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Measured vs. Self-Report Height, Weight and BMI: Relationships with Health Outcomes and Behaviors

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Researchers, policy makers, and clinicians commonly use height and weight to determine BMI and classify weight status. Self-report measures are utilized in a considerable portion of the scientific literature and national surveys, but often result in misreporting of height and weight, and consequentially underestimation of BMI and therefore potentially BMI category (weight status) misclassification. **PURPOSE:** To examine differences in self-reported and measured height, weight and BMI values, and whether discordance is associated with other anthropometric measures, fitness levels, and physical activity (PA) and sedentary behaviors (SB). **METHODS:** Data were collected from college students via: (1) a pre-consultation online questionnaire where participants self-reported sex, height, and weight; (2) an objective fitness assessment that assessed height, weight, body fat percentage, abdominal girth, predicted aerobic fitness, and muscular endurance; and, (3) a post-assessment electronic survey that assessed PA and SB. Parametric and non-parametric analyses was used to examine differences between groups. **RESULTS:** Self-report and measured height and weight data were collected from 1,061 participants, 224 of whom also provided PA and SB data. Women significantly under-reported weight ($p = .003$, $\eta^2 = .02$), and both sexes over-reported height ($p < .001$, $\eta^2 \geq .07$), resulting in a significant difference between BMIs calculated using self-reported and measured values ($p < .001$, $\eta^2 \geq .07$) and misclassification of BMI category of ~15% of both sexes. Minimal differences were found in anthropometric, fitness, or PA between those who over and underreported their height, but significant differences were found based on reporting differences for weight ($p \leq .015$) and BMI ($p \leq .015$). **CONCLUSION:** Students were found to have a tendency to underreport weight and overreport height, resulting in BMI category misclassification. Findings suggest that those who underreport weight tend to be in poorer health, as indicated by lower aerobic fitness in and higher abdominal girth and body fat percentage in particular. With respect to PA, overreporters tended to report lower PA levels than under and accurate reporters. Further research is required to establish the link between underreporting weight and overreporting PA.