

Analysis of Public Testimony About Philadelphia's  
Sweetened Beverage Tax

Jeanette G. Elstein, MPH,<sup>1</sup> Caitlin M. Lowery, MSPH,<sup>2,3</sup> Puja Sangoi, DMD, MPH,<sup>2</sup>  
Ana Peterhans, MPH,<sup>1</sup> Sara N. Bleich, PhD,<sup>4</sup> Hannah G. Lawman, PhD,<sup>5</sup> Christina A. Roberto, PhD<sup>1</sup>

**Introduction:** Although interest in beverage taxes has increased in recent years, industry opposition and other challenges have limited their spread in the U.S. Because beverage tax proposals are often unsuccessful, there is limited empirical evidence to inform advocacy efforts. Philadelphia's 1.5 cent-per-ounce tax on sweetened beverages provides an opportunity to understand how public testimony for and against the tax was framed in a city that ultimately passed the policy.

**Methods:** A content analysis of all public testimony about the beverage tax presented to the Philadelphia City Council in 2016 was conducted. Testimonies were coded for policy stance (protax or antitax), speaker type, and specific protax or antitax arguments. Quantitative data were analyzed in 2018–2019 using chi-square tests.

**Results:** A total of 177 unique testimonies were identified, which included 40 protax arguments (grouped into 11 themes) and 31 antitax arguments (grouped into 10 themes). Most testimonies were delivered orally, and most speakers argued in favor of the tax (58%). Among tax supporters, funding early childhood education was the most common argument (71%), whereas tax opponents most frequently argued that sugar-sweetened beverages were the wrong target for the tax (50%).

**Conclusions:** This analysis of public testimony revealed that protax advocacy efforts highlighted the revenue benefits for early childhood education and community infrastructure rather than the tax's potential to reduce sweetened beverage consumption and improve health. By contrast, antitax arguments centered on the unfairness of targeting a single industry, potential negative economic impacts, and the perceived lack of evidence that the tax would influence consumer behavior.

*Am J Prev Med* 2021;000(000):1–10. © 2021 American Journal of Preventive Medicine. Published by Elsevier Inc. All rights reserved.

## INTRODUCTION

There is increasing interest in sweetened beverage taxes as a way to generate revenue and reduce consumption of sugar-sweetened beverages (SSBs).<sup>1,2</sup> As the largest source of added sugar in the American diet,<sup>3,4</sup> excess SSB intake is associated with increased risk for obesity,<sup>5,6</sup> type II diabetes,<sup>7</sup> cardiovascular disease,<sup>8</sup> dental caries,<sup>9,10</sup> and mortality.<sup>11</sup> Currently, 7 U.S. localities have implemented excises taxes on sweetened beverages,<sup>12,13</sup> whereas dozens of other local proposals have been unsuccessful.<sup>12</sup> In a high-profile upset, the sweetened beverage tax in Cook County was repealed 4 months after implementation,<sup>13</sup> and several states have passed preemption laws to prevent new sweetened beverage taxes from being implemented in local jurisdictions.<sup>14</sup> Tax

proponents have countered with proposals for state-level sweetened beverage taxes, but none have passed.<sup>15,16</sup>

From the <sup>1</sup>Department of Medical Ethics & Health Policy, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania; <sup>2</sup>Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland; <sup>3</sup>Department of Nutrition, University of North Carolina at Chapel Hill Gillings School of Public Health, Chapel Hill, North Carolina; <sup>4</sup>Department of Health Policy and Management, Harvard T.H. Chan School of Public Health, Boston, Massachusetts; and <sup>5</sup>Division of Chronic Disease Prevention, Philadelphia Department of Public Health, Philadelphia, Pennsylvania

Address correspondence to: Caitlin M. Lowery, MSPH, Department of Nutrition, University of North Carolina at Chapel Hill Gillings School of Public Health, 123 W Franklin St, Chapel Hill, NC 27516. E-mail: [clowery@unc.edu](mailto:clowery@unc.edu).

0749-3797/\$36.00

<https://doi.org/10.1016/j.amepre.2021.08.023>

After 2 unsuccessful attempts to pass a sweetened beverage tax in Philadelphia in 2010 and 2011, the City Council passed a 1.5 cent-per-ounce tax on SSBs and artificially sweetened beverages (ASBs) in June 2016.<sup>17,18</sup> It is the only current U.S. tax that includes ASBs, which was the result of a last-minute compromise within City Council to secure the necessary votes.<sup>19</sup> Philadelphia Mayor Jim Kenney's administration framed the tax as a revenue generator for key initiatives, including universal pre-kindergarten (pre-K), community schools, and rebuilding community infrastructure, rather than as a public health intervention.<sup>20</sup> Despite the widespread appeal of the Mayor's proposed initiatives,<sup>21</sup> the tax was strongly opposed by the beverage industry and businesses (small and large) because of concern over its impact on beverage prices and profits.<sup>22</sup>

