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## Original article

# The reliability of the National Cholesterol Education Program's Adult Treatment Panel III (NCEP/ATP III) and the International Diabetes Federation (IDF) definitions in diagnosing metabolic syndrome (MetS) among Gaza Strip Palestinians

Mahmoud M. Sirdah<sup>a,\*</sup>, Asmaa S. Abu Ghali<sup>b</sup>, Nahed A. Al Laham<sup>c</sup>

<sup>a</sup> Biology Department, Al Azhar University-Gaza, Palestine

<sup>b</sup> Palestinian Ministry of Health, Palestine

<sup>c</sup> Laboratory Medicine Department, Al Azhar University-Gaza, Palestine

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## SUMMARY

**Objectives:** Metabolic syndrome (MetS) which is a multifaceted syndrome, has been demonstrated as a common precursor for developing cardiovascular diseases and/or type 2 diabetes mellitus. Different diagnostic definitions for MetS have been proposed and recommended. We set up to evaluate the reliabilities of the National Cholesterol Education Program's Adult Treatment Panel III (NCEP/ATP III) and the International Diabetes Federation (IDF) definitions in diagnosing MetS among Gaza Strip Palestinians. **Materials and methods:** This cross sectional study involved a randomly selected two hundred and thirty apparently healthy adults from the Gaza Strip. Anthropometric measurements, blood pressure, fasting plasma glucose, lipid profile, and questionnaire interviews were performed.

**Results:** The overall prevalence of MetS in our Gaza Strip cohort was 23.0% and 39.5% according to NCEP/ATP III and IDF definitions respectively ( $p < 0.001$ ). No significant differences were seen in the number of MetS components in individuals having MetS by either definition (mean  $3.42 \pm 0.63$  vs  $3.52 \pm 0.69$  respectively,  $p = 0.865$ ). Both IDF and NCEP/ATP III showed an increased prevalence of MetS with age, and body mass index (BMI), however they revealed different prevalence trends with sex. Except for BMI, there were no significant differences in the general and metabolic related characteristics between subjects with MetS of IDF and NCEP/ATP III definitions.

**Conclusions:** Independently of the definition used, MetS is highly prevalent in Gaza Strip population, with a steady increase in MetS prevalence through age and BMI. The IDF definition tends to give higher values for MetS prevalence, and therefore could be more appropriate for diagnosing MetS in Gaza Strip cohort.

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## 1. Introduction

The metabolic syndrome (MetS) has been described as a cluster of multiple, partially or fully expressed, metabolic abnormalities within the single individual that increase the risk of developing cardiovascular disease and/or diabetes mellitus. The commonest metabolic abnormalities associated with MetS are: hypertension, dyslipidemia, obesity, and impaired glucose tolerance [1,2]. Realizing the MetS predictive risk factors and how these factors are distributed and interrelated within different cohorts are essential for identifying and targeting individuals at risk, thus giving a hand in the development and implementation of public health interventions [3].

The World Health Organization (WHO), in 1998 and 1999, was the earliest group that proposed the first diagnostic criteria for MetS, and these criteria have been used to identify individuals with MetS [4,5]. Afterward, many expert groups and related organizations modified the original WHO criteria and recommendations to fulfill the natural variations among populations, sex and age. However, the prognostic utility of MetS remains controversial because the different criteria and definitions provide differing results among different cohorts and settings [4–8]. Among these currently recommended diagnostic criteria for MetS, are the National Cholesterol Education Program's Adult Treatment Panel III (NCEP/ATP III) and the International Diabetes Federation (IDF) which are considered as the common definitions used to define MetS [6–8]. Both, NCEP/ATP III and IDF have been and still being tested for their trustworthiness and applicability in identifying individuals with MetS among different populations, age groups, sex, and other socio-demographic settings [9–19].

\* Corresponding author. Tel.: +970 599481194; fax: +970 82823180.

E-mail addresses: [msirdah@hotmail.com](mailto:msirdah@hotmail.com), [sirdah@alazhar.edu.ps](mailto:sirdah@alazhar.edu.ps) (M.M. Sirdah).