

Official title:
**CHARACTERIZATION OF VIETNAMESE PATIENTS WITH OBESITY
AT OUTPATIENT CLINICS**

STUDY PROTOCOL

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Hypothesis

In the past three decades, obesity has emerged insurmountably, not only in affluent nations but also in many low- and middle-income countries worldwide. It has been linked to various non-communicable diseases, including hypertension, coronary heart disease, diabetes mellitus, dyslipidemia, stroke, colorectal cancer, and many other chronic conditions, such as musculoskeletal disorders, putting tremendous pressure on healthcare systems and the socio-economy.

The Asia and Pacific region harbors the highest absolute number of people with overweight and obese, amounting to approximately 1 billion. In Southeast Asia, the prevalence of overweight and obesity increased by almost 40% between 1990 and 2013. Although Vietnam has the lowest percentage of obese adults in the region (about 3.6%), we experienced a 38% increase in the number of obese people between 2010-2014, much higher than that in the United Kingdom and the United States (10% and 8% correspondingly). However, the problem is underestimated by not only healthcare professionals but also patients with obesity. These alarms underscore the necessity of implementing a comprehensive assessment and more focused and practical strategies for addressing obesity in Vietnam, where data has been limited. This research will be a foundation for further research on obesity in Vietnam and Southeast Asia.

Therefore, our research has two arms: (1) characterization of patients with obesity to identify those at the highest risks for obesity complications, and (2) understating the attitudes and perceptions of people living with obesity to gain insights into the psychological factors associated with obesity. This research will be a foundation for further research on obesity in Vietnam and Southeast Asia.

Objective

- (1) Characterization of patients with obesity to identify those at the highest risks for obesity complications
- (2) Understating the attitudes and perceptions of people living with obesity to gain insights into the psychological factors associated with obesity.

Study design

Study type: Observational

Methods

Recruitment

Morbidly obese subjects attending clinic at University Medical Center Ho Chi Minh City and My Duc General Hospital.

Inclusion criteria

- Men and women
- Above 18 years old
- Being obese (Body mass index - **BMI ≥ 25 kg/m² as per Asia-Pacific Guidelines for Obesity**)

Exclusion criteria

- Not meeting the inclusion criteria
- Pregnancy and post partum
- Inability to cooperate with height measurement.
- Inability to answer questionnaire.

Protocol

A structured questionnaire will be asked by well-trained research staff according to a face-to-face interview. Obtained information includes age, sex, occupation, relationship status, presenting chief complaint, past medical history, family history, current medication, weight loss history, and self-perception about obesity. Questions about weight loss history and self-perception about history are modified from the WALI questionnaire (Weight and Lifestyle Inventory questionnaire), a self-report assessment tool to evaluate factors related to obesity management. Participants will then be assessed for risk of depression using PHQ-9 (Patient Health Questionnaire-9). It is scored on a 27-point scale. Those with a PHQ-9 score less than five is considered at no risk of depression, and those with a PHQ-9 score equal to or more than 5 are at risk of depression.

Blood pressure measurement: All participants will have their blood pressure taken by a standardized sphygmomanometer.

Anthropometric measurements: Anthropometric parameters will be measured at baseline. Measurements include waist circumference, hip circumference, body weight, height, and BMI.

Waist and hip circumference are measured per WHO STEPwise Approach to Surveillance protocol (WHO STEPS, 2008b). Waist circumference is measured at the approximate midpoint between the lower margin of the last palpable rib and the top of the iliac crest. Hip circumference is measured around the widest portion of the buttocks.

Height and weight measurements will be taken using a professional medical HM200P Portable Height Stadiometer and a standardized weight scale (ISO 9001:2015), by professional and experienced physicians. BMI will be computed by the following equation: weight in kilograms divided by height in meters squared.

Bioelectrical impedance analysis (BIA): Electrical bioimpedance (Tanita MC-780 MA; Serial: 17050004) will be used to assess weight and body composition, including: fat mass, muscle mass, fat %, SMM, and visceral fat rating.

Biochemical measurements

Biochemical measurements will be performed at baseline, including plasma glucose, total cholesterol (TC), LDL-cholesterol (LDL-C), HDL-cholesterol (HDL-C), and triglycerides.

All participants will receive nutritional counseling at the end of the survey.

Statistical Analysis Plan:

All the data will be analyzed using STATA version 16.0 software. Parametric tests will be applied for quantitative variables with normal distributions and non-parametric tests for qualitative and quantitative variables with abnormal distributions. The results will be expressed as average \pm standard deviation. Use frequencies and percentages for descriptive statistics. The Chi-square test will be used to evaluate the levels of relevance for comparisons of risk factors and complications of severe obesity. Relevancy was measured by odds ratio (OR) and 95% confidence interval of OR. The statistical analysis to evaluate the gene-diet interaction was a univariate ANCOVA. For continuous variables, comparisons are made with the analytical univariate ANCOVA. A P- value of less than 0.05 was considered significant.