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RESEARCH ARTICLE

State-mandated school-based BMI assessments and self-reported adolescent health behaviors

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Abstract

I provide novel evidence on the role of imperfect information in shaping childhood obesity. Between 2003 and 2017, 24 states began requiring schools to perform Body Mass Index assessments on students. Using the 1991 to 2017 National and State Youth Risk Behavior Surveys and a stacked difference-in-differences identification strategy, I show that these state-mandated school-based BMI assessments were associated with an increase in the likelihood that teens described themselves as overweight and reported that they were trying to lose weight. The relationship was most pronounced for overweight teens, suggesting that the assessments improved awareness about BMI status among this group, though I also find that non-overweight teen girls were subsequently more likely to incorrectly describe themselves as overweight. While I do not detect meaningful changes in exercise or calorie-limiting behaviors, I do find that these state-mandated school-based BMI assessments were associated with a modest reduction in BMI.

INTRODUCTION

Over the last two decades, state and local policymakers have experimented with a myriad of policies intended to combat rising rates of childhood obesity, including taxing energy-dense food, subsidizing healthy food and physical activity, and informing adolescents about their obesity status. Though there is considerable work on policies intended to internalize the external costs of obesity, little is known about the role of imperfect information—and the laws intended to correct it—in childhood obesity.[1] Moreover, while recent scholarship has yielded mixed evidence as to the efficacy of many anti-obesity policies (Carpenter & Tello-Trillo, 2015; Cawley et al., 2013; Cawley & Price, 2013; Sabia et al., 2017), less attention has been paid to the possible negative consequences associated with these laws. Yet mental health advocates have repeatedly expressed concerns that youth-targeted anti-obesity laws

[1] For example, see Cawley et al. (2019) for evidence on how children are affected by sugar-sweetened beverage taxes; see Bhattacharya et al. (2006) regarding the school breakfast program; and see Cawley et al. (2007), Cawley et al. (2013), and Sabia et al. (2017) regarding subsidized activity in the form of physical education classes.

could unintentionally increase the incidence of body dysmorphic disorder and result in the onset of eating disorders (Sliwa et al., 2019; Wallace, 2016), and a recent U.S. Surgeon General's report emphasized that adolescents, especially adolescent girls, are in the middle of a mental health crisis (Office of the Surgeon General, 2021).[2]

In this paper, I provide the first national quasi-experimental evidence on the relationships between mandated school-based Body Mass Index (BMI) assessments, self-image, and weight-related health behaviors.[3] In 2003, Arkansas began requiring all public-school students to have their heights and weights measured to determine if they were overweight or obese. By 2016, 24 states had similar laws, even though BMI assessments do not meet the American Academy of Pediatrics guidelines for routine health screening (Nihiser et al., 2007). These assessments sometimes occur in front of other children (Peacock, 2004), and while some states mail the results home to parents, others—such as New York—distribute "fitness report cards" directly to students (Kantor, 2007; Tacopino et al., 2014; Wallace, 2016). There is evidence that school-based BMI assessments are associated with parents placing their children on diets and making negative weight-related comments (Chomitz et al., 2003; Grimmett et al., 2008; Kaczmarski et al., 2011; Portilla, 2011), as well as more frequent weight-related discussions among students at school (Madsen et al., 2021). Although well-executed, these prior studies often lacked a clear comparison group, focused on short-run outcomes in a single state or school district, and were unable to test whether these policies achieved their goal of informing overweight and obese students about their BMI status.

Using the 1991 to 2017 State and National Youth Risk Behavior Surveys and a stacked difference-in-differences identification strategy leveraging 24 state policy changes, I test how mandated school-based BMI assessments were related to a range of weight-related behaviors and outcomes. This setup allows me to exploit nationwide variation, reducing the likelihood—compared to evaluations of individual state policies—that my results are confounded by other state-specific policy changes affecting weight-related behaviors occurring concurrent with the school-based BMI assessments. Moreover, by studying policy variation from a politically and geographically diverse group of states—including states from each Census region—the resulting estimates are arguably more generalizable to the U.S. than those based on single-state evaluations in Massachusetts (Chomitz et al., 2003) or California (Madsen et al., 2021).[4]

I find that state-mandated school-based BMI assessments were associated with a decrease in the likelihood that overweight and obese teens described themselves as "normal" weight and an increase in the likelihood that they described themselves as "overweight" or "obese." This offers some of the first evidence that these assessments were successful in their goal of informing overweight and obese teens who would otherwise have been unaware of their BMI status, though I cannot say if this increased awareness was due to children or parents reviewing the BMI reports or changes in social pressure resulting from the assessments; indeed, I cannot directly test whether teens had received a school-based BMI assessment. However, consistent with a large interdisciplinary literature showing that the relationships between social comparisons, body dissatisfaction, and weight-related health behaviors are more pronounced for adolescent girls than adolescent boys (Bibiloni et al., 2013; Hargreaves & Tiggemann, 2004; Myers & Crowther, 2009; Rapee et al., 2019; Valois et al., 2019), I also find evidence that these mandated BMI assessments were associated with an increase in the likelihood

[2] Claire Mysko, chief executive officer for the National Eating Disorders Association, stated, "So if someone is vulnerable and in a vulnerable place (and is) being weighed at school or being measured in whatever way … these are things that can be very triggering for those who are at risk" (quoted in Wallace, 2016). Sliwa et al. (2019) found that most schools had not adopted safeguards related to school-based BMI assessments which could "potentially incur unintended consequences."

[3] Some states allow for more general weight-related screenings not directly tied to BMIs. For exposition, I collectively refer to these mandated weight-related policies as BMI assessments.

[4] Appendix Figure A1 shows that school BMI assessments are mandated by both traditionally liberal (California and Massachusetts) and conservative (Mississippi and Oklahoma) states, as well as in both large (Texas and Florida) and small (Delaware and Rhode Island) states. Appendix Table A1 lists the states and treatment years. All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.

that non-overweight teen girls incorrectly described themselves as overweight. While I document a relationship between the mandated BMI assessments and the likelihood that teens reported trying to lose weight, I do not detect changes in specific weight loss strategies, such as exercise. Finally, I find evidence of a modest negative relationship between the mandated BMI assessments and BMI for both teen girls and teen boys.

By showing that the state-mandated school-based BMI assessments were associated with an increase in the likelihood that overweight and obese teens correctly described their body types, this paper adds to broader literatures exploring the role of imperfect information—and the laws intended to address this market failure—in shaping health behaviors and outcomes (Bollinger et al., 2011; Fichera & von Hinke, 2020; Kenkel, 1991; Rousu et al., 2014; Wisdom et al., 2010) and education decisions (Andrabi et al., 2017; Bergman, 2021; Dizon-Ross, 2019). Yet I only detect modest changes in BMI, adding to a growing literature on the limitations of policies aimed at reducing childhood obesity, such as sugar-sweetened beverage taxes (Cawley et al., 2019; Fletcher et al., 2010) and increasing physical education instruction in schools (Cawley et al., 2007, 2013; Sabia et al., 2017). Finally, by studying how public policies emphasizing the use of clinical thresholds can alter self-perception and shape weight-related intentions in adolescents, this paper adds to medical, psychology, and public health literatures that have largely focused on correlations between peer comparisons, self-image, and weight-related behaviors (for example, see Leahey et al., 2011, and Stice & Shaw, 2002). Notably, recent quasi-experimental work leveraging plausibly exogeneous variation in cohort bodyweight has found that teens with thinner peers perceive themselves as heavier than they are (Arduini et al., 2019) and experience greater behavioral problems (Huang et al., 2020). Conversely, teens and adults with heavier peers are more likely to gain weight (Luo & Pan, 2020) and less likely to be anorexic (Costa-Font & Jofre-Benet, 2013).

POLICY BACKGROUND AND LITERATURE

Body Mass Index (BMI) is computed by dividing body mass in kilograms by body height in meters squared (Division of Nutrition, Physical Activity, and Obesity [DNPAO], 2021). Developed in the 19th century to define the "average man" (Cryle & Stephens, 2017), the ratio—then called Quetelet's Index—was based entirely on a sample of White Belgian men. Notably, the calculation of BMI does not vary based on race/ethnicity, muscle density, or bone density, and scholars are increasingly interested in the racial underpinnings of BMI and obesity categorizations (Justin & Jette, 2021; Morales et al., 2019; Reece, 2018; Robinson, 2019; Sanders, 2017). In the U.S., the CDC sets thresholds for being "underweight," "healthy weight," "overweight," and "obese" based on BMI. For adults, these thresholds are the same regardless of sex or age; any adult with a BMI between 18.5 and 24.9 is within the "healthy" range. In contrast, for adolescents, BMI thresholds are determined by age- and sex-specific percentiles. A child with a BMI below the 5th percentile is classified as underweight, between the 5th and the 85th percentile as healthy weight, between the 85th and 95th percentile as overweight, and at or above the 95th percentile as obese (DNPAO, 2021). A 10-year-old boy with a BMI of 19 would be at the 83rd percentile and considered healthy weight, while an 8-year-old boy with that same BMI is at the 89th percentile and classified as overweight. As such, BMI has been labeled a "poor predictor" of excessive fat content in children (Vanderwall et al., 2017).

In 2003, the American Academy of Pediatrics (AAP) published a policy statement recommending periodic BMI assessments as an important tool for combating childhood obesity (American Academy of Pediatrics). While AAP did not recommend annual school-based screenings, during the 2003/2004 academic year, Arkansas became the first state to require all public-school students undergo such assessments as part of a broader state effort to reduce childhood obesity. Advocates for BMI screenings argued that rising rates of childhood obesity had distorted parental perceptions of "what's normal and healthy" (Kantor, 2007), and one study found that over 70% of parents with overweight children misperceived their child's weight (Hernandez et al., 2010). Indeed, the Arkansas program seemed to increase obesity awareness—Dr. Karen Young at the Arkansas Children's Hospital reported that 13% of new participants at her fitness clinic came in response to their school BMI assessment—though the assessments were immediately controversial over concerns they would harm students' self-esteem (Associated Press, 2007).[5] In response to a 2005 Institute of Medicine request that the federal government provide guidance on school-based BMI assessments, a CDC expert panel concluded that these assessments did not meet AAP guidelines for routine health screening (Nihiser et al., 2007).

Figure 1(a) plots the share of states within each of the four Census regions requiring school-based BMI assessments using data compiled from policy databases, published articles, and primary analysis of legislative and administrative text.[6] These measures quickly gained popularity, especially in the South and Midwest. Notably, these two Census regions also had the highest childhood obesity rates (Figure 1b). By 2007, 14 states required that students receive BMI or weight-based assessments in school; in 2016, 24 states had such a requirement.

