Letters to the Editor

RE: “BODY MASS AND WEIGHT CHANGE IN ADULTS IN RELATION TO MORTALITY RISK”

In a recent article, Adams et al. (1) examined associations between adult weight history and mortality in the National Institutes of Health-AARP Diet and Health Study. Understanding the impact of long-term obesity on morbidity and mortality is an important medical and public health priority given the longer average exposure to obesity faced by cohorts who have come of age during the obesity epidemic (2). The analysis of Adams et al. that most directly tests the association of long-term exposure to higher body mass index (BMI; weight (kg)/height (m)\(^2\)) is shown in their Table 6 (1, p. 142), where the mortality risk of persons attaining a BMI of 25 or more at age 18, 35, or 50 years is compared with that of persons who maintained a BMI under 25 at all ages. Table 6 shows hazard ratios that were more elevated the earlier a person crossed this threshold (for example, males who became overweight at age 18 years had a hazard ratio of 1.68, as compared with a hazard ratio of 1.12 for males who became overweight at age 50 years). Adams et al. interpreted this pattern to mean that carrying excess weight for a longer period of time is detrimental for mortality risk (1).

Though this is a seemingly obvious correlation, we recently documented (using 1999–2010 data from the National Health and Nutrition Examination Survey (NHANES)) that persons who were overweight or obese by age 25 years are much more likely to be severely obese later in their lives than those who had a normal weight at age 25 years (3). In other words, persons who were overweight or obese in early adulthood had a much higher BMI, on average, than those who became obese later. Since the severity of current attained obesity is likely to be important for morbidity and mortality, we wondered how the results in Table 6 might change if they were adjusted for this omitted confounder of current BMI. We found this adjustment to be critical in correctly interpreting the association of long-term obesity with biomarkers of cardiovascular and metabolic risk in the NHANES data, such that strong associations between obesity at age 25 years and biological risk in later adulthood were largely eliminated after adjustment for the severity of current obesity. This omitted confounder would probably also have an impact on the results found in Adams et al.’s Table 3 (1, p. 139). On the basis of Table 3, Adams et al. stated that “associations with mortality risks” were strongest for BMI at age 18 years” as compared with ages 35 and 50 years (1, p. 137). Since persons who were in the 25.0–27.4 BMI category at age 18 years would probably have the highest level of current BMI as compared with those falling into that category later in life, this result may be reflecting an association of current severity of obesity with mortality rather than an impact of being overweight at age 18 years per se.

Going forward, it will be important for researchers to try to disentangle the health impacts of long-term obesity from those of current level of obesity in order to forecast the consequences of the obesity epidemic for US life expectancy and health-care costs. Regardless of whether early BMI is associated with mortality via long-term exposure to obesity or via more severe later obesity, the overall public health focus on entering adulthood with a normal BMI and maintaining a healthy BMI throughout adulthood remains the same.

ACKNOWLEDGMENTS

Conflict of interest: none declared.

REFERENCES


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DOI: 10.1093/aje/kwu099; Advance Access publication: April 30, 2014