International Conference on Environmental Health and Resilience

ICEHR - 2026

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COMPARISON OF METABOLIC SYNDROME PREVALENCE USING FOUR DIAGNOSTIC CRITERIA IN JAFFNA POPULATION

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Abstract

Metabolic Syndrome (MetS) is a major risk factor that significantly increases the risk of cardiovascular diseases and type-2 diabetes. The diagnosis of MetS varies depending on the criteria applied.

This study aims to assess the prevalence of MetS in a representative sample of the Jaffna population using four established definitions: World Health Organization (WHO), International Diabetes Federation (IDF), National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP III), and American Heart Association/National Heart, Lung, and Blood Institute (AHA/NHLBI).

A cross-sectional study was conducted involving 753 individuals drawn from two urban and two rural villages in the Jaffna district. Anthropometric, biochemical, and clinical parameters were collected to determine MetS status according to the four diagnostic definitions. Each participant was classified as having or not having MetS under each criterion set.

The prevalence of MetS varied substantially across definitions. According to the AHA/NHLBI criteria, 78.0% of the populations were diagnosed with MetS, the highest among all definitions. This was followed by 27.6% using IDF, 24.4% using NCEP ATP III, and 16.1% using WHO criteria. These differences highlight the influence of diagnostic thresholds and required components on prevalence estimation. A higher prevalence under AHA/NHLBI criteria suggests greater sensitivity or lower diagnostic thresholds in this population.

There is significant variation in MetS prevalence depending on the diagnostic criteria applied. The choice of definition has critical implications for public health surveillance and clinical decision-making. Findings underscore the need for contextualized guidelines in assessing metabolic risk in specific populations.

Keywords

Metabolic Syndrome; Prevalence; Diagnostic Criteria; Jaffna Population; Cardiovascular Risk