Despite the proliferation of these policies, existing work on school-based BMI assessments has largely focused on single state policies or school district-specific interventions which might not easily generalize to alternative policy environments. For example, Chomitz et al. (2003) found that parents in Cambridge, Massachusetts who were provided a personalized "fitness report cards" for their children were (i) more aware of their child's weight than those who did not receive a report and (ii) more likely to express an intention to put their child on a diet. Analyzing a large-scale randomized control trial of 28,000 California students in grades 3 through 8, Madsen et al. (2021) did not detect a relationship between receiving the results of a school-based BMI assessment and subsequent changes in BMI. However, the authors did detect a reduction in weight satisfaction and an increase in peer talk related to bodyweight among students who were weighed at school. Almond et al. (2016) found that New York City students classified as "overweight" on their BMI reports did not subsequently lose more weight than those just under the threshold.[7] In reviewing the literature on BMI assessments, Ruggieri and Bass (2015) concluded that the policies were important for correcting parental misperceptions about their children's weight. Yet Thompson and Madsen (2017) pointed out that the papers highlighted by Ruggieri and Bass did not actually find evidence that school-based BMI assessments reduced obesity, and Thompson and Madsen instead argued that these assessments could increase weight-related stigmatization. Most recently, Nicosia and Datar (2020) exploited the random assignment of military families to bases in states with and without mandated school-based BMI assessments using data on 1,087 children from the 2013–2014 Military Teenagers Environment Exercise and Nutrition Study. The authors detected a reduction in the odds of being overweight—but not in BMI percentile—among children in rural, but not urban, schools bound by a mandated BMI assessment.

While all well-executed, my study improves on these prior papers in several important ways. For one, results from a lone school district or state might not generalize to other states with different policy environments, demographic compositions, or preferences toward body types and weight loss. Moreover, these prior studies had relatively short post-periods, though it might take several years to detect changes in BMI. By leveraging 24 policy changes over a decade, my estimates provide arguably the most externally valid estimates of the relationships between school-based BMI assessments, self-perception, and weight loss behaviors. Additionally, the use of a multi-state setup reduces the likelihood—compared to a single state evaluation—that my results are confounded by another

[5] In 2007, Arkansas legislators amended the act to only assess students every other year between kindergarten and 10th grade (State of Arkansas, 86th General Assembly, Regular Session, Act 201 of 2007, HB 1173).

[6] These sources included the State Health Access Data Assistance Center database (SHADAC 2023), *The State of Obesity* reports compiled by Trust for America's Health and the Robert Wood Johnson Foundation, the *Shape of the Nation* reports the National Association for Sport and Physical Education, as well as Blondin et al. (2016), Isaacson (2014), Linchey and Madsen (2011), Nihiser et al. (2007), and Ruggieri and Bass (2015).

[7] Outside the U.S., Prina and Royer (2014) found that providing parents of elementary school children in Mexico with weight report cards increased (i) parental knowledge about their child's weight and (ii) the likelihood that parents of overweight and obese children reported that their child weighed too much. They did not detect any changes in weight-related behaviors or BMI, though outcomes were collected only 3 months after the assessment was distributed.

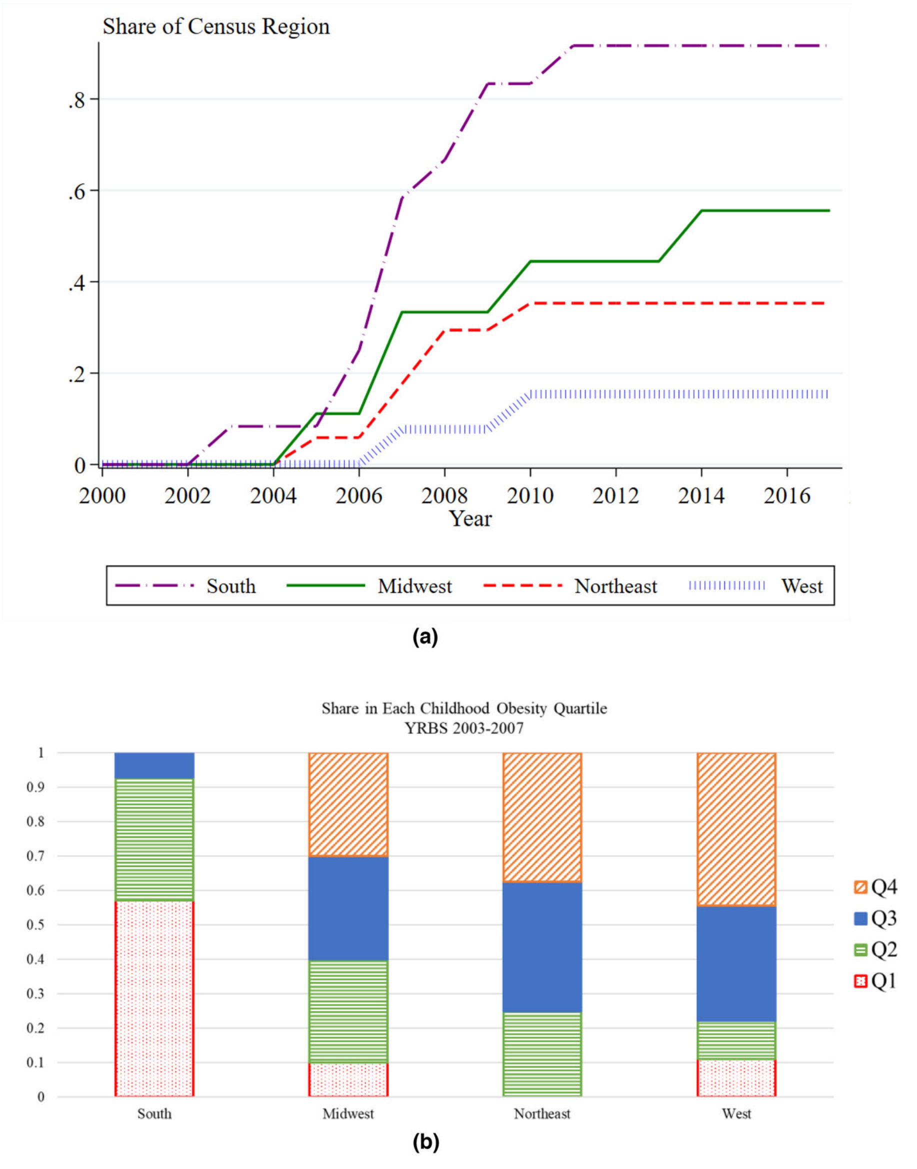


FIGURE 1 Number of states with mandated school-based BMI assessments.
[Color figure can be viewed at wileyonlinelibrary.com]

Notes: Panel (A) separately plots the share of states mandating school-based BMI assessments by Census region. The long dashed purple line indicates the South, the solid green line indicates the Midwest, the dashed red line indicates the Northeast, and the dotted blue line indicates the West. Panel (B) plots the share of each Census region in each childhood obesity quartile. The red polka dot area shows the share of each region in the top quartile, the green striped area in the second quartile, the solid blue region the third quartile, and the orange striped region the fourth quartile. For example, 57% of southern states were in the top quartile, 36% were in the second quartile, and 7% were in the third quartile.
Source: Youth Risk Behavior Surveys 2003 to 2007.

state-specific change or intervention affecting weight-related behaviors.[8] Finally, I consider a broader collection of health outcomes than has been previously explored in the literature, including changes

[8] For example, Arkansas's school-based BMI assessment requirement was adopted as part of a broader collection of measures aimed at reducing childhood obesity, so single state evaluations comparing changes in Arkansas to changes in other states over time cannot easily disentangle the effect of the BMI assessment from the effect of these other policies. This is less of a concern in my setting, unless every state requiring school-based BMI assessments simultaneously adopted similar groups of other anti-obesity policies. In my setting, only 50% of states adopting these

in self-perceived body type, weight loss intentions, specific weight loss activities, and BMI, allowing me to simultaneously analyze both the benefits and potential unintended consequences of mandated school-based BMI assessments.

DATA AND METHODOLOGY

Data: Youth Risk Behavior Surveys (YRBS)

I obtain information on teen weight-related health behaviors from the 1991 to 2017 National and State Youth Risk Behavior Surveys. The YRBS are school-based surveys of high school-age youths' risky and preventative health behaviors that are administered during the spring of odd numbered years. The National YRBS (NYRBS) are collected by the Centers for Disease Control and Prevention to monitor national trends, though these data have been widely used to evaluate state-level policies (Anderson et al., 2013; Atkins & Bradford, 2015; Carpenter & Cook, 2008; Coleman et al., 2013; Tauras et al., 2007). The NYRBS include data on approximately 14,000 students each year. In contrast, the State YRBS (SYRBS), administered by state health and education agencies, are designed to be representative at the state level. These data are not a subset of the NYRBS and include information on approximately 100,000 students each year. While the SYRBS are conducted with technical and financial assistance of the CDC, these agencies retain the rights to these data, though 44 states have allowed the CDC to harmonize their data into a publicly available combined state file.[9] To maximize the number of state-years covered in my sample, I follow the literature and augment the combined SYRBS with the NYRBS (Anderson & Elsea, 2015; Sabia & Anderson, 2016; Sabia et al., 2019). Appendix Table A2 presents the means of the key variables relating to whether states mandated school-based BMI assessments, weight-related behaviors, and BMI.

Empirical strategy: Difference-in-differences

Recent work has highlighted the potential pitfalls of including earlier treated units in the comparison group for later treated units (Borusyak et al., 2021; Callaway & Sant'Anna, 2021; de Chaisemartin & D'Haultfœuille, 2020; Goodman-Bacon, 2021; Sun & Abraham, 2021). As such, I explore how state-mandated school-based BMI assessments were related to teen weight-related health behaviors using the following stacked difference-in-differences specification (Deshpande & Li, 2019):

$$Y_{ikst} = \alpha + \beta \cdot \text{BMIAssessment}_{kst} + B'_{kst}\pi + X'_{ikst}\gamma + \theta_{ks} + \tau_{kt} + \varepsilon_{ikst} \tag{1}$$

where the dependent variable, Y_{ikst}, is the weight-related outcome for teen i in data stack k in state s during time t. The independent variable of interest, BMI Assessment$_{kst}$, is an indicator for whether the state required schools to perform a BMI assessment of students. To leverage the "clean" comparisons of changes in weight-related outcomes in treated states and the concurrent changes in never-treated states, the first stack is constructed by limiting the sample to states treated in 2003 and observations from never-treated states, the second stack by limiting the sample to states treated in 2005 and those from never-treated states, and so on. These stacks are then appended together.

Because some states adopted these requirements as part of a broader legislative package aimed at reducing childhood obesity, failing to account for these policies would likely overstate the effect

measures did so as part of broader childhood obesity initiatives. Throughout my analysis, I control for other policies which might have affected weight loss intentions, and I show that my results are robust to only using the policy changes that did not include other interventions.

[9] Not every state asks the same questions each year. Nor do individual states necessarily ask the same questions year-over-year. As such, the combined file includes data on the core questions that are directly comparable across states and over time.

of the BMI assessments.[10] To isolate these latter effects, the vector B_{kst} controls for whether the state concurrently increased the time spent on physical education, updated health-related instruction, or limited unhealthy foods in vending machines. The vector also includes an indicator for whether the state had standards for school meals exceeding United States Department of Agriculture requirements (Capogrossi & You, 2017; Cullen et al., 2008; Wojcicki & Heyman, 2006). I also control for state policies limiting fast-food companies' liability for weight-related harms, which have been linked to changes in weight-related behaviors (Carpenter & Tello-Trillo, 2015; Wilking & Daynard, 2013).

