Collection of body mass index from on-line surveys vs. face-to-face interviews
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ABSTRACT

Background
Conducting health surveys via social media is a recent development in health research. Although this method allows for rapid, inexpensive data collection from diverse populations, it is unclear if the responses obtained are comparable to those obtained from other survey methods.

Objective
We compared the body mass indexes (BMIs) calculated from heights and weights reported from the GeoMed survey to that obtained from a national sample of values during face-to-face interviews.

Methods
The GeoMed survey participants were recruited between February 2014 to February 2015 on social media platforms including Facebook, LinkedIn, Craig’s List, Reddit, Twitter, YouTube, as well as through personal contacts and referrals. Various characteristics were reported including age, gender, education, race, height and weight. The National Health and Nutrition Examination Survey (NHANES) was conducted through face-to-face interviews with a representative sample of the non-institutionalized population. Using results from 2005 through 2012, the same six variables were reported. Subjects were labelled as obese with a BMI > 30 kg/m². We used linear regressions to compare the mean BMI and logistic regressions to compare the proportion of obese subjects in each survey, correcting for the effects of demographic differences.

Results
Among 3,674 completed GeoMed surveys, the average BMI was 26.3 kg/m²; 20.3% were obese. Among 24,760 complete NHANES surveys, the average BMI was 27.8 kg/m²; 30.3% were obese. The differences in BMI (-1.5 kg/m²; 95% CI -1.7, -1.3; P<0.001) and obesity (Odds ratio:0.59; CI: 0.54, 0.64; P<0.001) were highly significant. However, adjusting for age, gender, race and education between the two groups, the difference in BMI was insignificant (+0.09 kg/m²; CI :-0.16, +0.34; P=0.49). The multivariate logistic regression showed a nonsignificant odds ratio for obesity of 0.95 (CI:0.86, 1.05; P=0.35).

Conclusion
Although online surveys may not represent a generalizable respondent sample, their responses are similar to face-to-face surveys.