Methods

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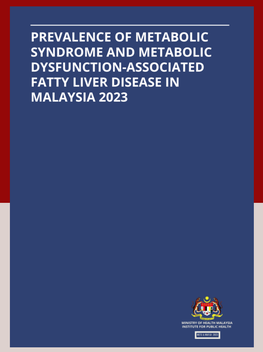

This research highlight is based on the study on **The prevalence of metabolic syndrome and metabolic dysfunction-associated fatty liver in Malaysia 2023**

Who is this publication for?

- Disease Control Division
- Family Health Development Division
- Medical Development Division
- Health Education Division
- Nutrition Division
- Public health practitioners
- Clinicians

Purpose of this document

To highlight the high prevalence of metabolic syndrome in Malaysia and propose policy and clinical recommendations

RESEARCH HIGHLIGHT serial number- pending

MOH number

The Metabolic Syndrome Epidemic in Malaysia

"A ticking time bomb"

Issue

Metabolic syndrome **(MetS)** is a **cluster of cardiometabolic dysfunctions** characterised by high fasting plasma glucose, waist circumference, blood pressure, triglycerides, and low HDL cholesterol (1).

People with the condition have higher risks for adverse **cardiovascular** outcomes and **all-cause mortality** (2).

MetS is highly predictive of new-onset **type 2 diabetes** and is associated with increased risks of many **cancers**, including liver, colorectal, pancreatic, and breast cancers (3, 4).

According to a meta-analysis, the prevalence of MetS using the JIS criteria was **31.4% globally**, **34.1% in upper-middle-income countries**, and **29.5% in the Western Pacific region** (5).

MetS is a disorder with a **high socioeconomic impact** on global health (6).

Despite the clinical and public health ramifications of MetS, there is a knowledge gap on the latest prevalence of MetS in Malaysia.

Key Messages

35.9% **or a staggering 8.5 million adults** in Malaysia have MetS!

- MetS is more common among **older age categories**, those with **lower education levels**, and the **B40 income group**.
- MetS is **not uncommon among underweight and normal-weight** individuals in Malaysia and should not be overlooked. They are also at increased risk of cardiovascular disease, kidney disease, and mortality.
- **Urgent decisive actions** are needed to manage the epidemic in Malaysia

Methods

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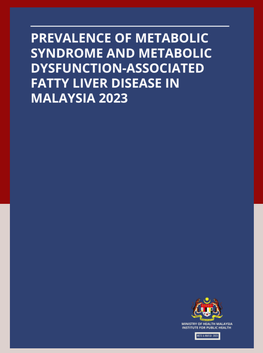

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Background

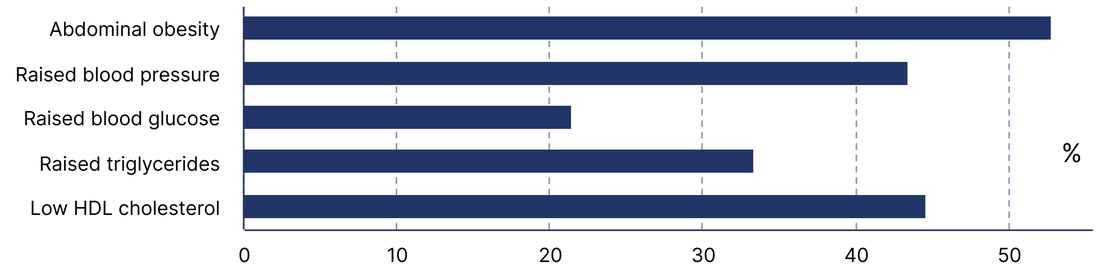
In the late twentieth century, insulin resistance was shown to be fundamental to metabolic syndrome (MetS), which means a constellation of obesity-related metabolic derangements predisposing to type 2 diabetes and cardiovascular disease (7).

Many diagnostic criteria for MetS have been established in recent decades. The prominent ones include the first definition by the World Health Organization (WHO) in 1998, followed by the United States National Cholesterol Education Program Adult Treatment Panel III (NCEP-ATP III) in 2001, and the International Diabetes Federation (IDF) in 2005 (8).

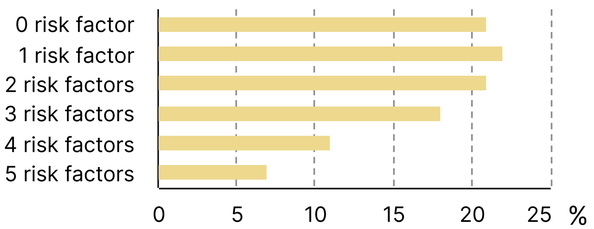
In 2009, the Joint Interim Statement (JIS) was introduced to harmonise the differences between various diagnostic definitions and is being widely adopted by studies worldwide (1).

