



Do students compensate for
school beverage laws?

*Evidence that removing soda
from schools is not enough*

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Presenter disclosure

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The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

Sugar-sweetened beverages

- % of energy intake from sugar-sweetened beverages (SSBs) among youth:
 - 4.8% in 1977-78
 - 10.3% in 1999-2001
- In 1999-2004, adolescents consumed an average of 356 kcal of SSBs per day
- SSB consumption associated with:
 - Higher weight gain
 - Lower milk consumption
 - Increased risk of dental caries



Breaking the supply chain

- In 2006-07, 78% of middle schools sold SSBs in competitive venues (e.g., vending machines)
- Many states have passed laws to remove sodas from schools
- *Rationale:*
 1. Soda is the #1 choice of SSBs among adolescents
 2. Adolescents spend much of their day in school
 3. If you eliminate sodas in schools, SSB consumption will decline

Less access to
soda in schools



Less consumption of
SSBs overall

Missing the bigger picture?

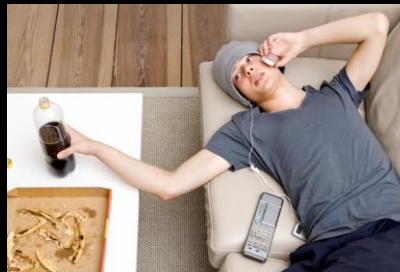
- Sodas in schools are just one part of the system



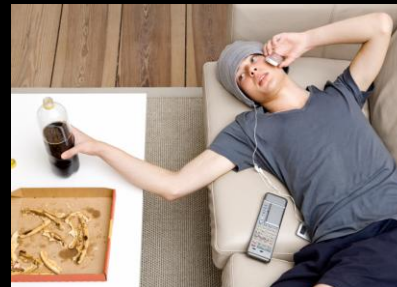
- Other types of SSBs:
 - Sports drinks
 - Energy drinks
 - Fruit juices

Missing the bigger picture?

- Sodas in schools are just one part of the system



- Other sources of SSBs:
 - Convenience stores
 - Fast food
 - Home



Is banning soda in schools enough?

Objectives

1. Analyze whether state laws that govern only soda are sufficient to reduce adolescent access to SSBs and purchasing of SSBs within school
2. Assess whether state laws that govern school beverages are associated with lower overall consumption of SSBs (including out-of-school consumption)
3. Discuss the implications of these results on future policy initiatives

3 categories of state laws



- Allow all SSBs



- Ban only soda

“Allowed beverages include milk, water, energy drinks, and electrolyte replacement beverages”



- Ban all SSBs

“Only milk, water, and 100% juice will be available in school”

State law data collection

- Codified laws governing beverages sold in middle schools in the 2006-07 school year
- Laws obtained from Westlaw and Lexis-Nexis legal research databases
- Double-coded by two trained coders and verified against secondary sources
- Collected as part of Bridging the Gap research program

Student sample

- Early Childhood Longitudinal Study – Kindergarten Class (ECLS-K)
- Nationally representative sample of Kindergarten students sampled in 1998 and followed through 8th grade
- Inclusion criteria in this study:
 - Students measured in 5th grade (2004) and 8th grade (2007)
 - Public school students who did not move states between grades
 - N=6900 students in 40 states

SSB measures

- **In-school access**

“In your school, can kids buy soda pop, sports drinks, or fruit drinks that are not 100% fruit juice in the school?”

- **In-school purchasing**

“During the last week that you were in school, how many times did you buy soda pop, sports drinks, or fruit drinks at school?”

