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Comparison between self-reported and measured anthropometric data of energy intake under-reporters: 2015 Healthy Survey of São Paulo

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Abstract

Introduction: Misreporting in adults has been associated with socioeconomic and anthropometric characteristics, such as sex, age and weight status. Body Mass Index (BMI) is an important factor that has been associated with underreporting of energy intake. Many epidemiological studies often use self-reported values of height and weight, in order to reduce the cost and viability of population-base studies. Therefore, it is important to test the reliability of self-reported against measured values of height, weight and BMI in individuals who tend to underestimate their energy consumption.

Objective: To compare self-reported and measured anthropometric data of individuals who are underreporting their energy intake.

Materials and Methods: The sample included forty-six men and women who participated on the Health Survey of São Paulo, Brazil and had their total energy expenditure (TEE) measured by the doubly labelled water technique. Self-reported data were obtained from questionnaires and trained professional conducted the measurements of height and weight. BMI was classified based on the World Health Organization cutoff points for adults and the Pan-American Health Organization for elderlies. Correlation analysis and paired *t test* was used to test the differences between both values. Energy intake (EI) was assessed using two 24-hours dietary recall. The ratio of EI:TEE was used to identify misreporting considering the 95% confidence intervals. Respondents were classified in under-reporters, plausible reporters and over-reporters.

Results: Twenty-six (57.8%) were classified as under-reporters, thirteen (28.9%) as plausible reporters, and six (13.3%) as over-reporters. Significant differences were found comparing measured vs. self-reported anthropometric values of under-reporters with height (1.60 m vs. 1.62 m, $p < 0.00$) and BMI (29.1kg/m^2 vs. 27.9kg/m^2, $p < 0.02$), but no significant differences for weight (74.6 kg vs. 75.7 kg, $p = 0.28$). Overweight and obesity were higher in under-reporters comparing self-reported (11.5% and 30.8%) and measured (15.4% and 46.2%) anthropometric values. Pearson correlation coefficient between measured and self-reported values was 0.95 ($p < 0.00$) for weight, 0.96 ($p < 0.00$) for height and 0.92 ($p < 0.00$) for BMI.

Discussion: Although results showed a strong and significant correlation between self-reported and measured anthropometric values in under-reporters, it is important to consider BMI and obesity are important factors related to underreporting. Therefore, it recommends to measure anthropometric data in studies that aim to characterize misreporting based on nutritional status, since the classification and prevalence of BMI and obesity can be affected by the chosen approach.

Conflict of Interest

There is no conflict of interest.