Key Findings

Prevalence of individual metabolic risk factors among adults in Malaysia



Prevalence of multiple metabolic risk factors among adults in Malaysia

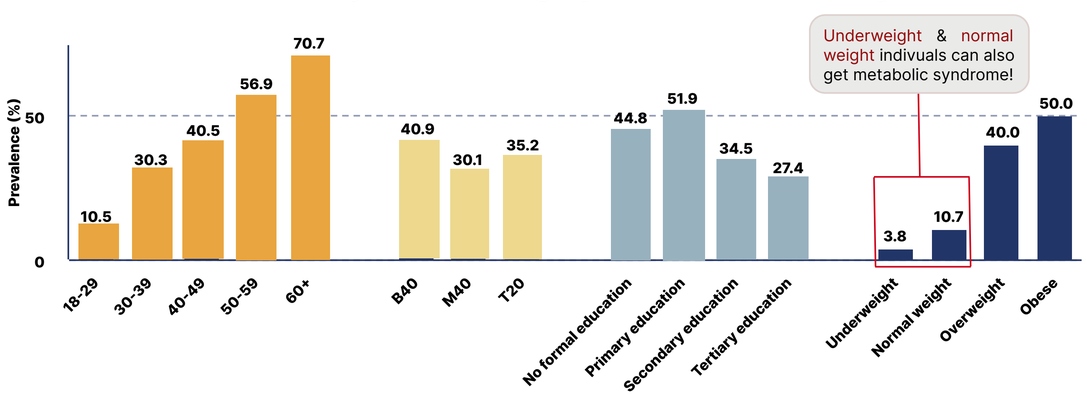


Prevalence of metabolic syndrome (≥3 risk factors)

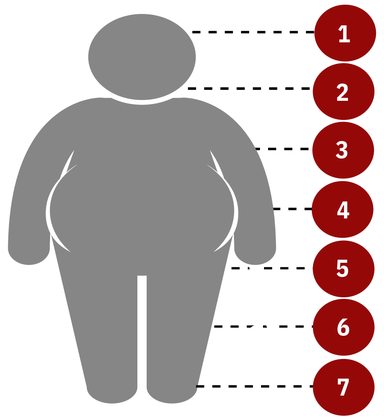
35.9%

or 8.5 million adults in Malaysia have metabolic syndrome!

Prevalence of MetS by sociodemographic factors and body mass index



Clinical characteristics of individuals with MetS



1. Mean age: **40.4 years**
2. Mean BMI: **29.0 kg/m2**
3. Abdominal obesity: **82.7%**
4. Diabetes: **34.1%**
5. Hypertension: **59.2%**
6. Hypercholesterolemia: **77.6%**
7. High LDL cholesterol: **64.5%**

They are young in their economically productive age and have many comorbidities with unfavourable clinical profiles

Key Considerations

Policymakers & programme managers

- **Acknowledge the issue and raise priority of MetS** in the national health agenda-setting. For example, MetS can be considered to be included in the next National Strategic Plan for Non-Communicable Diseases.
- **Allocate sufficient resources** to operationalise the plan, including disease surveillance and clinical management.
- **Expand population screening programmes** such as the National Health Screening Initiative (NHSI) to include MetS screening, especially among high-risk subpopulations such as older age categories, the B40 group and those with lower education levels. Lipid panels can be checked using finger prick capillary blood for point-of-care testing.
- **Health promotion** via traditional and social media to increase awareness and knowledge of MetS among the general population is critical. The information should include **metabolically obese normal weight (MONW)**, which has an increased risk of cardiovascular disease, kidney disease, and mortality (8, 9).

Healthcare practitioners

- **Increase MetS management knowledge** among healthcare personnel, which includes primary care providers and specialists from relevant disciplines.
- The development of **Clinical Practice Guidelines** on MetS can help bring experts from different backgrounds to harmonise the management of patients.
- Patient management should focus on a **multidisciplinary approach** with a clear specialist referral pathway.
- Healthcare personnel, especially those in primary care, should **actively screen, diagnose, and manage MetS** to prevent complications.

Summary of Action Points

- Raise the priority of MetS in the national health agenda-setting
- Include MetS screening in existing population screening programmes
- Health promotion to increase awareness and knowledge among the general population
- Increase knowledge about MetS management among healthcare personnel