To understand the arguments made for and against this controversial policy, previous research has analyzed media debates over beverage taxes to explore public perceptions, differing perspectives on the potential financial and health impacts of the policy, and varying degrees of support for government intervention.<sup>23–26</sup> Other studies focused on the political feasibility of SSB taxes have conducted qualitative interviews with key stakeholders, such as public officials, politicians, and consumer representatives.<sup>20,27</sup> Finally, an analysis of news media, court documents, testimony, and qualitative interviews about the repealed Cook County tax suggested that inconsistent messaging about the tax's purpose, implementation challenges, and strong antitax voices in the media were major contributors to the tax's failure.<sup>28</sup>

This study adds to the existing literature on beverage tax policy passage by performing a content analysis of public testimony given to the Philadelphia City Council to identify arguments for and against the tax. Although most research on the beverage tax policy process has focused on media coverage or key informant interviews, public hearings provide a unique opportunity to examine which arguments were presented directly to policymakers and by whom. Although there is likely an overlap between popular media coverage and public testimony, analyzing public testimony reveals which actors engaged in the policy process, how issues were framed, and the frequency with which they were raised to policymakers. Furthermore, public testimony has been found to increase state legislators' awareness of and motivation to further investigate issues and may even impact their decision making.<sup>29</sup> Thus, understanding the content, policy stance, and predominance of delivered arguments may provide insight into the influence of public hearings on the policy process.

## METHODS

### Study Sample

Transcripts from all Philadelphia City Council public hearings that included agenda items about the beverage tax or the Fiscal Year 2017 budget and 12 documents containing written or supplementary testimony were obtained from the Office of the Chief Clerk. Document screening for relevance to the proposed tax yielded transcripts from public hearings with public testimony ( $n=5$ ), hearings with testimony from City officials ( $n=4$ ), and testimony submitted in writing ( $n=11$ ). One coder (AP) identified all pertinent testimonies (i.e., testimonies containing  $\geq 1$  explicit pro-tax or antitax argument;  $n=180$ ) and highlighted distinct arguments within each testimony for coder classification.

A total of 3 additional testimonies were excluded during coding owing to irrelevance ( $n=1$ ) or duplication ( $n=2$ ). The final analytic sample included 177 testimonies. Because the initial proposal, which called for a 3 cent-per-ounce tax on SSBs only, was changed shortly before the City Council's vote to approve the tax, all testimonies refer to the original proposal and not to the final, revised version that includes ASBs and reduces the tax rate to 1.5 cents per ounce.

### Measures

Testimonies were coded according to (1) speaker type (e.g., educators, parents, union representatives), (2) overall policy stance (predominantly protax or antitax) on the basis of whether the testimony contained more protax or antitax arguments, (3) the individual protax and antitax arguments presented, and (4) format (oral or written submission). Speaker type was based on speaker self-identification (Table 1). If multiple identities were mentioned, coders used the first identity mentioned, unless both coders agreed that a subsequent identity was more relevant to the testimony (15.2%). For example, one speaker began by saying, "I'm a 37-year resident of the City of Philadelphia and a retired primary care physician..." In this example, coders agreed that "retired primary care physician" was more specific and relevant to the testimony than resident; therefore, this speaker was coded as a healthcare professional.

The codebook was created by first reviewing the entire sample of testimonies to identify distinct protax and antitax arguments. Arguments were then grouped into themes (Table 2). After 4 rounds of pilot testing and revision, 3 coders (JGE, PS, and CML) coded the testimonies. The entire sample was double coded (PS coded all testimonies, and JGE and CML coded 50%). Disagreements were resolved through discussion. This study was deemed not human subjects research by the University of Pennsylvania IRB.

### Statistical Analysis

In addition to the qualitative analysis, descriptive statistics are presented, including the percentage of testimonies that were protax and antitax and that contained each theme and argument and the average number of arguments per testimony (overall and by policy stance). Analyses were conducted in 2018 and 2019. Chi-square tests were performed using Stata, version 16 ( $\alpha<0.05$ ).

