOI: https://doi.org/10.5281/zenodo.17112509*

## Article History

Received:
May 09, 2025

Revised:
June 12, 2025

Accepted:
July 21, 2025

Available Online:
Aug 31, 2025

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## INTRODUCTION:

Metabolic syndrome (mets) refers to a group of interconnected health conditions that occur simultaneously - mainly abdominal obesity, insulin resistance, hypertension, and abnormal cholesterol or lipid levels. When combined, these factor significantly increase the risk of development of heart diseases and type 2 diabetes [1].

With changing diets, low physical activity and rapid urbanization, Mates has become a growing public health concern, especially in developing countries such as Pakistan [2]. The situation is generally diagnosed when a person presents with three or more of these risk factors [3].

In Pakistan, the increasing rate of overweight and obesity, increased consumption of unhealthy foods, and the sedentary lifestyle have contributed to the increasing proliferation of all mets [4]. Despite this dangerous trend, hospital-based data is limited that explains how mates and its individual components are distributed in various age groups and between gender.

This study was done to assess the prevalence of mates in adult patients coming to a teaching hospital. The final goal is to support the initial identity and timely management, while also promoting preventive strategies that can reduce long -term complications.

## MATERIALS AND METHODS:

Study Design and Settings

A descriptive, cross-section was studied in six months (July to December 2024) at Teaching Hospital TM Khan.

Sample size and sampling technique

A total of 100 adult patients (age of18 years) visiting the outpatient department were selected through convenience samples. Written informed consent was obtained from all participants.

inclusion criteria:

Adults aged 18 or older

Ready to participate and provide informed consent

Currently not on treatment for any metabolic disorder (new diagnosed cases)

Exclusion criteria:

Pregnant women

Chronic kidney disease, liver cirrhosis, or patient with known endocrine disorders

Long -term patients on corticosteroids

Data collections and definitions

Data was collected using a structured questionnaire cover:

Demographic (age, gender, business)

Medical History (High blood pressure, diabetes, family history)

Lifestyle factors (smoking, physical activity, diet habits)

Metabolic syndrome was defined:

Presence of either of the following:

1. WC> 102 cm in men or 88 cm in women
2. TG ≥150 mg/DL
3. HDL-C <40 Mg/Dl in Men or <50 Mg/DL in women
4. BP/1330/85 mmHg
5. Fasting glucose ≥100 mg/dL [5]

We used SPSS to see data. For continuous variables, we used ± SD, and for classified data, we used frequencies/percent. The Chi-Square test was employed to identify the relationship between mets and factors such as sex, age, BMI and activity levels. P-values of 0.05 or less were considered statistically important..

## RESULTS:

Demographic Profile

Among 100 participants:

• Mean age: 46.7 ± 12.4 years
• Gender distribution: 54% female, 46% male
• Urban residents: 69%
• Employed individuals: 43%

Prevalence of Metabolic Syndrome

• MetS diagnosed in 47 participants (47%)
• Higher in females (58.3%) compared to males (41.7%)
• Prevalence increased with age:
- 18-30 years: 21.4%
- 31-50 years: 45.2%
- 50 years: 68.2%

**TABLE 1: FREQUENCY OF METABOLIC COMPONENTS**

| Component | Frequency among MetS patients (%) |
|---|---|
| Abdominal obesity | 85.1 |
| Hypertension | 74.5 |
| Elevated fasting glucose | 70.2 |
| Low HDL-C | 66 |
| Raised triglycerides | 59.6 |

A high ratio of individuals with metabolic syndrome (mets) was found to lead to the inactive lifestyle, with a reporting of 72% with minimal physical activity, compared to only 40% without mets. This difference was statistically important ($p < 0.05$), suggests a strong link between lack of physical activity and the presence of metabolic abnormalities.

A positive family history of diabetes was noted in 34% of the participants in the METS group, which highlights a potential genetic tendency. Additionally, smoking was diagnosed by 19% individuals, which further contributes to their overall heart risk profile.

