Association between state school nutrition laws and subsequent child obesity

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ABSTRACT: Many states have enacted laws to improve school nutrition. We tested whether stronger state nutrition laws are associated with subsequently decreased obesity. We conducted a retrospective national multi-year panel data study (analyzed 2014–2016 at the Children's Hospital of Philadelphia). The predictors were 2010 laws regarding 9 nutrition categories from the Classification of Laws Associated with School Students, which grades the strength of state laws (none, weak, or strong). The outcome was weight status (healthy weight, overweight, or obese) in elementary, middle, and high school from the 2011/2012 National Survey of Children's Health. We tested the association between the strength of laws and weight using multinomial logistic regression. To further evaluate our main results, we conducted state-level longitudinal analyses testing the association between competitive food and beverage laws on the change in obesity from 2003–2011. In main analyses of 40,177 children ages 10–17 years, we found strong state laws restricting the sale of competitive food and beverages in elementary school (OR: 0.68; 95% CI: 0.48, 0.96) and strong advertising laws across all grades (OR: 0.63; 95% CI: 0.46, 0.86) were associated with reduced odds of obesity. In longitudinal analyses, states with strong competitive food and beverage laws from 2003–2010 had small but significant decreases in obesity, compared to states with no laws. Although further research is needed to determine the causal effect of these laws, this study suggests that strong state laws limiting the sale and advertising of unhealthy foods and beverages in schools are associated with decreased obesity rates.

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