- **Overall consumption**

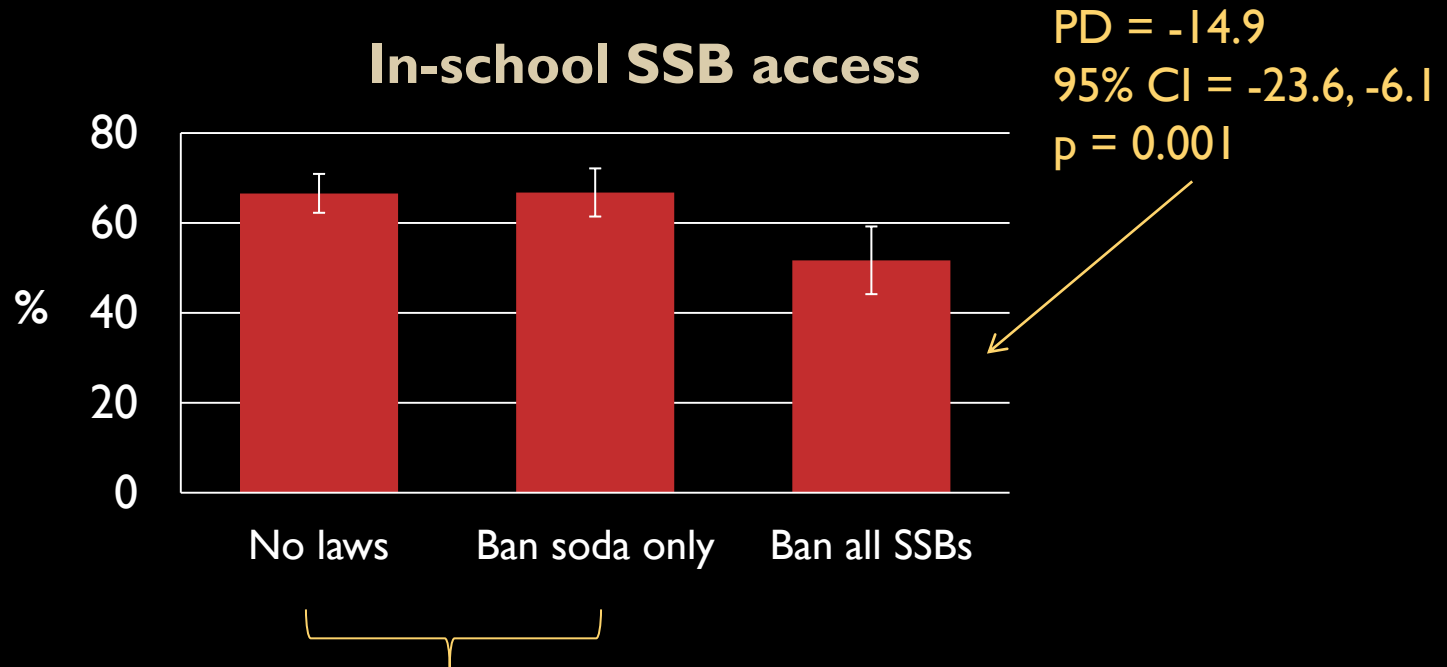
“During the past 7 days, how many times did you drink soda pop, sports drinks, or fruit drinks that are not 100% fruit juice?”

Analysis

- General linear models used to estimate difference between state law categories in probability of 8th grade students reporting:
 - In-school access
 - In-school purchasing – weekly (≥ 1 per week)
 - In-school purchasing – daily (≥ 1 per day)
 - Overall consumption – weekly
 - Overall consumption – daily
- Adjusted for race/ethnicity, poverty status, locale, state obesity prevalence, and state clustering

Results – SSB access

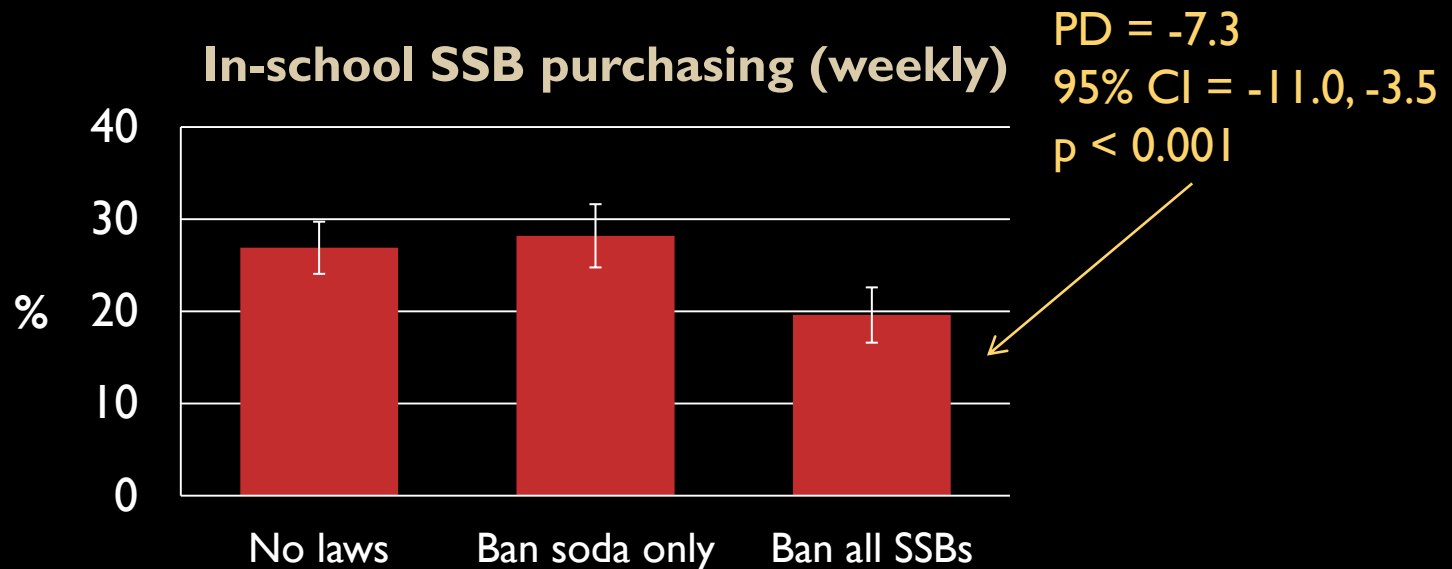
- Fewer students reported in-school access in states that banned all SSBs