It is also possible that the adoption of required school-based BMI assessments was correlated with other state-level time-varying characteristics that could indirectly affect weight-related behaviors. For example, there is a well-documented relationship between youth smoking and childhood obesity (Cawley et al., 2004; Choudhury & Conway, 2020; Rees & Sabia, 2010), so the vector B_{kst} includes the natural log of the real value of cigarette taxes. Given the link between attitudes toward thinness and weight loss and indoor tanning bed use (Darlow et al., 2016), I also control for whether the teen was bound by a youth indoor tanning prohibition, required parental presence for indoor tanning, required paternal consent for indoor tanning, or was required to be provided a safe and clean tanning environment (Carpenter et al., 2023). To account for the relationship between local economic conditions and health, the vector B_{kst} also includes the state unemployment rate (Ruhm, 2000, 2015) and natural log of the real value of the minimum wage (Cotti & Tefft, 2013; Clark et al., 2020).

The vector X_{ikst} controls for individual-level characteristics that influence health behaviors, including indicators for the respondent's age (12 or less, 13, 14, 15, 16, 17 with 18 or older omitted), sex (male with female omitted), race/ethnicity (White, Black, Hispanic, Asian with "other" omitted), and grade level (9th, 10th, 11th with 12th omitted). The vector X_{ikst} also includes an indicator for whether the teen was part of the NYRBS or SYRBS. Finally, I include a vector of time-invariant state-by-stack fixed effects, θ_{ks}, to account for unchanging local attitudes toward health behaviors and body image and a vector of location-invariant year-by-stack fixed effects, τ_{kt}, to capture national changes in weight-related health behaviors. Standard errors are clustered at the state level (Bertrand et al., 2004).

The coefficient of interest, β, measures how state policies requiring school-based BMI assessments were associated with teen weight-related behaviors. In the presence of the covariates and fixed effects, the identifying assumption is that—in absence of the policy change—the behaviors of teens bound by these requirements would have evolved similarly to those of teens not required to receive a school-based BMI assessment. I test the validity of this assumption with the following event-study specification:

$$Y_{ikst} = \alpha + \sum_{\mathrm{j} = -6,\, \mathrm{j} \neq -1}^{2} \beta^{\mathrm{j}} \mathrm{I}^{\mathrm{j}} + \eta_{Pre} + \eta_{Post} + \mathrm{B}'_{kst}\pi + \mathrm{X}'_{ikst}\gamma + \theta_{ks} + \tau_{kt\,+}\varepsilon_{ikst} \tag{2}$$

where the independent variables of interest are now indicators for being j surveys away from a required school-based BMI assessment. The indicators η_{Pre} and η_{Post} capture observations drawn from surveys more than 6 waves before the policy and more than 3 waves after the policy, respectively.[11]

[10] Fifty percent of states mandating school-based BMI assessments did so as part of a broader package of policies aimed at combating childhood obesity. I show in the appendix that my baseline estimates on the effect of school-based BMI assessments are driven by states which did not adopt these more additional measures.

[11] My YRBS data were fielded in odd numbered years from 1991 to 2017, policies implemented in 2006 and 2007 are first captured in the 2007 surveys. Moreover, because the first policy change occurred in 2003, I can have at most six balanced pre-period estimates. The last policy change occurred in 2015, so I can estimate at most two balanced post-periods. Of course, states do not participate in the YRBS every year. As a result, the event study estimates will be driven both by any potential treatment effect and changes in which states contribute to identification. Subject to these caveats, I estimate six pre-period coefficients and three post-period coefficients.

TABLE 1 State-mandated school-based BMI assessments were associated with an increase in the likelihood that teens described themselves as overweight.

Outcome →	(1) Self-described overweight	(2) Self-described overweight	(3) Self-described overweight
BMI assessment	0.008**	0.011**	0.010**
	(0.004)	(0.004)	(0.004)
Mean	0.301	0.301	0.301
R^2	0.003	0.003	0.026
States	51	51	51
Unique observations	980,487	980,487	980,487
Sample	All teens	All teens	All teens
State and year FE?	Y	Y	Y
State-level controls?		Y	Y
Demographic controls?			Y

Source: National and State Youth Risk Behavior Surveys, 1991 to 2017.
Notes: The dependent variable is an indicator for whether the respondents described themselves as overweight. The independent variable of interest is an indicator for whether the student's state required school-based BMI assessments. Column 1 reports the coefficient from sparse specification including the independent variable of interest, time-invariant state-by-stack fixed effects, and state-invariant year-by-stack fixed effects. Column 2 includes the state-level time-varying economic and policy controls interacted with the data stack indicators. Column 3 further includes the individual-level demographic controls interacted with the data stack indicators. The estimates are unweighted. Standard errors, shown in parentheses, are clustered at the state level. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

RESULTS

Self-perception

Advocates for mandated school-based BMI assessments argued that these assessments inform otherwise unknowingly overweight teens—and these teens' parents—that they are classified as overweight (Bailey-Davis et al., 2017). If these teens were previously unaware of their BMI status, these assessments should increase the share describing themselves as overweight or obese. To test this possibility, the dependent variable in all columns of Table 1 is an indicator for whether the respondents described themselves as overweight or obese. Each coefficient is from a separate regression estimated using equation (1) that iteratively adds on righthand side covariates. Controlling for only state-by-stack and year-by-stack fixed effects, column 1 finds that mandated school-based BMI assessments were associated with a 0.8 percentage point increase in the likelihood that teens described themselves as overweight or obese. This relationship is practically unchanged after including the state-level time-varying economic and policy controls in column 2 or individual-level demographic characteristics in column 3. Both columns show that mandated school-based BMI assessments were associated with a by 1-percentage point increase in the likelihood that teens described themselves as overweight, or 3.3 percent relative to the sample mean.

A large interdisciplinary literature has found that the relationships between social comparisons, body dissatisfaction, and weight-related health behaviors are more pronounced for adolescent girls than adolescent boys (Bibiloni et al., 2013; Hargreaves & Tiggemann, 2004; Myers & Crowther, 2009; Rapee et al., 2019; Valois et al., 2019).[12] Building on this work, Table 2 tests whether the relationship between mandated school-based BMI assessments and self-image varied by sex. The dependent

[12] While Black and Hispanic children are more likely to be classified as overweight or obese (Ogden et al., 2008; Taveras et al., 2010), they report greater body satisfaction at higher BMIs (Allan et al., 1993; Fitzgibbon et al., 2000; Parker et al., 1995; Rucker & Cash, 1992; Smith et al., 2020).

TABLE 2 The relationship between state-mandated school-based BMI assessments and the likelihood that teens described themselves as overweight or obese was most pronounced for teen girls.

	(1)	(2)	(3)
Sample →	**All teens**	**Teen girls**	**Teen boys**
BMI assessment	0.010**	0.023***	−0.002
	(0.004)	(0.007)	(0.004)
Mean	0.301	0.361	0.238
R^2	0.026	0.009	0.007
States	51	51	51
Unique observations	980,487	503,521	477,966
State and year FE?	Y	Y	Y
State-level controls?	Y	Y	Y
Demographic controls?	Y	Y	Y

Source: National and State Youth Risk Behavior Surveys, 1991 to 2017.
Notes: The dependent variable is an indicator for whether the respondent described his or herself as overweight or obese. The independent variable of interest is an indicator for whether the student's state required school-based BMI assessments. Column 1 examines all teens, column 2 teen girls, and column 3 teen boys. All columns use the stacked difference-in-differences specification from equation (1). The estimates are unweighted. Standard errors, shown in parentheses, are clustered at the state level. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

variable is again an indicator for whether the teen described his or herself as overweight. Column 1 reprints the baseline estimate examining all teens. When limiting the sample to teen girls, column 2 finds that teen girls were 2.3 percentage points more likely to describe themselves as overweight following the adoption of a state-mandated school-based BMI assessments—a 6% increase relative to the sample mean.[13] Meanwhile, the estimate for teen boys in column 3 is smaller in magnitude, inconsistently signed, and statistically insignificant.[14]

In Figure 2, I explore the dynamic relationship between the state-mandated school-based BMI assessments and the likelihood that teen girls described themselves as overweight or obese. It is worth noting that because there was at times a phase-in period between when the laws were passed and when schools were required to begin conducting the assessments—and I do not know the precise interview date (or even month) in the YRBS data—students in some treated states may have begun receiving assessments in the years prior to the implementation dates that I have used throughout the text. This measurement error should make it more difficult to detect effects in the difference-in-differences specifications but could generate a pre-trend immediately prior to the policy change in the event studies. For example, some students measured at period *t-1* will in fact be treated, increasing the likelihood that these students described themselves as being overweight or obese compared to students measured at *t-2*. Indeed, while I do not find any evidence that girls in states

Because BMI was developed based on a sample of White Belgium men during the 19th century (Gerson, 2021; Gonzalez et al., 2017), some have argued the measure is, at best, of limited value to Black and Hispanic individuals (Guthman, 2012; Harrison, 2021; Justin & Jette, 2021; Morales et al., 2019; Reece, 2018; Robinson, 2019; Sanders, 2017). Appendix Table A3 indicates that mandated school-based BMI assessments were most salient for non-White teen girls.

[13] Appendix Table A4 shows that the relationship between state-mandated school-based BMI assessments and the likelihood that teen girls reported trying to lose weight did not vary by grade, while Appendix Table A5 shows that the relationship is robust to alternative controls for spatial heterogeneity (i.e., state-specific linear time trends, Census region-by-year fixed effects, and Census division-by-year fixed effects). Appendix Table A6 shows that the relationship was more pronounced for states which did not begin mandating the assessment as part of a broader package of reforms aimed at reducing childhood obesity.

[14] Appendix Table A7 shows that these patterns persists if I limit the sample to include only observations from the state representative YRBS (Panel A) or the nationally representative YRBS (Panel B). Meanwhile, Appendix Figure A2(a) shows that the estimated relationship for teen girls is robust to employing randomization inference (Buchmueller et al., 2011; Cunningham & Shah, 2018), and Appendix Figure A3 shows that it is robust to iteratively dropping each treated state, alleviating concerns that the relationship was driven by a bundle of policies adopted by a single state (Panel A).

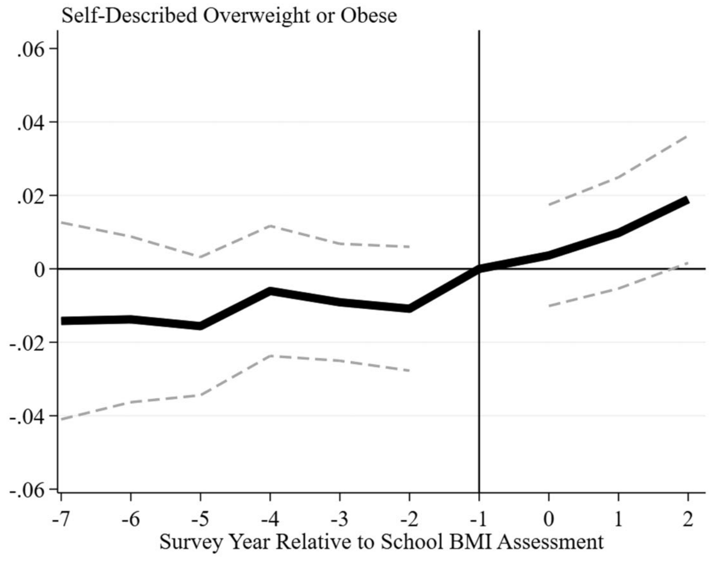


FIGURE 2 Event study estimates on state-mandated school-based BMI assessments and the likelihood that teen girls described themselves as overweight or obese.