**Table 1.** Sources of Sweetened Beverage Tax Public Testimony Delivered to Philadelphia City Council in 2016

Testimony characteristics	% of overall testimony (n=177)	% of protax testimony (n=103)	% of antitax testimony (n=74)	p-value
Policy stance				N/A
Protax	58.2	100.0	0.0	
Antitax	41.8	0.0	100.0	
Type of delivery				<b>0.021*</b>
Oral	76.3	82.5	67.6	
Written	23.7	17.5	32.4	
Themes and arguments				
Number of themes, mean (SD)	2.92 (1.81)	2.93 (1.93)	2.91 (1.64)	0.923
Number of arguments, mean (SD)	4.03 (2.79)	4.14 (2.89)	3.88 (2.66)	0.546
Speaker identity				
Nonprofit/community-based organization	20.3	31.1	5.4	<b>&lt;0.001***</b>
Education	12.4	18.4	4.1	<b>0.004**</b>
Retailer	10.7	3.9	20.3	<b>0.001**</b>
Producer/distributor	10.2	0.00	24.3	<b>&lt;0.001***</b>
Government	9.0	12.6	4.1	0.050
Parent	8.5	11.7	4.1	0.073
Not specified	7.9	1.9	16.2	<b>0.001**</b>
Resident	6.2	3.9	9.5	0.130
Healthcare	5.7	9.7	0.0	<b>0.006**</b>
Union	5.6	4.9	6.8	0.589
Beverage industry	2.8	0.0	6.8	
Education/health	2.8	4.9	0.0	
Other identity	3.4	1.9	5.4	0.209

Note: Boldface indicates statistical significance.

\* $p < 0.05$ .

\*\* $p < 0.01$ .

\*\*\* $p < 0.001$ .

## RESULTS

Overall, 103 testimonies (58.2%) supported the tax, and 74 testimonies (41.8%) opposed the tax (Table 1). Among protax testimonies, the largest speaker category was nonprofit and community-based organizations (31%), which comprised only 5.4% of antitax speakers ( $p < 0.001$ ). Among antitax testimonies, the largest speaker category was beverage producers/distributors (24%), whereas no beverage industry speakers gave protax testimony. Most testimonies were presented orally (76.3%), with more oral testimonies delivered by protax ( $n=85$ ) than by antitax ( $n=50$ ) speakers ( $p=0.02$ ).

Testimony analysis resulted in the identification of 40 unique protax arguments, which were grouped into 11 distinct protax themes, and 31 unique antitax arguments, which were grouped into 10 antitax themes. Protax testimonies contained an average of 4.1 arguments and 2.9 themes, and antitax testimonies had an average of 3.9 arguments and 2.9 themes.

Table 2 describes each protax and antitax theme and summarizes the percentage of testimonies that include each theme. Sample quotes from each theme are provided in Table 3 (protax themes) and Table 4 (antitax themes). The specific protax (Appendix Table 1, available online) and antitax (Appendix Table 2, available online) arguments are described in the Appendix (available online), along with their relative frequencies (Appendix Table 3, available online). The most frequent themes by policy stance are summarized in this study.

Two of the most common protax themes pertained to the Mayor's initiatives. Early childhood education (ECE) figured prominently in both protax and antitax arguments, although it came up more than twice as often in protax testimonies than as in antitax testimonies ( $p < 0.001$ ). Arguments for ECE (Protax Theme 1) appeared in 71% of protax testimonies and emphasized the importance of funding universal pre-K and the need to improve education for all children. One parent argued, for example, "Existing education revenues are

**Table 2.** Proportion of SSB Tax Testimonies Including Discrete Protax and Antitax Themes

Themes	Proportion of protax ( <i>n</i> =103) or antitax testimonies ( <i>n</i> =74) containing theme Proportion (95% CI)	Proportion of all testimonies ( <i>n</i> =177) containing theme (95% CI)
Any protax theme <sup>a</sup>	1.00	0.59 (0.52, 0.66) <sup>b</sup>
Theme 1: tax will fund early childhood education (ECE)	0.71 (0.61, 0.79)	0.41 (0.34, 0.49)
Theme 2: tax will have positive economic outcomes	0.41 (0.32, 0.51)	0.24 (0.18, 0.31)
Theme 3: tax will fund improvement of community infrastructure through Rebuild	0.36 (0.27, 0.46)	0.21 (0.16, 0.28)
Theme 4: Philadelphia needs to act now	0.28 (0.20, 0.38)	0.16 (0.12, 0.23)
Theme 5: tax will improve health outcomes	0.26 (0.19, 0.36)	0.16 (0.12, 0.23)
Theme 6: tax will fund community schools	0.22 (0.15, 0.31)	0.13 (0.09, 0.19)
Theme 7: tax will fight poverty, racism, and inequality	0.21 (0.14, 0.30)	0.12 (0.08, 0.18)
Theme 8: tax is not an attack on beverage industry	0.15 (0.09, 0.23)	0.08 (0.05, 0.14)
Theme 9: tax is not a violation of personal freedom	0.13 (0.07, 0.21)	0.07 (0.04, 0.12)
Theme 10: tax is a source of revenue (for initiatives other than pre-K, community schools, and Rebuild)	0.11 (0.06, 0.18)	0.06 (0.03, 0.11)
Theme 11: other argument in support of tax	0.05 (0.02, 0.11)	0.03 (0.01, 0.07)
Any antitax theme <sup>a</sup>	1.00	0.43 (0.36, 0.50) <sup>b</sup>
Theme 1: beverage industry is not the right target for the tax	0.50 (0.39, 0.61)	0.21 (0.16, 0.28)
Theme 2: tax will hurt Philadelphia businesses and economy	0.47 (0.36, 0.59)	0.20 (0.15, 0.27)
Theme 3: tax will not be effective	0.47 (0.36, 0.59)	0.20 (0.15, 0.26)
Theme 4: tax will have negative impact on individuals' finances	0.46 (0.35, 0.57)	0.20 (0.15, 0.27)
Theme 5: tax will hurt the beverage industry	0.30 (0.20, 0.41)	0.12 (0.08, 0.18)
Theme 6: tax is regressive	0.28 (0.19, 0.40)	0.12 (0.08, 0.18)
Theme 7: tax is a violation of personal freedom	0.18 (0.10, 0.28)	0.07 (0.04, 0.12)
Theme 8: taxation is a slippery slope (and will lead to taxes on other products)	0.07 (0.03, 0.15)	0.03 (0.01, 0.07)
Theme 9: tax is unnecessary	0.05 (0.02, 0.14)	0.02 (0.01, 0.06)
Theme 10: other argument in opposition to tax	0.09 (0.05, 0.19)	0.04 (0.02, 0.08)

