Supplementary Material

Methods

Data collection and outcomes definition. The standardized questionnaire applied in our study was translated to Portuguese by two of the researchers (RMC and MOP) with the authorization of the GLOW study investigators and The Center for Outcomes Research, University of Massachusetts of Medical School (1,2). It included information regarding the demographic characteristics of the population (age, education level, weight, and height), lifestyle (physical activity, alcohol, and tobacco use), previous fractures, family history of fractures, menopause, medications, and comorbidities (blood pressure, heart disease, stroke, and dyslipidemia). Medical students applied the questionnaire. All the information in this questionnaire was self-reported. Furthermore, the women were asked if their doctor ever told them that: 1) they had "high blood pressure or hypertension"; 2) they had "heart disease", such as 2.1) "angina, heart attack, or heart ischemia", and 2.2) "heart failure, big heart, or weak heart"; 3) they had "dyslipidemia or high cholesterol"; 4) they had "stroke, CVA, or cerebral ischemia"; and 5) they had "high blood sugar or diabetes." All data were recorded as a yes/no answer. A diagnosis was considered positive when the subject answered yes for any of these queries.

Height, weight, and waist circumference were measured in accordance with the World Health Organization recommendations (3). All scales used in the study were validated by the Brazilian National Institute of Metrology, Quality, and Technology (4). Weight was measured in kilograms and was recorded to one decimal place. Height was measured in meters with two decimal places. Waist circumference was measured in centimeters with one decimal place. BMI was calculated using the formula weight in kg divided by the square of height in meters. All blood samples were drawn at early morning with at least 8 h of fasting. The specimens were centrifuged at 2500 g for 15 min at 4°C. All samples were frozen at –80°C and analyzed at the same time. Blood pressure was measured in accordance with the guidelines of the Brazilian Society of Cardiology (5) a few minutes prior to blood collection. The practice of physical activity was quantified by the weekly frequency Baecke questionnaire (6).

All fractures included in the study were confirmed by X-ray or surgical reports. Major fractures were considered after 45 years in femur, humerus, clinical spine, or wrist (7).

The diagnosis of metabolic syndrome was adapted from the Brazilian Society of Endocrinology and Metabology. It was considered present when the subject had at least three of the following: 1) waist circumference greater than 88 cm; 2) self-reported diagnosis of hypertension, systolic blood pressure higher than 130 mmHg or diastolic blood pressure higher than 85 mmHg; 3) self-reported diagnosis of diabetes mellitus or fasting blood glucose level greater than 110 mg/dL; 4) triglyceride level greater than 150 mg/dL; and 5) self-reported dyslipidemia or HDL-cholesterol level lower than 50 mg/dL.

References