Source: National and State Youth Risk Behavior Surveys 1991 to 2017.

Notes: The dependent variable is an indicator for whether the teen girl described herself as overweight or obese. The solid dark line plots the event study coefficients, and the lighter dashed lines plot the associated 95% confidence intervals. The values are estimated using the full set of controls from equation (2).

which eventually required BMI assessments were differentially more likely to describe themselves as overweight in periods *t-2* through *t-6*, there is some evidence of an increase between periods *t-2* and *t-1*. However, after states began requiring school-based BMI assessments, the probability that teen girls described themselves as overweight jumped by an additional 1 to 2 percentage points.[15]

Of course, the goal of these policies was not to increase the likelihood that all teens described themselves as overweight. Instead, they were intended to educate overweight or obese teens who would otherwise have been unaware of their BMI status. Figure 3 examines whether there is evidence that this occurred. The dependent variables (shown on the horizontal axes) are indicators for whether the teens described themselves as underweight, normal weight, or overweight or obese.[16] The black circle shows the estimates for all teens, the light grey triangle the estimates for teen girls, and the dark grey squares the estimates for teen boys. Figure 3(a) examines overweight or obese teens, while Figure 3(b) examines non-overweight or obese teens. It is possible that the school-based BMI assessments might have affected the probability that teens were classified as overweight, thereby changing the composition of the groups over time. For example, if these assessments led some previously overweight students to be more aware of their BMIs and lose weight until they were in the recommended region, then I might find that teens in the recommended region were more likely to describe themselves as "normal" weight. While this issue is not present for my headline estimates examining teens of all BMI statuses, out of an abundance of caution I interpret Figure 3 as highlighting an interesting association between the policies and self-image.[17]

[15] Appendix Figure A4 plots the traditional two-way fixed effects event studies. The relationship is more pronounced.

[16] I use the YRBS questionnaires' language regarding "normal" weight and the CDC's language regarding "healthy" weight (DNPAO, 2021).

[17] Appendix Figure A5 plots the event study estimates for each outcome by whether the teen was classified as overweight or obese.

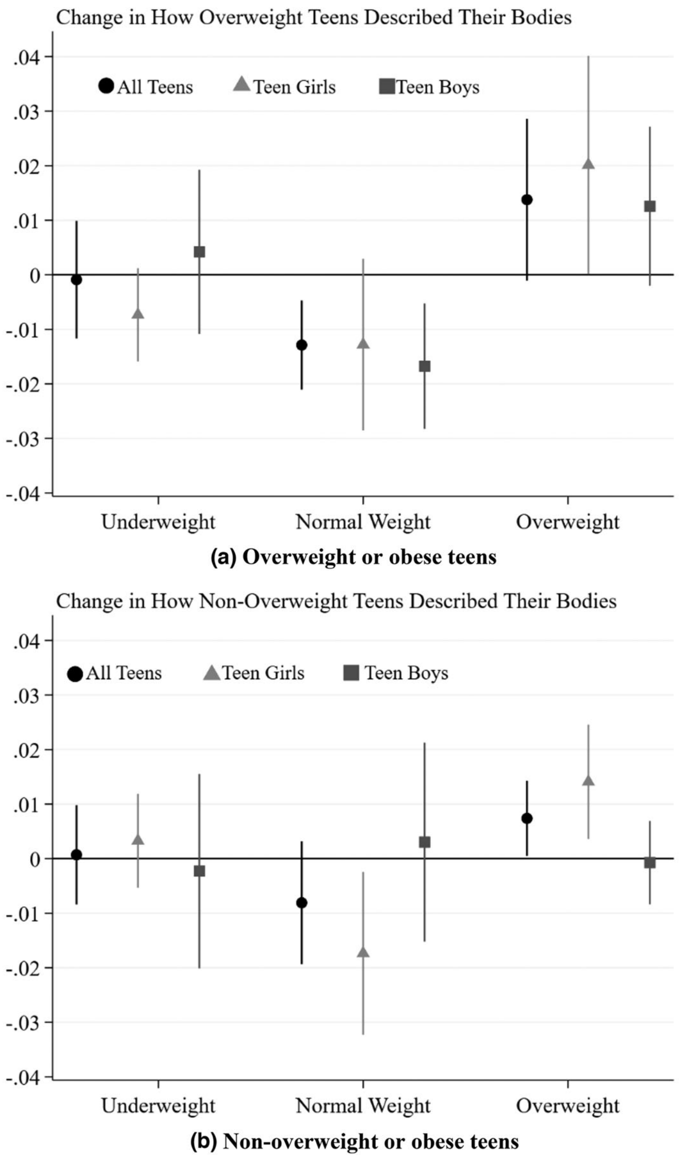


FIGURE 3 Relationships between state-mandated school-based BMI assessments and how teens described their bodies based on their BMIs.

Source: National and State Youth Risk Behavior Surveys 1991 to 2017.

Notes: The dependent variables are indicators for whether teens described themselves as underweight, 'normal' weight, or overweight or obese. The estimates are obtained using the full set of controls from equation (1). Panel (A) examines overweight or obese teens, while Panel (B) examines non-overweight or obese teens. The black circles indicate the estimates for all teens, the light grey triangles the estimates for teen girls, and the darker grey squares the estimates for teen boys. The corresponding bars plot the 95% confidence intervals. The estimates are unweighted, and standard errors are clustered at the state level.

Figure 3(a) indicates that state-mandated school-based BMI assessments were associated with an approximate 1 percentage point reduction in the likelihood that all overweight or obese teens described themselves as normal weight, a 3% change relative to the sample mean. Instead, these overweight or obese teens were more than 1 percentage point more likely to describe themselves

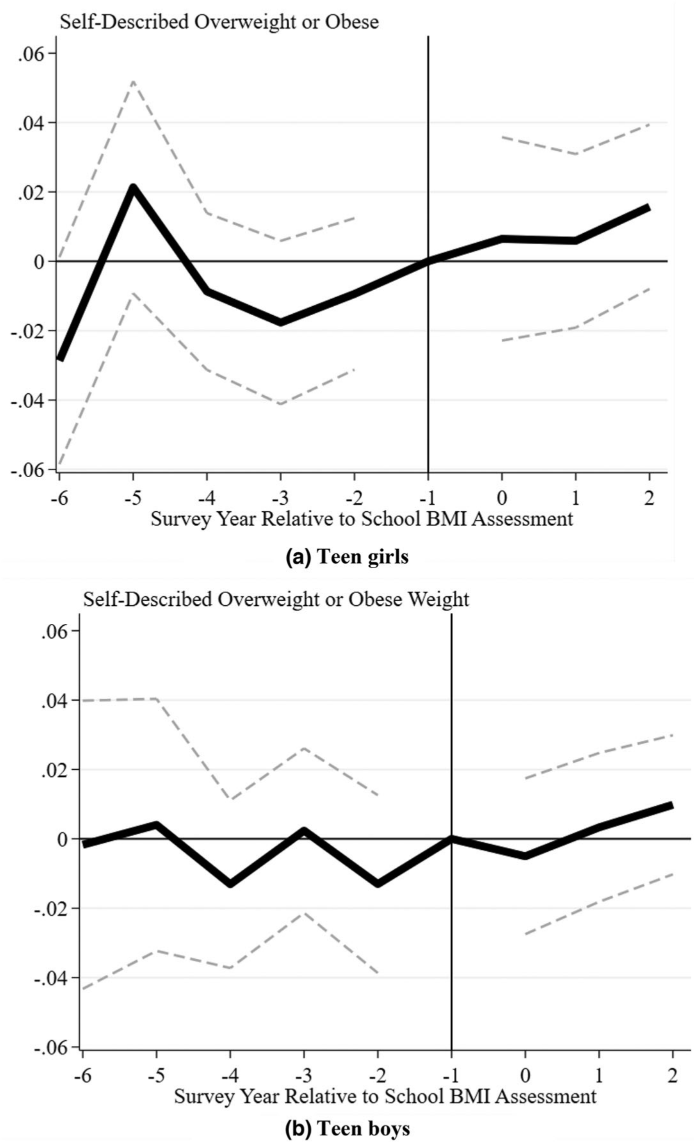


FIGURE 4 Event study estimates on state-mandated school-based BMI assessments and the likelihood that overweight or obese teens described themselves as overweight.

Source: National and State Youth Risk Behavior Surveys 1991 to 2017.
Notes: The dependent variable is an indicator for whether the teen described his or herself as overweight or obese. The solid dark line plots the event study coefficients, and the lighter dashed lines plot the associated 95% confidence intervals. The values are estimated using the full set of controls from equation (2). Panel (A) examines overweight or obese teen girls, while Panel (B) examines overweight or obese teen boys.

as overweight, a 1.5% increase relative to the sample mean. Notably, despite not finding any relationship when examining all teen boys, I find similar changes for overweight teen girls and overweight teen boys; both groups were less likely to describe themselves as normal weight and more likely to describe themselves as overweight. Panel B indicates that these policies were not associated with changes for non-overweight teen boys. However, there is evidence that these mandated BMI assessments were associated with a reduction in the likelihood that non-overweight teen girls described themselves as normal weight and an increase in the likelihood that they described

TABLE 3 State-mandated school-based BMI assessments were associated with an increase in the likelihood that overweight teens reported trying to lose weight.

Sample →	(1) All teens	(2) Teen girls	(3) Teen boys
Panel A: Main estimates			
BMI assessment	0.015***	0.022***	0.009
	(0.003)	(0.006)	(0.006)
Mean	0.450	0.592	0.300
R^2	0.102	0.007	0.013
States	51	51	51
Unique observations	886,237	455,167	431,070
Panel B: Variation by BMI			
BMI assessment	0.004	0.006	0.002
	(0.003)	(0.007)	(0.006)
BMI assessment ×	0.035***	0.043***	0.024***
Overweight or obese	(0.008)	(0.009)	(0.009)
Mean	0.453	0.592	0.306
R^2	0.218	0.097	0.202
States	51	51	51
Unique observations	737,988	379,079	358,909
State and year FE?	Y	Y	Y
State-level controls?	Y	Y	Y
Demographic controls?	Y	Y	Y

Source: National and State Youth Risk Behavior Surveys, 1991 to 2017.
Notes: The dependent variable is an indicator for whether the respondent described his or herself as overweight or obese. The independent variable of interest is an indicator for whether the student's state required school-based BMI assessments. Column 1 examines all teens, column 2 teen girls, and column 3 teen boys. Panel (A) uses the stacked difference-in-differences specification from equation (1). Panel (B) includes a control for whether the teen was overweight or obese and interacts this variable with the independent variable of interest from equation (1). The estimates are unweighted. Standard errors, shown in parentheses, are clustered at the state level. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

themselves as overweight. Collectively, Figure 3 offers empirical support for the notion that mandated school-based BMI assessments improved overweight and obese teens' knowledge about their BMI status (Associated Press, 2007; Bailey-Davis et al., 2017), and the event study estimates in Figure 4 indicate that these increases were limited to the periods after the adoption of the policies. However, Figure 3 also offers evidence that non-overweight teen girls were more likely to incorrectly describe themselves as overweight after the state began requiring school-based BMI assessments.