<sup>a</sup>This table shows the proportion of protax testimonies (*n*=103) containing each protax theme and the proportion of antitax testimonies (*n*=103) containing each antitax theme.

<sup>b</sup>The proportion of testimonies containing any protax theme is not exactly the same as the proportion of protax testimonies because a small number (2.7%) of antitax testimonies used a protax argument. The same is true for antitax testimonies; 1.9% of protax testimonies included an antitax argument.

ECE, early childhood education; pre-K, pre-kindergarten; SSB, sugar-sweetened beverage.

not available and pre-K benefits are clear and compelling. It is an imperative for our City's children and our future that this funding be provided."

All 3 of the Mayor's initiatives came up frequently in protax testimonies, including the creation of community schools and the plan to Rebuild community infrastructure (i.e., parks, recreational centers, libraries). Improving parks and neighborhood facilities to give children equitable access to safe places to play and after-school activities (Protax Theme 3) appeared in 36% of protax testimonies.

The most common theme in antitax testimony centered on SSBs as the wrong target for the tax (Antitax Theme 1, 50% of antitax testimonies). Speakers emphasized that they supported the Mayor's initiatives but urged City Council to find another way to fund the proposed programs. For example, one Pepsi bottling

company employee asserted, "We want pre-K. We want parks. I grew up in the city. I played in the parks, you know, just like everybody else in this room did. We all want these good things, but put it on—put it on another way. You cannot put it on the backs of one industry...". This theme also included arguments about the unfairness of targeting 1 industry, the belief in a better way to generate revenue and proposals for doing so (e.g., budget amendments), and the role of other products in promoting obesity.

Similarly, antitax testimonies frequently contained arguments about the (in)effectiveness of the tax (Antitax Theme 3) on reducing sweetened beverage purchases (47% of antitax testimonies). Speakers argued that people would purchase SSBs outside the city, that the tax is not sustainable, that projected revenue is

