Excess mortality estimates may be too high

Katherine M. Flegal

Stanford University School of Medicine, Prevention Research Center, 1265 Welch Rd, Palo Alto, CA 94305, United States

eClinicalMedicine 2022;50: 101520
Published online xxx
https://doi.org/10.1016/j.eclinm.2022.101520

For a modeling study of excess mortality associated with higher body weight in the USA, Ward et al[1] used direct standardisation to measured body-mass index (BMI) as adjustment for bias in "self-reported" BMI (calculated from self-reported weight and height). This method does not reduce systematic error in self-reported BMI and changes neither the overall misclassification rate nor the variance of the differences between self-reported and measured BMI.[2] It can overestimate the prevalence of the highest BMI category. These adjusted BMI values are not necessarily correct at the individual or state level.

Ward et al combined their adjusted BMI values with hazard ratios (HRs) from a global pooling dataset.[3] Most data came from outside the USA, and most used self-reported BMI. The HRs for North American data with measured BMI were lower than the overall HRs (3, eTable 22). As two senior authors of the pooling paper were also co-authors in the Ward et al paper, it is expected that values by finer BMI categories would have been available to these authors to use in the Ward et al study. The two co-authors should have had complete access to extensive information about the voluminous results from the pooling paper. The HRs from this subgroup would have been more appropriate for the Ward et al analyses.

The analytic approaches used by Ward et al can overstate both the prevalence of high BMI and the HRs associated with high BMI. Their estimates of weight-associated excess mortality are considerably higher than the estimates from other studies in the USA and elsewhere.[4] The Ward et al estimates of excess mortality, both overall and by state and demographic subgroups, may be overestimates.

Declaration of interests

I declare no competing interests.

References

1 Ward ZJ, Willett WC, Hu FB, Pacheco LS, Long MW, Gortmaker SL. Excess mortality associated with elevated body weight in the USA by state and demographic subgroup: a modelling study. *EClinicalMedicine*. 2022;48:101429.
2 Flegal KM, Graubard BI, Ioannidis JPA. Evaluation of a suggested novel method to adjust BMI calculated from self-reported weight and height for measurement error. *Obesity (Silver Spring)*. 2021;29(10):1700–1707.
3 Global BMI Mortality Collaboration. Body-mass index and all-cause mortality: individual-participant-data meta-analysis of 239 prospective studies in four continents. *Lancet*. 2016;388(10046):776–786.
4 Flegal KM, Panagiotou OA, Graubard BI. Estimating population attributable fractions to quantify the health burden of obesity. *Ann Epidemiol*. 2015;25(3):201–207.

E-mail address: kmflegal@stanford.edu