

**Prevalence of Metabolic Syndrome and Its Components  
Based on International Diabetes Federation (IDF)  
Definition in Yogyakarta, Indonesia**  
**Choo Hao Jian<sup>1</sup>, Elizabeth Henny Herningtyas<sup>2</sup>, Fatwa  
Sari Tetra Dewi<sup>3</sup>.**

- <sup>1</sup> International Study Program of Medicine, Faculty of Medicine, Universitas Gadjah Mada.
- <sup>2</sup> Department of Clinical Pathology, Faculty of Medicine, Universitas Gadjah Mada.
- <sup>3</sup> Department of Public Health, Faculty of Medicine, Universitas Gadjah Mada

**ABSTRACT**

**Title:** Prevalence of Metabolic Syndrome and Its Components Based on International Diabetes Federation (IDF) Definition in Yogyakarta, Indonesia

**Background:** Metabolic syndrome is a group of risk factors which increase morbidity and mortality for cardiovascular disease and diabetes. The prevalence of MetS has been increasing globally and is important information for the public health sector. No study has described the prevalence of MetS and its components in Yogyakarta. This study strives to describe the aforementioned and the influence demographic and geographic factors have on the prevalence.

**Objectives:** To determine the prevalence of MetS and its components in the population of Yogyakarta.

**Method:** Retrospective study using secondary data from the IFLS 4 survey in Yogyakarta. A total of 766 male and female subjects aged  $\geq 40$  included in analysis after inclusion and exclusion criteria. MetS defined by International Diabetes Federation (IDF) criteria with ethnicity-specific values for waist circumference. Prevalence of MetS and characteristic of each component of MetS are expressed as mean or %. T-test and chi-square used to evaluate the difference of the MetS components caused by demographic factors and their statistical significance.

**Result:** Prevalence of MetS in Yogyakarta was 13.19%. The most common MetS component was hypertension, 60.44%; followed by dyslipidemia, 56.27%; central obesity, 32.38%; pro-inflammatory state, 15.71%; and insulin resistance, 0.78%. There is a higher prevalence of MetS among the females compared to the males (15.88 vs 10.19%), pre-elderly compared to the elderly (13.90 vs 12.19%), Javanese compared to other ethnicities (13.23

vs 10.00%), urban compared to rural population (15.06 vs 8.37%).

**Conclusion:** Findings suggest a low prevalence of MetS. Public health intervention should be implemented to reduce the prevalence of MetS to the minimum achievable in Yogyakarta and Indonesia.

**Keywords:** Prevalence, Metabolic Syndrome, Yogyakarta, IDF criteria, MetS, Type II Diabetes Mellitus, Insulin Resistance, Central Obesity, Waist Circumference, BMI, Hypertension, Dyslipidemia, HDL, hsCRP, Gender, Ethnicity, Age, Elderly, Geographical factor, Urban, Rural

## **ABSTRAK**

**JUDUL:** Prevalensi Sindrom Metabolik dan Komponen-komponennya berdasarkan Definisi International Diabetes Federation (IDF) di Yogyakarta, Indonesia.

**Latar Belakang:** Sindrom Metabolik (MetS) merupakan sekelompok faktor risiko yang meningkatkan morbiditas dan mortalitas penyakit kardiovaskuler dan diabetes. Prevalensi MetS meningkat di seluruh dunia dan merupakan informasi penting untuk sektor kesehatan masyarakat. Saat ini belum ada penelitian tentang prevalensi MetS dan komponennya di Yogyakarta. Penelitian ini berharap untuk menghitung prevalensi tersebut dan melihat pengaruh faktor demografi dan geografi terhadap prevalensi MetS.

**Objektif:** Menghitung prevalensi MetS dan komponen-komponennya di kalangan penduduk Yogyakarta.

**Metode:** Penelitian ini merupakan studi retrospektif yang menggunakan data sekunder dari survei IFLS 4 di Yogyakarta. Sebanyak 766 subjek pria dan wanita berusia  $\geq 40$  dianalisa setelah disaring pakai kriteria inklusi dan eksklusi. Ada tidaknya MetS ditentukan dengan kriteria International Diabetes Federation (IDF) dengan nilai untuk lingkar perut sesuai etnis. Prevalensi MetS dan ciri-ciri setiap komponen MetS diekspresikan sebagai rata-rata atau %. T-test dan chi-square digunakan untuk menilai perbedaan nilai komponen MetS yang disebabkan oleh faktor demografi dan geografi dan signifikansi statistiknya.

**Hasil:** Prevalensi MetS di Yogyakarta adalah 13.19%. Komponen MetS yang paling sering ditemukan adalah hipertensi, 60.44%; diikuti dengan dyslipidemi, 56.27%; obesitas sentral, 32.38%; status pro-inflammatory, 15.71%; dan insulin resistance, 0.78%. Terdapat prevalensi MetS yang lebih tinggi di kalangan wanita dibandingkan pria (15.88 vs 10.19%), pre-elderly dibandingkan elderly (13.90 vs 12.19%), Javanese dibandingkan etnis lain (13.23 vs 10.00%), dan di kota dibandingkan dengan di desa (15.06 vs 8.37%).

**Simpulan:** Hasil penelitian menemukan prevalensi MetS rendah di Yogyakarta. Intervensi dari bidang kesehatan masyarakat harus diimplimentasikan supaya prevalensi MetS di Yogyakarta dan Indonesia bisa minimal.

**Kata Kunci:** Prevalensi, Sindrom Metabolik, Yogyakarta, kriteria IDF, MetS, Diabetes Mellitus Tipe 2, Insulin Resistance, Obesitas Sentral, Lingkar Perut, BMI,