**Table 3.** Sample Quotes From Each Protax Theme

Protax argument themes	Example quote
Theme 1: tax will fund early childhood education (ECE)	“While low income working parents may be able to get a childcare subsidy with the fee cap at about nine percent of their income, there is not enough to go around and hundreds of children are stuck on waiting lists. The City’s plan Universal pre-K program will not only help parents access and afford these services, but it can change children’s lives forever.”
Theme 2: tax will have positive economic outcomes	“No tax is perfect, but the Mayor’s proposed sugary drink tax is likely to have minimal short-term impact on the City’s overall business climate, while it helps to advance these crucial investments in education and neighborhoods.”
Theme 3: tax will fund improvement of community infrastructure through “Rebuild”	“Like I was stating, I walked around these streets in Philadelphia and it’s a shame that certain neighborhoods got better recreation centers than others, certain neighborhoods got better libraries than others, certain neighborhoods got better parks and are fully staffed than others. And how do you consider that fair? Every child deserves a quality library, a quality park and recreation center, and a quality education in the City of Philadelphia. It shouldn’t matter what part of Philadelphia you live in.”
Theme 4: we need to act now	“I wish we didn’t have to take these kind of actions, make these kind of decisions, but if we keep waiting for state and federal legislators to figure out how to better fund education, particularly early childhood education, our problems will continue to get much more worse.”
Theme 5: tax will improve health outcomes	“People consuming one or more sugary drinks per day have a 26 percent higher risk of developing diabetes, and there are no essential nutrients contained within those sugary beverages. The single largest source of added sugar in the American diet is sugary drinks.”
Theme 6: tax will fund community schools	“The creation of community schools will fill in the gaps to provide our children with the tools they need to succeed in life, from medical to dental to counseling to trades and much, much more. If the children are our future, we need to support this measure.”
Theme 7: tax will fight poverty, racism, and inequality	“It’s time that we put an end to the lies of lobbyists who have called this a grocery tax or implied that it will somehow harm the very communities it will most directly help. Similar scare mongering has been used in the past to protect the already huge profits of the corporations who are suddenly advocates for the poor when their profits are at risk.”
Theme 8: tax is not an attack on beverage industry	“The sugary drink tax will not devastate big or small business. PepsiCo’s most valuable, most profitable brand is Frito Lay, a non-beverage. The two largest unionized beverage truck driver employers in Philadelphia are Pepsi and Coke. We both know that. Their drivers deliver all products under the Pepsi and Coke label, which includes not only sugar-sweetened beverages but also water. If the soda tax results in a lower demand for soda, the beverage companies and truck drivers will still have overall demand for beverage items, and may even see an increase in demand for water.”
Theme 9: tax is not a violation of personal freedom	“Let’s reiterate that this is not a tax on consumption but on beverage producers. <b>Consumers have a choice not to buy soda</b> , and we know that choosing to do without it is a wise choice when it comes to their health.”
Theme 10: tax is a source of revenue (for initiatives other than pre-K, community schools, and Rebuild)	“I appreciate the opportunity provided by Council to testify on behalf of the Mayor’s proposal to invest in expanded high-quality pre-K, new community schools, revitalized recreation and library facilities, <b>new energy savings programs and reducing the City’s pension burden. Taken together, the investments represent a transformative investment in future growth and opportunity for the City’s children, residents and communities.</b> ”

ECE, early childhood education; pre-K, pre-kindergarten.

Note: Boldface indicates the part of the quote that relates to the highlighted theme.

overestimated, that similar taxes have not worked in the past, and that SSBs would be sold illegally. Tax opponents referenced other taxes in Philadelphia, such as the sales tax or the cigarette tax, twice as often as tax supporters ( $p < 0.005$ ).

Arguments about the economic consequences of the tax also emerged frequently on both sides of the debate (41% of protax and 47% of antitax testimonies). Antitax testimonies underscored the possible negative impacts of the tax on Philadelphia’s

businesses and economy (Antitax Theme 2). Speakers argued that the tax would impede sales in businesses that depend on SSBs for profits and result in job losses in small businesses and retailers. For example, one small-business owner said, “I have 14 years working in that store business, and this will destroy everything I built to this point, because I’m afraid if this pass [sic], it’s going to be over. So I urge you to oppose this tax and think about the businesses that are going to be lost.”



**Table 4.** Sample Quotes From Each Antitax Theme

Antitax themes	Sample quotes
Theme 1: beverage industry is not the right target	"Please understand the beverage industry is not against the children of this city or their well-being or the programs that you're trying to provide. What we are against is being singled out to foot the entire bill."
Theme 2: tax will hurt Philadelphia businesses and economy	"Small businesses, as you know, run on thin margins and rely on beverages for much of their sales and profits. The impact of a three-cent per ounce tax would be catastrophic. Customers have told me that they will be forced to layoff employees or even close."
Theme 3: tax will not be effective	"We will shop outside the city which means the small store owner as well as the big ones will suffer then what? Leave and there is more loss. This is going to be another Detroit. DO NOT LET IT HAPPEN."
Theme 4: tax will have a negative impact on individuals' finances	"The average citizen of Philadelphia deserves a break. People are being squeezed tighter and tighter and there is nothing left to squeeze from them. Now, even the things we drink are being arbitrarily made more expensive."
Theme 5: tax will hurt the beverage industry	"...as a manager at a company [Pepsi] that provides more than 700 above minimum wage paying jobs in this country, I'm afraid for the roughly 120 employees I manage."
Theme 6: tax is regressive	"Low-income citizens are a significant purchaser of sugar sweetened beverages because they're affordable. Unlike most other City residents who can drive out to the suburbs to buy their beverages if this outrageous tax is passed, the City's poor will have no choice to pay more or get it from underground markets that will surely arise throughout the City."
Theme 7: tax is a violation of personal freedom	We also do not need to pay for pre-K for everyone in the city. It's not the government's job to raise our children. Government providing for K thru 12 is enough. Parents need to be more involved with raising their children. What's next, paying for daycare from birth!"
Theme 8: taxation is a slippery slope	"In the poorer neighborhoods that other people have spoken about, a soft drink is still an affordable treat. We want to take that away? What's next? Ice cream, candy, cakes, fast food, pizza? The list is endless."
Theme 9: tax is unnecessary	"As I wrote, I have serious concerns that the Mayor's plan to expand Universal pre-K to every Philadelphia child will not achieve what it is designed to do. The Mayor's proposal would effectively reinvent the wheel. The Philadelphia School District is currently the largest provider of pre-K in the City, serving about 9,000 three and four year olds. Instead of providing additional resources for the district's nationally recognized pre-K program, the administration wants to expand the use of outside, nonunionized private providers. Providers that have often had a questionable track record and pay their employees poverty-level wages. This approach continues a disturbing trend begun in 2013 when the District started outsourcing thousands of pre-K seats away from PFT. Billed as a cost-saving measure, it expanded the low wage workforce the Mayor is seeking to double down on."