- Zero difference between states that banned only soda compared to states that allowed all SSBs

Results – SSB purchasing

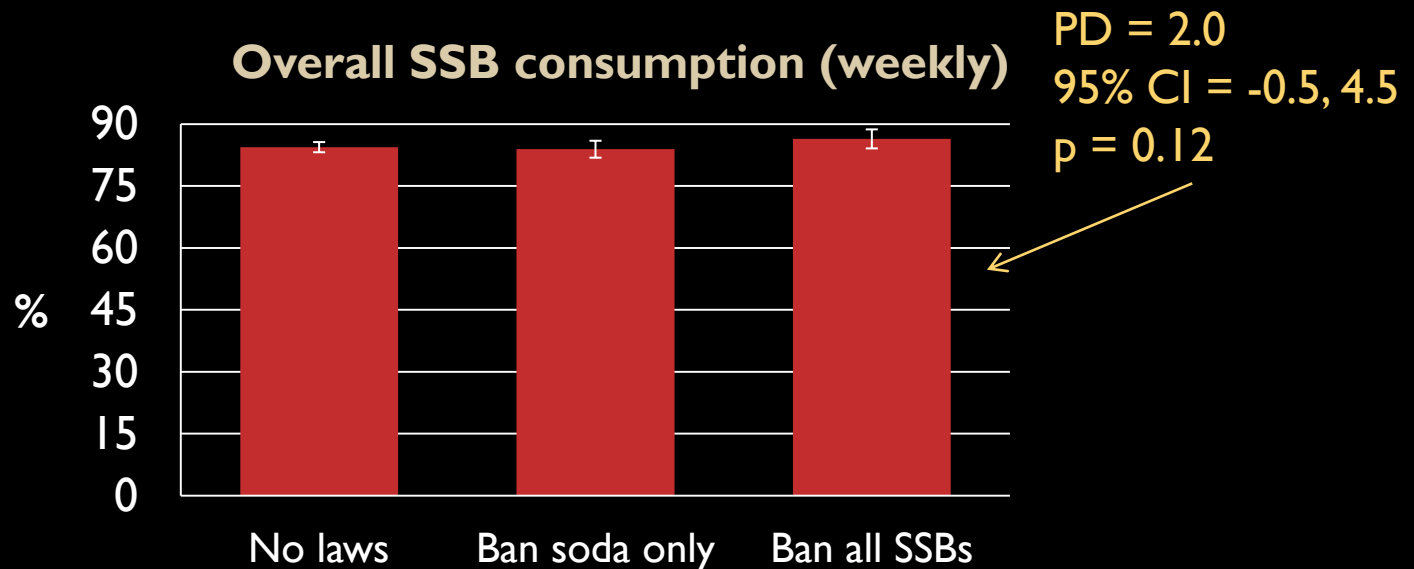
- Fewer student reported weekly in-school SSB purchasing in states that banned all SSBs



- Daily in-school SSB purchasing was approximately equal across all 3 categories

Results – SSB consumption

- No differences in weekly SSB consumption across all 3 categories



- Daily SSB consumption was slightly higher in states that banned all SSBs (PD = 5.6, 95% CI: 0.6, 11.1)

Summary

- Are school beverage laws associated with lower access, purchasing, and consumption of SSBs?
 - Laws that ban only soda ... **NO**
 - Laws that ban all SSBs
 - In-school access ✓
 - In-school purchasing ✓
 - Overall consumption **X**
- *Where is the disconnect??*

Supplementary analysis

- Fixed-effect model used to estimate the association between changes in within-school SSB access and overall SSB consumption
- Losing access to SSBs within school was associated with:
 - Slightly lower probability of weekly SSB consumption
 - Slightly higher probability of daily SSB consumption
- Implication: If laws could eliminate SSBs in school, the overall impact on SSB consumption may be negligible

Limitations

- Cross-sectional design
- Self-reported SSB data
- SSB questions did not separate different types of SSBs
- Other federal and local policies were being implemented during the same time period

Conclusions

- State laws that ban only soda in schools are ineffective at reducing in-school access to SSBs
- State laws that ban all SSBs in school are effective at reducing in-school SSB access but not overall SSB consumption
 - Consumption is largely independent of in-school access
- Public health impact of school beverage laws may be modest without policy changes in other sectors (e.g., SSB marketing)



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Questions?



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Bridging the Gap
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