Weight loss intentions, strategies, and outcomes

The prior exhibits have found that state-mandated school-based BMI assessments were associated with an increased likelihood that teens—particularly teen girls—described themselves as overweight. I now explore whether these BMI assessments were associated with weight-related behavioral changes.[18]

[18] I also explored whether mandated school-based BMI assessments affected other mental health-related outcomes, such as suicide ideation. The results were inconclusive but are reported in Appendix Table A8 for completeness.

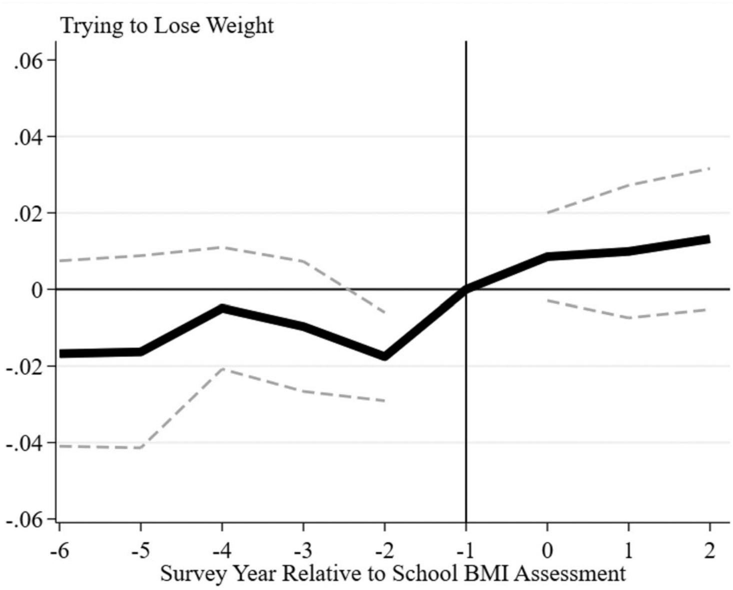


FIGURE 5 Event study estimates on state-mandated school-based BMI assessments and the likelihood that teen girls reported trying to lose weight.

Source: National and State Youth Risk Behavior Surveys 1991 to 2017.

Notes: The dependent variable is an indicator for whether the teen girl reported that she was trying to lose weight. The solid dark line plots the event study coefficients, and the lighter dashed lines plot the associated 95% confidence intervals. The values are estimated using the full set of controls from equation (2).

The dependent variable in Table 3 is an indicator for whether the teen reported trying to lose weight. Panel A examines the baseline relationship using the stacked difference-in-differences specification from equation (1), while Panel B allows for the relationship to vary by BMI status. Column 1 shows that mandated school-based BMI assessments were associated with a 1.5 percentage point increase in the likelihood that all teens reported trying to lose weight, over a 3% increase relative to the sample mean. Consistent with the prior evidence on self-image, column 2 shows that this relationship was driven by teen girls who were 2.2 percentage points more likely to report trying to lose weight—nearly a 4% increase relative to the sample mean. Meanwhile, the point estimate for teen boys in column 3 is 60% smaller in magnitude and statistically insignificant.[19] Figure 5 shows no evidence that teen girls in states which eventually mandated school-based BMI assessments were differentially more likely to report trying to lose weight during the pre-period. However, after the state began requiring school-based BMI assessments, this probability increased by approximately 2 percentage points.

Next, Table 4 explores whether mandated school-based BMI assessments were associated with changes in calorie-expending or calorie-limiting behaviors. The dependent variable in column 1 is the number of days that the teen reported being active for at least 60 minutes during the prior week, and the dependent variable in column 2 is an indicator for whether the teen reported exercising to lose weight during the prior 30 days. The dependent variable in column 3 is an index ranging from 0 to 4 constructed by adding the number of risky calorie-limiting activities, including dieting, fasting, consuming diet pills, and vomiting/using laxatives.[20] Columns 1 and 3 use count data, so are estimated

[19] Appendix Table A9 again shows that these results are robust to separately considering the SYRBS and NYRBS data.

[20] A clinical report from the American Academy of Pediatrics states that adolescent dieting is "counterproductive" to weight-management and can predispose teens to eating disorders (Golden et al., 2016). Appendix Table A10 separately analyzes each behavior.

TABLE 4 State-mandated school-based BMI assessments were inconclusively related to weight loss strategies.

Outcome →	(1) Number of days active for ≥ 60 minutes	(2) Exercised to lose weight	(3) Number of risky weight loss strategies
Panel A: All teens			
BMI assessment	−0.027*	0.001	0.034
	(0.014)	(0.015)	(0.034)
Mean	3.740	0.503	0.638
R^2	–	0.091	–
States	50	48	45
Unique observations	607,697	136,502	83,341
Panel B: Teen girls			
BMI assessment	−0.030*	0.013	0.042
	(0.017)	(0.021)	(0.043)
Mean	3.282	0.576	0.836
R^2	–	0.073	–
States	50	48	45
Unique observations	313,540	69,655	42.723
Panel C: Teen boys			
BMI assessment	−0.024*	−0.004	0.022
	(0.013)	(0.014)	(0.066)
Mean	4.229	0.427	0.429
R^2	–	0.125	–
States	50	48	45
Unique observations	294,157	66,847	40,618
State YRBS?	Y	N	N
National YRBS?	Y	Y	Y
Years	2005–2017	1991–2009	1999–2009

Source: National and State Youth Risk Behavior Surveys, 1991 to 2017.
Notes: The dependent variable in column 1 is the number of days during the week that the respondent reported getting at least 60 minutes of physical activity (0 through 7). The dependent variable in column 2 is an indicator for whether the respondent reported that exercising to lose weight. The dependent variable in column 3 is an index taking on values 0–4 based on the number of risky weight loss behaviors employed to lose weight (dieting, fasting, using diet pills, taking laxatives/vomiting). Panel A examines all teens, Panel B examines teen girls, and Panel C examines teen boys. All columns report the stacked difference-in-differences estimate from equation (1). Columns 1 and 3 are estimated using a Poisson regression and column 2 ordinary least squares. Columns 2 and 3 only control for state-by-stack and year-by-stack fixed effects, given that the small number of observations prohibits interacting the full set of righthand side controls with the stack indicators. The estimates are unweighted. Standard errors, shown in parentheses, are clustered at the state level. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

via Poisson regression, while column 2 is estimated via ordinary least squares.[21] Panel A examines all teens, Panel B examines teen girls, and Panel C examines teen boys. Because not every question is available in both the SYRBS and the NYRBS, and availability also varies across years, I report the dataset and sample window at the bottom of the table. Table 4 provides no consistent evidence that

[21] Given the small number of NYRBS observations in columns 2 and 3 only include state-by-stack and year-by-stack fixed effects. A fully saturated model interacting stack with the full set of righthand side controls is collinear with treatment variable.

TABLE 5 State-mandated school-based BMI assessments were inconclusively related to alternative behaviors plausibly influenced by other state-level health policies.

	(1)	(2)	(3)
Outcome →	**Number of days in PE class**	**Tried smoking**	**Tried alcohol**
Panel A: All teens			
BMI assessment	−0.043	−0.020	−0.008
	(0.041)	(0.013)	(0.011)
Mean	2.026	0.507	0.703
R^2	–	0.117	0.081
States	51	51	51
Unique observations	985,462	880,540	781,540
Panel B: Teen girls			
BMI assessment	−0.018	−0.026	−0.004
	(0.047)	(0.016)	(0.012)
Mean	1.835	0.493	0.708
R^2	–	0.115	0.078
States	51	51	51
Unique observations	509,389	454,788	402,230
Panel C: Teen boys			
BMI assessment	−0.058	−0.014	−0.012
	(0.038)	(0.012)	(0.011)
Mean	2.230	0.521	0.698
R^2	–	0.120	0.085
States	51	51	51
Unique observations	476,073	425,752	379,310
State YRBS?	N	Y	Y
National YRBS?	Y	Y	Y
Years	1991–2017	1991–2017	1991–2017

Source: National and State Youth Risk Behavior Surveys, 1991 to 2017.
Notes: The dependent variable in column 1 is the number of days spent in physical education class. The dependent variable in column 2 is an indicator for whether the respondent had tried smoking and in column 3 an indicator for whether the respondent had tried alcohol. The independent variable of interest is an indicator for whether the student's state required school-based BMI assessments, and the regressions are estimated using the stacked difference-in-differences specification from equation (1). Column 1 is estimated via Poisson regression and columns 2 and 3 via ordinary least squares. Panel A examines all teens, Panel B teen girls, and Panel C teen boys. The estimates are unweighted. Standard errors, shown in parentheses, are clustered at the state level. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

school-based BMI assessments were meaningfully related to changes in physical activity or calorie-limiting behaviors.

As previously mentioned, my identifying assumption is that, after accounting for the covariates and fixed effects, outcomes for teens bound by these requirements would have evolved similarly to those of teens not required to receive a school-based BMI assessment if not for the policy change. The event study estimates, which reveal no evidence of differential pre-trends, are consistent with this assumption. Yet the lack of a clear pre-trend does not rule out the possibility that states were adopting a broader set of anti-childhood obesity policies concurrent with the decision to mandate school-based BMI assessments. While I have controlled for a variety of possibly confounding policies throughout the analysis, Table 5 reports estimates from falsification tests intended to increase confidence that I

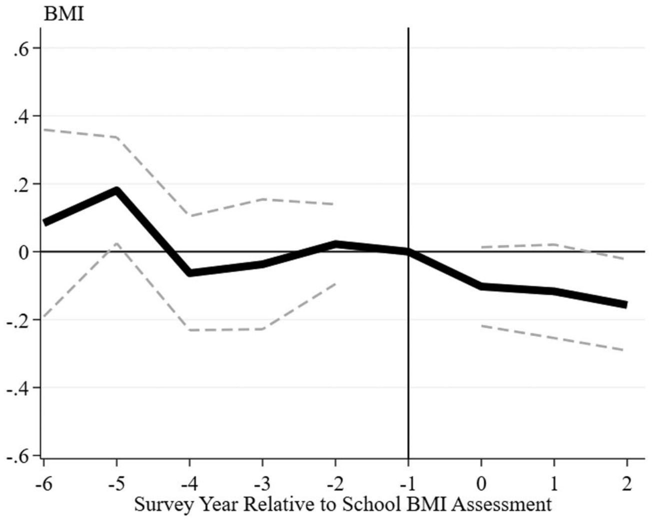
TABLE 6 State-mandated school-based BMI assessments were associated with modest reductions in BMI for teen boys.