PFT, Philadelphia Federation of Teachers; pre-K, pre-kindergarten.

Protax arguments focused on potential positive economic impacts (Protax Theme 2) such as more jobs from improved education and reduced health-care costs. They also attempted to counter antitax arguments, contending that the tax would not hurt small businesses or the beverage industry. For example, a leader from the Economy League of Greater Philadelphia noted, "No tax is perfect, but the Mayor's proposed sugary drink tax is likely to have minimal short-term impact on the City's overall business climate, while it helps to advance these crucial investments in education and neighborhoods."

## DISCUSSION

This study is among the first to examine the arguments made for and against a beverage tax in public testimony to a City Council. In contrast to an analysis of public testimony regarding an SSB portion-size cap in New York City,<sup>30</sup> most submitted testimonies were in favor of the

tax. Advocates from nonprofit and community-based organizations comprised the largest proportion of protax testimony speakers. Although the Cook County tax was also supported by some grassroots, community-led organizations, education professionals did not feature prominently in the debate, whereas they were the second-largest speaker category in Philadelphia and predominately supported the tax.<sup>28</sup> All healthcare professionals who testified in Philadelphia supported the tax, but they made up a relatively small proportion of testimony speakers. Business and beverage industry representatives, as in the portion-size-limit debate,<sup>30</sup> made up most of the opposition. Similarly, in Cook County, antitax groups included industry and industry-related coalitions; although in contrast to this study's findings, the main protax coalition was health centered and was ultimately divided in their support for the tax by the inclusion of ASBs.<sup>28</sup>

The Mayor's proposal to use tax revenue to fund ECE emerged as the predominant protax theme.

Previous research indicates higher support for beverage taxes if the revenue is allocated toward health or the public good.<sup>23</sup> The decision to frame the proposal as a mechanism to benefit youth, education, and communities rather than as a nutrition intervention emerged as a major theme in interviews with key stakeholders in the Philadelphia policymaking process.<sup>20</sup> Using a nonhealth frame and earmarking revenue for programs with broad support may have contributed to the proposal's successful passage,<sup>20,31</sup> which is consistent with previous evidence that public health advocates could benefit from incorporating a wider range of frames.<sup>32,33</sup> In addition, supporting ECE may have a synergistic effect on health and health equity because findings from a simulation study suggest that expanding pre-K access could lead to further reductions in SSB consumption,<sup>34</sup> in addition to other important, lasting positive health impacts.<sup>35–37</sup>

Unlike in other studies of the debate surrounding SSB policies,<sup>23,24,26,30,32</sup> the tax's potential impact on public health did not come up often. Obesity and diabetes were rarely mentioned but appeared more often in protax testimonies than in antitax testimonies. The limited emphasis on public health matched the Mayor's narrowed focus on raising revenue for education programs and infrastructure, which has been identified as a deliberate strategy contributing to the policy's success in Philadelphia.<sup>20,38</sup> Conversely, inconsistent messaging about the purpose of the tax (revenue or public health) likely contributed to the repeal of the Cook County beverage tax.<sup>28</sup> Furthermore, others have argued that the eventual compromise to include ASBs supported Philadelphia's framing of the tax as a revenue-generating measure rather than as a health initiative, whereas taxation of ASBs along with SSBs undermined Cook County's public health argument.<sup>38</sup>

Tax opponents most frequently argued that although they supported the proposed initiatives, they believed that taxing SSBs was not the right solution because the tax would unfairly target 1 industry. This echoes the findings from the portion cap hearings, in which the most common argument against the portion-size limit was that SSBs were the wrong target.<sup>30</sup> Arguments that the tax would not work, either because people would not reduce their soda consumption (and thus the tax would have no health effect) or because people would buy SSBs outside the city, appeared in nearly half of all antitax testimonies. However, studies have estimated a 28%–38% reduction in volume sales of taxed beverages in Philadelphia 1-year post-tax implementation,<sup>39,40</sup> suggesting that beverage taxes effectively reduce SSB purchases. The policy's impact on

beverage consumption is more mixed, although these studies may be limited by small sample sizes.<sup>41–43</sup>

