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Examining the accuracy of self-reported height, weight and BMI in a diverse sample of emerging adult college students

Introduction: Self-reported height and weight are convenient and affordable alternatives for anthropometric measurements, but their accuracy is contested. This study expands the discussion on the validity of self-report as a proxy for official measurements by examining the accuracy of a diverse population of emerging adults across sociodemographic characteristics.

Methods: 348 racially/ethnically diverse emerging adult college students aged 18 to 24 completed a survey, where they self-reported height and weight, and an in-person health visit where height and weight were measured by a trained research assistant.

Results: In comparison to anthropometric measurements, participants, on average, overreported their height by 2.02 cm and underreported their weight by 0.55 kg, which led to the calculated BMI being 0.79 kg/m^2 underestimated. Men overreported their height, on average, more than women and transgender and gender diverse participants to a statistically significant extent (1.11 cm and 1.32 cm more, respectively). LGBQ+ participants overreported their height less than heterosexual participants ($P = 0.04$), Hispanic/Latine participants had a less accurate BMI from their self-reported measurements than white participants ($P = 0.02$), and obese and overweight participants underreported their weight more than normal weight participants ($P < 0.01$). Additionally, seventeen percent of participants were assigned to a different BMI category based on their self-reported height and weight versus their category from anthropometrically measured height and weight.

Conclusions: Results showed inaccuracy in self-reported height and weight, although the magnitude of the inaccuracies were relatively small. There were some differences by sociodemographic group (e.g., gender, sexual orientation, race/ethnicity) in extent of misreporting.