Outcome →	(1) BMI	(2) Underweight	(3) Healthy weight	(4) Overweight or obese
Panel A: All teens				
BMI assessment	−0.207***	0.001	0.013***	−0.014***
	(0.046)	(0.001)	(0.004)	(0.004)
Mean	23.219	0.023	0.678	0.299
R^2	0.043	0.004	0.025	0.027
States	51	51	51	51
Unique observations	853,028	853,028	853,028	853,028
Panel B: Teen girls				
BMI assessment	−0.131*	0.000	0.007	−0.007
	(0.068)	(0.001)	(0.005)	(0.005)
Mean	22.904	0.020	0.721	0.260
R^2	0.048	0.005	0.026	0.030
States	51	51	51	51
Unique observations	435,957	435,957	435,957	435,957
Panel C: Teen boys				
BMI assessment	−0.286***	0.002	0.019***	−0.021***
	(0.056)	(0.001)	(0.006)	(0.006)
Mean	23.549	0.026	0.634	0.340
R^2	0.034	0.004	0.011	0.012
States	51	51	51	51
Unique observations	417,071	417,071	417,071	417,071
State YRBS?	Y	Y	Y	Y
National YRBS?	Y	Y	Y	Y
Years	1999–2017	1999–2017	1999–2017	1999–2017

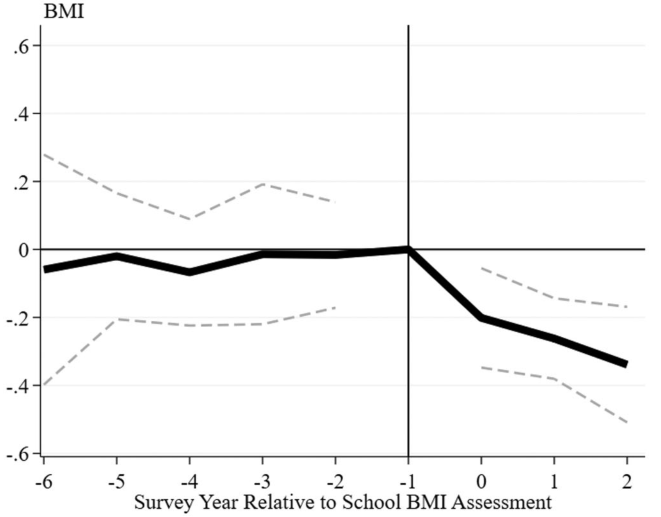
Source: National Youth Risk Behavior Surveys, 1991 to 2017.
Notes: The dependent variable in column 1 is the teen's body mass index. In column 2, the dependent variable is an indicator for being classified as underweight, in column 3 for being within the recommended BMI range, and in column 4 for being classified as overweight or obese. The independent variable of interest is an indicator for whether the student's state required school-based BMI assessments. The regressions are estimated using the stacked difference-in-differences specification from equation (1). Panel A examines all teens, Panel B teen girls, and Panel C teen boys. The estimates are unweighted. Standard errors, shown in parentheses, are clustered at the state level. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

have isolated the importance of the BMI assessments. For example, it is possible that states adopting school-based BMI assessments also increased the time that students spent in physical education classes or receiving health-related instruction. Yet column 1 does not find any evidence that this was occurring; indeed, the point estimates are negative and statistically insignificant. Nor do columns 2 and 3 indicate that students were less likely to have adopted other risky behaviors, such as smoking and alcohol consumption, which would likely be affected by broader investments in health education classes.

Overall, the prior estimates have indicated that mandated school-based BMI assessments were associated with an increase in the likelihood that overweight or obese teens correctly described their body types based on their BMIs and reported that they were trying to lose weight. Yet I did not detect consistent changes in weight loss strategies, such as exercising or calorie-limiting behaviors. Finally, Table 6 tests whether mandated school-based BMI assessments were associated with changes in BMI.



(a) Teen girls



(b) Teen boys

FIGURE 6 Event study estimates on state-mandated school-based BMI assessments and teen BMI

Source: National and State Youth Risk Behavior Surveys 1999 to 2017.

Notes: The dependent variable is the teen's BMI. The solid dark line plots the event study coefficients, and the lighter dashed lines plot the associated 95% confidence intervals. The values are estimated using the full set of controls from equation (2). Panel (A) examines teen girls, while Panel (B) examines teen boys.

The dependent variable in column 1 is the teen's BMI, in column 2 an indicator for whether the teen was classified as underweight, in column 3 if the teen was classified as having a healthy weight, and in column 4 if the teen was classified as overweight or obese. Panel A examines all teens, Panel B examines teen girls, and Panel C examines teen boys.

Column 1 indicates that school-based BMI assessments were associated with a 0.2 unit reduction in BMI, a 0.9% reduction relative to the sample mean (Panel A). For comparison, prior work has found that weekly consumption of fast food by young adults is linked to a 0.2 unit increase in BMI (Duffey et al., 2007). While modest in size, columns 3 and 4 indicate that the policies were associated with a 1.3 percentage point (2%) increase in the likelihood that teens were classified as healthy weight and a 1.4 percentage point (4.7%) reduction in the likelihood that they were classified as overweight or obese. While these patterns suggest that the change in BMI was likely to have been for those just on the margin of being classified as overweight, the relationship is notably smaller than other school-level interventions designed to reduce obesity. For example, Cawley et al. (2013) found that an additional hour of required physical education each week reduced the probability that a child was obese by 22% relative to the mean for fifth graders. Interestingly, the relationship appears to have been weaker for teen girls (Panel B) and stronger for teen boys (Panel C), which is consistent with evidence linking physical education requirements to changes in BMI (Cawley et al., 2013; Sabia et al., 2017). The event study estimates in Figure 6 indicate that the reduction in BMI was limited to the post-period.

While the estimated relationships between the state-mandated school-based BMI assessments and changes in BMI were relatively small in magnitude, the policy implications of these estimates depend on whether these assessments should have induced changes for all adolescents or only those who updated their beliefs about their BMIs. For example, it is possible that the BMI assessments signaled the importance of weight loss to overweight teens who were already aware that they were overweight. As such, for the population as a whole, a 0.9% reduction suggests that the BMI assessments did little to reduce BMI. Alternatively, if this reduction was entirely driven by the teens newly describing themselves as overweight, the modest change in BMI could instead be attributed to these assessments doing a relatively weak job at updating beliefs about BMI. In this case, policies inducing larger changes in beliefs might lead to larger reductions in BMI.

CONCLUSION

This paper provides novel quasi-experimental national evaluation of how state-mandated school-based BMI assessments were related to adolescent self-image and weight-related health behaviors. Leveraging 24 state policy changes, I use the 1991 to 2017 State and National YRBS data to show that these policies were associated with an increase in the likelihood that overweight or obese teens described themselves as overweight and reported trying to lose weight. These results are in line with claims made by proponents of these laws who argue that school-based BMI assessments educate teens who would otherwise be unaware that they are overweight. Yet I also find that these policies were associated with an increase in the likelihood that non-overweight teen girls incorrectly described themselves as being overweight. While I do not detect any changes in calorie-expending behaviors or calorie-limiting behaviors, I do find evidence that these policies were associated with a modest reduction BMI.

This study is subject to some notable limitations. First, I cannot definitively say whether students and/or their parents read the BMI assessments. While I find evidence that overweight teen girls more accurately described their body types based on their BMIs after these laws went into effect, I am unable to isolate whether this was because of the assessment or a general increase in BMI-awareness resulting from these policies. Indeed, I cannot directly test whether the respondents had received a school-based BMI assessment. Nor am I able to determine whether the estimated relationships are due to the girls internalizing the messaging on the assessment, increased weight-related conversations at school, or changes in parental attitudes at home. Uncovering ways to isolate how each of these pathways can affect weight-related behaviors remains an important area for future work. Second, it is possible that my estimates are conflating the BMI assessments with other state-level strategies aimed at reducing childhood obesity. While I have taken several steps to alleviate this concern, such as controlling for other policies which might affect weight-related behaviors and showing that students in states requiring BMI assessments were not spending more time in physical education classes or changing other health behaviors, any missing policy would likely bias my estimate toward finding a reduction in BMI. This makes the fact that I do not detect a sizable change in BMI perhaps more striking. Finally, the YRBS data are self-reported and may not accurately capture all behavior changes. While this limitation is common to these types of analyses—and in this case weight perception is perhaps as interesting as objectively measured clinical outcomes—future work should explore datasets allowing researchers to precisely measure behavior changes, especially regarding risky weight loss activities. Despite these limitations, these results provide the most externally valid evidence and comprehensive evidence on the effects of mandating school-based BMI assessments.

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REFERENCES

Allan, J. D., Mayo, K., & Yvonne, M. (1993). Body size values of white and black women. *Research in Nursing*, *16*(5), 323–333. https://doi.org/10.1002/nur.4770160503

Almond, D., Lee, A., & Schwartz, A. E. (2016). Impacts of classifying New York City students as overweight. *Proceedings of the National Academy of Sciences*, *113*(13), 3488–3491. https://doi.org/10.1073/pnas.1518443113

American Academy of Pediatrics. (2003). Prevention of pediatric overweight and obesity. *Pediatrics*, *112*(2), 424–430. https://doi.org/10.1542/peds.112.2.424

Anderson, D. M., & Elsea, D. (2015). The Meth Project and teen meth use: New estimates from the National and State Youth Risk Behavior Surveys. *Health Economics*, *24*(12), 1644–1650. https://doi.org/10.1002/hec.3116

Anderson, D. M., Hansen, B., & Walker, M. B. (2013). The minimum dropout age and student victimization. *Economics of Education Review*, *35*, 66–74. https://doi.org/10.1016/j.econedurev.2013.03.005

Andrabi, T., Das, J., & Khwaja, A. I. (2017). Report cards: The impact of providing school and test scores on educational markets. *American Economic Review*, *107*(6), 1535–1563. https://doi.org/10.1257/aer.20140774

Arduini, T., Iorio, D., & Patacchini, E. (2019). Weight, reference points, and the onset of eating disorders. *Journal of Health Economics*, *65*, 170–188. https://doi.org/10.1016/j.jhealeco.2019.03.004

Associated Press. (2007, February 5). *Arkansas' obesity report cards get failing grade*. NBC News. https://www.nbcnews.com/health/health-news/arkansas-obesity-report-cards-get-failing-grade-flna1c9470616

Atkins, D. N., & Bradford, W. D. (2015). The effect of changes in state and federal policy for nonprescription access to emergency contraception on youth contraceptive use: A difference-in-difference analysis across New England states. *Contemporary Economic Policy*, *33*(3), 405–417. https://doi.org/10.1111/coep.12081

Bailey-Davis, L., Peyer, K. L., Fang, Y., Kim, J., & Welk, G. J. (2017). Effects of enhancing school-based body mass index screening reports with parent education on report utility and parental intent to modify obesity risk factors. *Childhood Obesity*, *13*(2), 164–171. https://doi.org/10.1089/chi.2016.0177

Bergman, P. (2021). Parent-child information frictions and human capital investment: Evidence from a field experiment. *Journal of Political Economy*, *129*(1), 286–322. https://doi.org/10.1086/711410

Bertrand, M., Duflo, E., & Mullainathan, S. (2004). How much should we trust difference-in-differences estimates? *Quarterly Journal of Economics*, *119*(1), 249–275. https://doi.org/10.1162/003355304772839588

Bhattacharya, J., Currie, J., & Haider, S. J. (2006). Breakfast of champions? The school breakfast program and the nutrition of children and families. *Journal of Human Resources*, *XLI*(3), 445–466. https://doi.org/10.3368/jhr.XLI.3.445