Arguments about the economic impacts of the tax came up on both sides of the debate. Many economic arguments that arose in Philadelphia also emerged in other cities debating similar taxes,<sup>24,25,30</sup> whereas other arguments about the use of revenue were unique to Philadelphia, consistent with Nixon and colleagues'<sup>25</sup> finding that some arguments were common across different cities considering beverage taxes and that others were unique to each location. Opponents argued that the tax would be devastating for small businesses and the beverage industry, causing reduced sales, store closures, and job losses and ultimately driving large companies out of Philadelphia. These arguments largely overlap with the themes identified in industry public comments opposing a national menu-labeling policy, such as costs, expenses, unnecessary burden, and job loss, as well as their self-depiction as “vulnerable businesses that are distinct from large chains.”<sup>32</sup> Tax proponents counterargued that the tax would not harm businesses because customers would shift to healthier, untaxed beverages. Empirical evaluations of the impact of the beverage tax in Philadelphia<sup>44,45</sup> and elsewhere<sup>46</sup> have not found adverse effects on employment; similarly, evidence from tobacco taxes indicates that tobacco taxes do not lead to overall job losses because losses in tobacco-related sectors are offset by gains in other sectors.<sup>47,48</sup>

Finally, although it proved too difficult to reliably code equity framing as a unique theme, speakers on both sides of the debate framed their arguments in terms of fairness and equity. Antitax speakers argued that consumers, not the distributors, would bear the added cost of the tax and that the tax was too broad in scope and unaffordable and would disproportionately impact low-income populations. Regressivity is commonly cited as a reason for opposition to beverage taxes,<sup>23,24,49</sup> although the inclusion of ASBs may mitigate these concerns.<sup>31</sup> As in Oakland,<sup>26</sup> protax speakers aimed to counter antitax misinformation regarding the scope of the tax, noting that the beverage tax was not a grocery tax, a characterization used by industry. In this study and in other studies,<sup>24,30,32</sup> protax advocates have argued that policies to reduce SSB consumption would benefit populations that experience greater negative health outcomes associated with SSB consumption, including low-income families and families of color,<sup>50</sup> who face disproportionately targeted marketing of SSBs.<sup>51</sup> In Philadelphia, speakers also asserted that the tax would benefit low-income families and families of color by providing equitable access to high-quality ECE and recreational facilities.

## Limitations

This content analysis had several limitations. First, this analysis only considers testimonies delivered at public City Council hearings and does not capture other ways the public can express their opinion to elected officials. Second, the analysis does not capture whether each testimony was provided by a unique speaker or whether a few individuals spoke multiple times. Although speakers were categorized by stated identity, the number of speakers belonging to specific advocacy or industry groups was not assessed. In addition, this paper examines a single beverage tax debate in 1 city with its own unique local context. Comparing these findings with public testimony from previous, unsuccessful attempts to pass a sweetened beverage tax in Philadelphia would be a fruitful area for future research. Finally, this paper provides a description of protax and antitax arguments but is not able to determine which arguments were most persuasive to policymakers.

## CONCLUSIONS

This case study of Philadelphia revealed that tax advocacy efforts focused on the revenue benefits for ECE and other initiatives rather than on the potential public health impact, whereas arguments against the tax raised concerns about unfairly targeting a single industry, negative economic impacts, and perceived ineffectiveness. These results can inform policymakers and advocates about the types of protax and antitax arguments used in Philadelphia, which are likely to resurface in other jurisdictions considering a sweetened beverage tax.

## ACKNOWLEDGMENTS

JGE and CML contributed equally to this work.

The views expressed in this paper by SNB are solely the personal views of the author.

CAR, SNB, and HL have received funding from Bloomberg Philanthropies to study beverage taxes. No other financial disclosures were reported.

## CREDIT AUTHOR STATEMENT

Jeanette G. Elstein: Conceptualization; Data curation; Formal analysis; Methodology; Validation; Writing - original draft. Caitlin M. Lowery: Data curation; Formal analysis; Validation; Visualization; Writing - original draft. Puja Sangoi: Data curation; Methodology; Validation; Writing - review and editing. Ana Peterhans: Data curation. Sara N. Bleich: Supervision; Writing - review & editing. Hannah Lawman: Writing - review & editing. Christina A. Roberto: Conceptualization, Methodology, Supervision, Writing - review & editing.

## SUPPLEMENTAL MATERIAL

Supplemental materials associated with this article can be found in the online version at <https://doi.org/10.1016/j.amepre.2021.08.023>.