The average body mass index (BMI) in the METS group was quite high, which meant 30.1 ± 3.8 kg/m and, which indicates a trend towards obesity. In contrast, individuals without mates had an average BMI of 25.6 kg 3.4 kg/m. Statistical analysis revealed a strong relationship between the presence of BMI and metabolic syndrome (P <0.01) of 30 or more, which strengthens the role of obesity as a significant contribution factor in its development.

## DISCUSSION:

Our results indicate that about one of the two adults had mates showing the high burden of the disease. It is also according to other studies conducted elsewhere in Pakistan and even South Asia [6, 7]. It underlines the mounting burden of lifestyle related diseases.

The high proliferation of mets in women compared to men may be associated with fats distribution [8] with physical inactivity, obesity and acquisition pattern of hormonal links. It is interesting that the most frequent items in both sexes were abdominal obesity, which focuses a relevant to public health intervention.

The prevalence of high blood pressure and high fasting glucose levels was also significantly higher, which corresponds to previous studies where these factors are shown to develop earlier among South Asians with Mets [9]. The co-colusing of these risk factors is eligible for early search and integrated clinical management guidelines at the primary care level.

The stability of the relationship between any SB and the mate emphasizes the need for community -based health education and intervention promoting PA. The relation of weight and mates also suggests that the most important way to control this syndrome is simply based on reducing weight [10-12].

In addition, selection may arise as we used a feature sample. To evaluate any effect of these interventions requires a large multi -level study of the future.

## CONCLUSION:

This study exposes the increasing burden of metabolic syndrome in adults introducing obesity, high blood pressure and elevated blood sugar as the most common components. Women and old people were more observed thus, the initial screening, public awareness and intervention campaign should be planned.

## REFERENCES:


1. Alberti KG, Zimmet P, Shaw J. The metabolic syndrome – a new worldwide definition. Lancet. 2005;366(9491):1059–62.
2. Zafar J, Nisar N, Ahmed M, Abbas S, Yaqoob U, Babar Z, et al. Frequency of metabolic syndrome in medical students of Karachi. J Pak Med Assoc. 2019;69(8):1093-7.
3. Grundy SM, Brewer HB Jr, Cleeman JI, Smith SC Jr, Lenfant C, National Heart, Lung, and Blood Institute, et al. Definition of metabolic syndrome. Circulation. 2004;109(3):433-8.
4. Jafar TH, Chaturvedi N, Pappas G. Prevalence of overweight and obesity and their association with hypertension and diabetes mellitus in an Indo-Asian population. CMAJ. 2006;175(9):1071–7.
5. Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. Executive summary of the ATP III report. JAMA. 2001;285(19):2486-97.
6. Bawany FI, Yousuf A, Mahar SA. Metabolic syndrome: frequency and gender differences at an outpatient clinic. J Ayub Med Coll Abbottabad. 2020;32(2):180-4.
7. Hussain A, Hydrie MZ, Claussen B, Asghar S. Type 2 diabetes and obesity in Pakistan: a review of the existing literature. Prim Care Diabetes. 2007;1(4):205–11.
8. Gul N. Knowledge, attitudes and practices of type 2 diabetic patients. J Ayub Med Coll Abbottabad. 2010;22(3):128–31.
9. Misra A, Khurana L. Obesity and the metabolic syndrome in developing countries. J Clin Endocrinol Metab. 2008;93(11 Suppl 1):S9–30.
10. World Health Organization. Global strategy on diet, physical activity and health. Geneva: WHO; 2004.
11. Aziz KU, Faruqui AM, Patel N, Jaffery H, Waheed A, Soomro A, et al. Prevalence of metabolic syndrome in Pakistan. Metab Syndr Relat Disord. 2004;2(3):267–75.
12. Ranasinghe P, Mathangasinghe Y, Jayawardena R, Hills AP, Misra A, Byrne NM, et al. Prevalence and trends of metabolic syndrome among adults in the Asia-Pacific region. BMC Public Health. 2017;17:101