

# **Characterization and Prevalence of Metabolic Syndrome among Overweight and Obese young Palestinian Students at An-Najah National University**

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## **Abstract:**

### **Introduction:**

Metabolic Syndrome "MetS" is one of the main reasons for elevated mortality rates worldwide, and characterized by the presence of several factors including: obesity, dyslipidemia, elevated blood pressure, and elevated blood sugar. These factors play a major role in the development of cardiovascular diseases and diabetes mellitus. Several factors increase the risk for developing MetS such as: age, gender, and lifestyle.

### **Objectives:**

A university-based cross sectional study was used to characterize and establish gender adjusted prevalence of MetS among Palestinian adults at An-Najah National University "ANU" (18-24 years old), using International Diabetes Federation "IDF" and modified National Cholesterol Education Program-Third Adult Treatment Panel "NCEP-ATP III" definitions.

### **Materials and methods:**

The total number of research subjects was 850 (352 males and 498 females), aged 18-24. Data were collected in two stages: the first stage included anthropometric and blood pressure measurements for all study subjects. The second stage included self-administered questionnaire and biochemical analysis for overweight and obese students (n=154). MetS was defined according to the modified NCEP/ATP III diagnostic criteria and IDF criteria.

### **Results:**

The overall prevalence of MetS was more pronounced when IDF definition (28.6%) was implemented compared to the modified NCEP-ATP III definition (24%) among overweight and obese university students at An-Najah National University aged 18-24 years old with no statistical differences between males (29.2% IDF, 25.8% NCEP) and females (27.7% IDF, 21.5% NCEP). The prevalence of overweight and obesity has reached alarming rate among Palestinian adults aged 18-24 years. The prevalence of individual MetS components among overweight and obese adults were: 72.1%, for central obesity (53.9% males and 96.9% females) according to IDF and 42.9% (20.2% males and 73.8% females) according to modified NCEP-ATP III, 29.9% for elevated BPs (37.1% males and 20% females), 18.2% for high TG (27% males and 6.2% females), 74.7% for low HDL-Cholesterol (80.9 % males and 66.2% females), and 24% for IFG (24.7% males and 23.1% females). Low HDL- cholesterol, central obesity and raised blood pressure were the leading three common metabolic abnormalities

among overweight and obese adults. There were no significant associations with geographic locality, house hold income, smoking, physical activity, or family history.

**Conclusion:**

With the increase of BMI, the clustering of MetS components was remarkably increased. Therefore, more attention should be paid on the adult population at risk to reduce adulthood obesity and subsequent cardiovascular diseases. In conclusion, despite the lack of a uniform definition for MetS, this study has established that independently of the definition used, MetS is highly prevalent among Palestinian adults and associated with increasing obesity and age. The higher prevalence of MetS in Palestinian adults at ANU demands immediate intervention, given the potential for these adults to develop chronic diseases. More ethnic-specific studies are recommended in order to establish national-specific age and sex ranges for waist circumferences and other Mets risk factors.

**Keywords:** Metabolic syndrome; obesity and overweight; adults; West Bank.