Bibiloni, M., Pich, J., Pons, A., & Tur, J. A. (2013). Body image and eating patterns among adolescents. *BMC Public Health*, *13*, Article Number 1104. http://www.biomedcentral.com/1471-2458/13/1104

Blondin, K. J., Giles, C. M., Craddock, A. L., Gortmaker, S. L., & Long, M. W. (2016). US states' childhood obesity surveillance practices and recommendations for improving them, 2014–2015. *Preventing Chronic Disease*, *13*, E97. https://doi.org/10.5888/pcd13.160060

Bollinger, B., Leslie, P., & Sorensen, A. (2011). Calorie posting in chain restaurants. *American Economic Journal: Economic Policy*, *3*(1), 91–128. https://doi.org/10.1257/pol.3.1.91

Borusyak, K., Jaravel, X., & Spiess, J. (2021). *Revisiting event study designs: Robust and efficient estimation* [Working paper]. arXiv: 2108.12419. https://doi.org/10.48550/arXiv.2108.12419

Buchmueller, T. C., DiNardo, J., & Valleta, R. G. (2011). The effect of an employer health insurance mandate on health insurance coverage and demand for labor: Evidence from Hawaii. *American Economic Journal: Economic Policy*, *3*(4), 25–51. https://doi.org/10.1257/pol.3.4.25

Callaway, B., & Sant'Anna, P. H. C. (2021). Difference-in-differences with multiple time periods. *Journal of Econometrics*, *225*(2), 200–230. https://doi.org/10.1016/j.jeconom.2020.12.001

Capogrossi, K., & You, W. (2017). The influence of school nutrition programs on the weight of low-income children: A treatment effect analysis. *Health Economics*, *26*(8), 980–1000. https://doi.org/10.1002/hec.3378

Carpenter, C. S., Churchill, B. F., & Marcus, M. M. (2023). Bad lighting: Effects of youth indoor tanning prohibitions. *Journal of Health Economics*, *88*, 102738. https://doi.org/10.1016/j.jhealeco.2023.102738

Carpenter, C. S., & Cook, P. (2008). Cigarette taxes and youth smoking: New evidence from National, State, and Local Youth Risk Behavior Surveys. *Journal of Health Economics*, *27*(2), 287–299. https://doi.org/10.1016/j.jhealeco.2007.05.008

Carpenter, C. S., & Tello-Trillo, D. S. (2015). Do cheeseburger bills work? Effects of tort reform for fast food. *Journal of Law and Economics*, *58*, 805–827. https://doi.org/10.1086/684295

Cawley, J., Frisvold, D., Hill, A., & Jones, D. (2019). The impact of the Philadelphia beverage tax on purchases and consumption by adults and children. *Journal of Health Economics*, *67*. https://doi-org/10.1016/j.jhealeco.2019.102225.

Cawley, J., Frisvold, D., Meyerhoefer, C. (2013). The impact of physical education on obesity among elementary school children. *Journal of Health Economics*, *32*, 743–755. https://doi.org/10.1016/j.jhealeco.2013.04.006

Cawley, J., Markowitz, S., & Tauras, J. (2004). Lighting up and slimming down: The effects of body weight and cigarette prices on adolescent smoking initiation. *Journal of Health Economics*, *23*, 293–311. https://doi.org/10.1016/j.jhealeco.2003.12.003

Cawley, J., Meyerhoefer, C., & Newhouse, D. (2007). The impact of state physical education requirements on youth physical activity and overweight. *Health Economics*, *16*, 1287–1301. https://doi.org/10.1002/hec.1218

Cawley, J., & Price, J. A. (2013). A case study of a workplace wellness program that offers financial incentives for weight loss. *Journal of Health Economics*, *32*(4), 794–803. https://doi.org/10.1016/j.jhealeco.2013.04.005

Chomitz, V. R., Collins, J., Kim, J., Kramer, E., & McGowan, R. (2003). Promoting health weight among elementary school children via a health report card approach. *Archives of Pediatrics and Adolescent Medicine*, *157*, 765–772. https://doi.org/10.1001/archpedi.157.8.765

Choudhury, R. S., & Conway, K. (2020). The effect of tobacco policies on youth physical activity. *Economics and Human Biology*, *38*. https://doi-org/10.1016/j.ehb.2020.100872.

Clark, K. L., Pohl, R. V., & Thomas, R. C. (2020). Minimum wages and healthy diet. *Contemporary Economic Policy*, *38*(3), 546–560. https://doi.org/10.1111/coep.12463

Coleman, S., Dee, T. S., & Joyce, T. (2013). Do parental involvement laws deter risky sex? *Journal of Health Economics*, *32*, 873–880. https://doi.org/10.1016/j.jhealeco.2013.06.003

Costa-Font, J., & Jofre-Bonet, M. (2013). Anorexia, body image and peer effects: Evidence from a sample of European women. *Economica*, *80*, 40–64. https://doi.org/10.1111/j.1468-0335.2011.00912.x

Cotti, C., & Tefft, N. (2013). Fast food prices, obesity, and the minimum wage. *Economics & Human Biology*, *11*(2), 134–147. https://doi.org/10.1016/j.ehb.2012.04.002

Cryle, P, & Stephens, E. (2017). *Normality: A critical genealogy*. University of Chicago Press.

Cullen, K. W., Watson, K., & Zakeri, I. (2008). Improvements in middle school student dietary intake after implementation of the Texas Public School Nutrition Policy. *American Journal of Public Health*, *98*(1), 111–117. https://doi.org/10.2105/AJPH.2007.111765

Cunningham, S, & Shah, M. (2018). Decriminalizing indoor prostitution: Implications for sexual violence and public health. *Review of Economic Studies*, *85*(3), 1683–1715. https://doi.org/10.1093/restud/rdx065

Darlow, S. D., Heckman, C. J., & Munshi, T. (2016). Tan and thin? Associations between attitudes toward thinness, motives to tan, and tanning behaviors in adolescent girls. *Psychology, Health, & Medicine*, *21*(5), 618–624. https://doi.org/10.1080/13548506.2015.1093643

de Chaisemartin, C., & d'Haultfœuille, X. (2020). Two-way fixed effects estimators with heterogeneous treatment effects. *American Economic Review*, *110*(9), 2964–2996. https://doi.org/10.1257/aer.20181169

Deshpande, M., & Li, Y. (2019). Who is screened out? Application costs and the targeting of disability programs. *American Economic Journal: Economic Policy*, *11*(4), 213–248. https://doi.org/10.1257/pol.20180076

Dizon-Ross, R. (2019). Parents' beliefs about their children's academic ability: Implications for educational investments. *American Economic Review*, *109*(8), 2728–2765. https://doi.org/10.1257/aer.20171172

Division of Nutrition, Physical Activity, and Obesity. (2021). *Healthy weight, nutrition, and physical activity: About child & teen BMI*. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. https://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html.

Duffey, K. J., Gordon-Larsen, P., Jacobs, D.R., Jr., Williams, O. D., & Popkin, B. M. (2007). Differential associations of fast food and restaurant food consumption with a 3-Y change in body mass index: The coronary artery risk development in young adults study. *American Journal of Clinical Nutrition*, *85*(1), 201–208. https://doi.org/10.1093/ajcn/85.1.201

Fichera, E., & von Hinke, S. (2020). The response to nutritional labels: Evidence from a quasi-experiment. *Journal of Health Economics*, *72*. https://doi-org/10.1016/j.jhealeco.2020.102326.

Fitzgibbon, M. L., Blackman, L. R., & Avellone, M. E. (2000). The relationship between body image discrepancy and body mass index across ethnic groups. *Obesity Research*, *8*(8), 582–589. https://doi.org/10.1038/oby.2000.75

Fletcher, J. M., Frisvold, D. E., & Tefft, N. (2010). The effects of soft drink taxes on child and adolescent consumption and weight outcomes. *Journal of Public Economics*, *94*(11–12), 967–974. https://doi.org/10.1016/j.jpubeco.2010.09.005

Gerson, M. N. (2021). Fat liberation's Jewish past—and future: A new wave of activists advocate for legal and cultural change.' *Fat Studies: An Interdisciplinary Journal of Body Weight and Society*. https://doi.org/10.1080/21604851.2021.1902703.

Golden, N. H., Schneider, M., Wood, C., & Committee on Nutrition, Committee on Adolescence, Section on Obesity. (2016). Preventing obesity and eating disorders in adolescents. *Pediatrics*, *138*(3), e20161649. https://doi.org/10.1542/peds.2016-1649

Gonzalez, M. C., Correia, M. I., & Heymsfield, S. B. (2017). A requiem for BMI in the clinical setting. *Current Opinion in Clinical Nutrition and Metabolic Care*, *20*(5), 314–321. https://doi.org/10.1097/MCO.0000000000000395

Goodman-Bacon, A. (2021). Difference-in-differences with variation in treatment timing. *Journal of Econometrics*, *225*(2), 254–277. https://doi.org/10.1016/j.jeconom.2021.03.014

Grimmett, C., Croker, H., Carnell, S., & Wardle, J. (2008). Telling parents their child's weight status: Psychological impact of a weight-screening program. *Pediatrics*, *122*(3), e682–e688. https://doi.org/10.1542/peds.2007-3526

Guthman, J. (2012). Doing justice to bodies? Reflections on food justice, race, and biology. *Antipode*, *46*(5), 1153–1171. https://doi.org/10.1111/j.1467-8330.2012.01017.x

Hargreaves, D. A., & Tiggemann, M. (2004). Idealized media images and adolescent body image: "Comparing" boys and girls. *Body Image*, *1*(4), 351–361. https://doi.org/10.1016/j.bodyim.2004.10.002

Harrison, D. L. (2021). *Belly of the beast: The politics of anti-fatness as anti-blackness*. North Atlantic Books.

Hernandez, R. G., Cheng, T. L., & Serwint, J. R. (2010). Parents' healthy weight perceptions and preferences regarding obesity counseling in preschoolers: Pediatricians matter. *Clinical Pediatrics*, *49*(8), 790–798. https://doi.org/10.1177/0009922810368288

Huang, W., Liu, E. M., & Zuppann, C. A. (2020). Relative obesity and the formation of non-cognitive abilities during adolescence. *Journal of Human Resources*, *58*(4). https://doi.org/10.3368/jhr.58.2.1018-9812R2

Isaacson, R.A. (2014, March 31). *Determinants of state policy on childhood obesity: An analysis of anti-obesity legislation passed from 2003–2013* [Unpublished thesis]. University of California, San Diego. https://polisci.ucsd.edu/_files/undergrad/Thesis%202014%20Determinants%20of%20State%20Policy%20on%20Childhood%20Obesity%20An%20Analysis%20of%20Anti-Obesity%20Legislation%20Passed%20from%202003%20to%202013.pdf

Justin, T.A., & Jette, S. (2021). "That chart ain't for us": How Black women understand "obesity," health, and physical activity. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, *26*(5). https://doi.org/10.1177/13634593211046844

Kaczmarski, J. M., DeBate, R. D., Marhefka, S. L., & Daley, E. M. (2011). State-mandated school-based BMI screening and parent notification: A descriptive case study. *Health Promotion Practice*, *12*(6), 797–801. https://doi.org/10.1177/1524839911419289

Kantor, J. (2007, January 8). As obesity fight hits cafeteria, many fear a note from school. *New York Times*. https://www.nytimes.com/2007/01/08/health/08obesity.html.

Kenkel, D. (1991). What you don't know really won't hurt you. *Journal of Policy Analysis and Management*, *10*(2), 304–309. https://doi.org/10.2307/3325178

Leahey, T. M., LaRose, J. G., Fava, J. L., & Wing, R. R. (2011). Social influences are associated with BMI and weight loss intentions in young adults. *Obesity*, *19*(6), 1157–1162. https://doi.org/10.1038/oby.2010.301

Linchey, J., & Madsen, K. A. (2011). State requirements and recommendations for school-based screenings for body mass index or body composition, 2010. *Preventing Chronic Disease*, *8*(5), A101. https://www.cdc.gov/pcd/issues/2011/sep/11_0035.htm

Luo, Y., & Pan, Z. (2020). Peer effects on student weight: Randomization evidence from China. *Applied Economics*, *52*(58), 6360–6371. https://doi.org/10.1080/00036846.2020.1791312

Madsen, K. A., Thompson, H. R., Linchey, J., Ritchie, L. D., Gupta, S., Neumark-Sztainer, D., Crawford, P. B., McCulloch, C. E., & Ibarra-Castro, A. (2021). Effect of school-based body mass index reporting in California public schools: A randomized clinical trial. *Journal of the American Medical Association: Pediatrics*, *175*(3), 251–259. https://doi.org/10.1001/jamapediatrics.2020.4768

Morales, D. X., Grineski, S. E., & Collins, T. W. (2019). School bullying, body size, and gender: An intersectionality approach to understanding US children's bullying victimization. *British Journal of Sociology of Education*, *40*(8), 1121–1137. https://doi.org/10.1080/01425692.2019.1646115

Myers, T. A., & Crowther, J. H. (2009). Social comparison as a predictor of body dissatisfaction: A meta-analytic review. *Journal of Abnormal Psychology*, *118*(4), 683–698. https://psycnet.apa.org/doi/10.1037/a0016763

Nicosia, N., & Datar, A. (2020). The impact of state policies for school-based BMI/fitness assessments on children's BMI outcomes in rural versus urban schools: Evidence from a natural experiment. *Preventive Medicine*, *141*, 106257. https://doi.org/10.1016/j.ypmed.2020.106257

Nihiser, A. J., Lee, S. M., Wechsler, H., McKenna, M., Odom, E., Reinold, C., Thompson, D., & Grummer-Strawn, L. (2007). Body mass index measurement in schools. *Journal of School Health*, *77*(10), 651–671. https://doi.org/10.1111/j.1746-1561.2007.00249.x

Office of the Surgeon General. (2021). *Protecting youth mental health: The U.S. Surgeon General's advisory*. U.S. Department of Health and Human Services. https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf

Ogden, C. L., Carroll, M. D., & Flegal, K. M. (2008). High body mass index for age among US children and adolescents, 2003–2006. *Journal of the American Medical Association*, *299*(20), 2401–2405. https://doi.org/10.1001/jama.299.20.2401

Parker, S., Nichter, M., Nichter, M., Vuckovic, N., Sims, C., & Ritenbaugh, C. (1995) Body image and weight concerns among African American and white adolescent females: Differences that make a difference. *Human Organization*, *54*(2), 103–114. https://psycnet.apa.org/doi/10.17730/humo.54.2.06h663745q650450

Peacock, L. N. (2004). Too fat! Governor Huckabee blows the whistle on the weight of our state, especially the kids. *Arkansas Times*. https://arktimes.com/news/cover-stories/2004/10/15/too-fat.

Portilla, M.G. (2011). Body mass index reporting through the school system: Potential harm. *Journal of the Academy of Nutrition and Dietetics*, *111*(3), 442–445. https://doi.org/10.1016/j.jada.2010.11.018

Prina, S., & Royer, H. (2014). The importance of parental knowledge: Evidence from weight report cards in Mexico. *Journal of Health Economics*, *37*, 232–247. https://doi.org/10.1016/j.jhealeco.2014.07.001

Rapee, R. M., Oar, E. L., Johnco, C. J., Forbes, M. K., Fardouly, J., Magson, N. R., & Richardson, C. E. (2019). Adolescent development and risk for the onset of social-emotional disorders: A review and conceptual model. *Behavior Research and Therapy*, *123*, 103501. https://doi.org/10.1016/j.brat.2019.103501

Reece, R.L. (2018). Coloring weight stigma: On race, colorism, weight stigma, and the failure of additive intersectionality. *Sociology of Race and Ethnicity*, *5*(3), 388–400. https://doi.org/10.1177/2332649218795185

Rees, D. I., & Sabia, J. J. (2010). Body weight and smoking initiation: Evidence from Add Health. *Journal of Health Economics*, *29*(5), 774–777. https://doi.org/10.1016/j.jhealeco.2010.07.002

Robinson, M. (2019). *The big colonial bones of indigenous North America's "obesity epidemic."* Routledge.

Rousu, M. C., Marette, S., Thrasher, J. F., & Lusk, J. L. (2014). The economic value to smokers of graphic warning labels on cigarettes: Evidence from combining market and experimental auction data. *Journal of Economic Behavior & Organization*, *108*, 123–134.

Rucker, C. E., & Cash, T. F. (1992). Body images, body-size perceptions, and eating behaviors among African-American and white college women. *International Journal of Eating Disorders*, *12*(3), 291–299. https://doi.org/10.1002/1098-108X(199211)12:3%3C291::AID-EAT2260120309%3E3.0.CO;2-A

Ruggieri, D. G., & Bass, S. B. (2015). A comprehensive review of school-based body mass index screening programs and their implications for school health: Do the controversies accurately reflect the research. *Journal of School Health*, *85*(1), 61–72. https://doi.org/10.1111/josh.12222

Ruhm, C. J. (2000). Are recessions good for your health? *Quarterly Journal of Economics*, *115*(2), 617–650. https://doi.org/10.1162/003355300554872

Ruhm, C. J. (2015). Recessions, healthy no more? *Journal of Health Economics*, *42*, 17–28. https://doi.org/10.1016/j.jhealeco.2015.03.004

Sabia, S. J., & Anderson, D. M. (2016). The effect of parental involvement laws on teen birth control use. *Journal of Health Economics*, *45*, 55–62. https://doi.org/10.1016/j.jhealeco.2015.10.002

Sabia, J. J., Nguyen, T. T., & Rosenberg, O. (2017). High school physical education requirements and youth body weight: New evidence from the YRBS. *Health Economics*, *26*, 1291–1306. https://doi.org/10.1002/hec.3399

Sabia, J. J., Pitts, M. M., & Argys, L. M. (2019). Are minimum wages a silent killer? New evidence on drunk driving fatalities. *The Review of Economics and Statistics*, *101*(1), 192–199. https://doi.org/10.1162/rest_a_00761

Sanders, R. (2017). The color of fat: Racializing obesity, recuperating whiteness, and reproducing injustice. *Politics, Groups, and Identities*, *7*(2), 287–304.

SHADAC. (2023). *Analysis of The State of Obesity: Better Policies for a Healthier America*. University of Minnesota. http://statehealthcompare.shadac.org/map/41/state-requirements-for-bmiweight-assessment-in-schools#a/15/72

Sliwa, S. A., Brener, N. D., Lundeen, E. A., & Lee, S. M. (2019). Do schools that screen for body mass index have recommended safeguards in place? *Journal of School Nursing*, *35*(4), 299–308. https://doi.org/10.1177/1059840518758376

Smith, J. M., Smith, J. E., McLaughlin, E. A., Belon, K. E., Serier, K. N., Simmons, J. D., Kelton, K., Arroyo, C., & Delaney, H. D. (2020). Body dissatisfaction and disordered eating in Native American, Hispanic, and white college women. *Eating and Weight Disorders—Studies on Anorexia, Bulimia and Obesity*, *25*, 347–355. https://doi.org/10.1007/s40519-018-0597-8

Stice, E., & Shaw, H. E. (2002). Role of body dissatisfaction in the onset and maintenance of eating pathology: A synthesis of research findings. *Journal of Psychosomatic Research*, *53*(5), 985–993. https://doi.org/10.1016/S0022-3999(02)00488-9

Sun, L., & Abraham, S. (2021). Estimating dynamic treatment effects in event studies with heterogeneous treatment effects. *Journal of Econometrics*, *225*(2), 175–199. https://doi.org/10.1016/j.jeconom.2020.09.006

Tacopino, J., Fonrouge, G., Italiano, L., & Calabrese, E. (2014, May 22). This kid is fat (according to the City of New York). *NY Post*. https://nypost.com/2014/05/22/nyc-says-this-girl-is-fat/

Tauras, J., Powell, L., Chaloupka, F., & Ross, H. (2007). The demand for smokeless tobacco among high school students in the United States: The impact of taxes, prices and policies. *Applied Economics*, *39*(1), 31–41. https://doi.org/10.1080/00036840500427940

Taveras, E. M., Gillman, M. W., Kleinman, K., Rich-Edwards, J. W., & Rifas-Shiman, S. L. (2010). Racial/ethnic differences in early-life risk factors for childhood obesity. *Pediatrics*, *125*(4), 686–695. https://doi.org/10.1542/peds.2009-2100

Thompson, H. R., & Madsen, K. A. (2017). The report card on BMI report cards. *Current Obesity Reports*, *6*, 163–167. https://doi.org/10.1007/s13679-017-0259-6

Valois, D.D., Davis, C.G., Buchholz, A., Obeid, N., Henderson, K., Flament, M., & Goldfield, G.S. (2019). Effects of weight teasing and gender on body esteem in youth: A longitudinal analysis from the REAL study. *Body Image*, *29*, 65–73. https://doi.org/10.1016/j.bodyim.2019.02.009

Vanderwall, C., Clark, R. R., Eickhoff, J., & Carrel, A. L. (2017). BMI is a poor predictor of adiposity in young overweight and obese children. *BMC Pediatrics*, *17*, 135. https://doi.org/10.1186/s12887-017-0891-z

Wallace, K. (2016, March 17). *Do schools' BMI screenings of students even work?* CNN News. https://www.cnn.com/2016/03/17/health/bmi-screenings-schools-students/index.html.

Wilking, C. L., & Daynard, R. A. (2013). Beyond cheeseburgers: The impact of commonsense consumption acts on future obesity-related lawsuits. *Food and Drug Law Journal*, *68*, 229–239. https://www.jstor.org/stable/26660994

Wisdom, J., Downs, J. S., & Loewenstein, G. (2010). Promoting health choices: Information versus convenience. *American Economic Journal: Applied Economics*, *2*(2), 164–178. https://doi.org/10.1257/app.2.2.164

Wojcicki, J. M., & Heyman, M. B. (2006). Healthier choices and increased participation in a middle school lunch program: Effect of nutrition policy changes in San Francisco. *American Journal of Public Health*, *96*(9), 1542–1547. https://doi.org/10.2105/AJPH.2005.070946

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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