## REFERENCES

1. Andreyeva T, Chaloupka FJ, Brownell KD. Estimating the potential of taxes on sugar-sweetened beverages to reduce consumption and generate revenue. *Prev Med*. 2011;52(6):413–416. <https://doi.org/10.1016/j.ypmed.2011.03.013>.
2. Brownell KD, Farley T, Willett WC, et al. The public health and economic benefits of taxing sugar-sweetened beverages [published correction appears in *N Engl J Med*. 2010;362(13):1250]. *N Engl J Med*. 2009;361(16):1599–1605. <https://doi.org/10.1056/NEJMhpr0905723>.
3. Malik VS, Hu FB. Fructose and cardiometabolic health: what the evidence from sugar-sweetened beverages tells us. *J Am Coll Cardiol*. 2015;66(14):1615–1624. <https://doi.org/10.1016/j.jacc.2015.08.025>.
4. Guthrie JF, Morton JF. Food sources of added sweeteners in the diets of Americans. *J Am Diet Assoc*. 2000;100(1):43–50. [https://doi.org/10.1016/S0002-8223\(00\)00018-3](https://doi.org/10.1016/S0002-8223(00)00018-3).
5. Bleich SN, Vercammen KA. The negative impact of sugar-sweetened beverages on children's health: an update of the literature. *BMC Obes*. 2018;5(1):6. <https://doi.org/10.1186/s40608-017-0178-9>.
6. Vartanian LR, Schwartz MB, Brownell KD. Effects of soft drink consumption on nutrition and health: a systematic review and meta-analysis. *Am J Public Health*. 2007;97(4):667–675. <https://doi.org/10.2105/AJPH.2005.083782>.
7. Malik VS, Popkin BM, Bray GA, Després JP, Willett WC, Hu FB. Sugar-sweetened beverages and risk of metabolic syndrome and type 2 diabetes: a meta-analysis. *Diabetes Care*. 2010;33(11):2477–2483. <https://doi.org/10.2337/dc10-1079>.
8. Malik VS, Popkin BM, Bray GA, Després JP, Hu FB. Sugar-sweetened beverages, obesity, type 2 diabetes mellitus, and cardiovascular disease risk. *Circulation*. 2010;121(11):1356–1364. <https://doi.org/10.1161/CIRCULATIONAHA.109.876185>.
9. Bernabé E, Vehkalahti MM, Sheiham A, Aromaa A, Suominen AL. Sugar-sweetened beverages and dental caries in adults: a 4-year prospective study. *J Dent*. 2014;42(8):952–958. <https://doi.org/10.1016/j.jdent.2014.04.011>.
10. Marshall TA, Levy SM, Broffitt B, et al. Dental caries and beverage consumption in young children. *Pediatrics*. 2003;112(3, pt 1):e184–e191. <https://doi.org/10.1542/peds.112.3.e184>.
11. Malik VS, Li Y, Pan A, et al. Long-term consumption of sugar-sweetened and artificially sweetened beverages and risk of mortality in U.S. adults. *Circulation*. 2019;139(18):2113–2125. <https://doi.org/10.1161/CIRCULATIONAHA.118.037401>.
12. Paarlberg R, Mozaffarian D, Micha R. Viewpoint: can U.S. local soda taxes continue to spread? *Food Policy*. 2017;71:1–7. <https://doi.org/10.1016/j.foodpol.2017.05.007>.
13. Cornelsen L, Smith RD. Viewpoint: Soda taxes — four questions economists need to address. *Food Policy*. 2018;74:138–142. <https://doi.org/10.1016/j.foodpol.2017.12.003>.
14. Crosbie E, Schillinger D, Schmidt LA. State preemption to prevent local taxation of sugar-sweetened beverages. *JAMA Intern Med*. 2019;179(3):291–292. <https://doi.org/10.1001/jamainternmed.2018.7770>.
15. Meyer Z. Beverage tax: Connecticut may be home to the first statewide beverage tax in the U.S. *USA Today*. February 26, 2019 <https://www.usatoday.com/story/money/2019/02/26/soda-tax-connecticut-could-be-first-state-to-implement/2943484002/>. Accessed June 2, 2020.
16. Associated Press. California proposal to tax soda pushed to next year. *Los Angeles Times*. April 23, 2019 <https://www.latimes.com/politics/la-pol-ca-soda-tax-20190423-story.html>. Accessed June 2, 2020.



17. Clarke D, Henon B. Amending title 19 of the Philadelphia code, entitled “finance, taxes and collections,” by adding a new chapter 19-4100, entitled “sugar-sweetened beverage tax,” under certain terms and conditions. Philadelphia, PA: City Council, City of Philadelphia. <https://phila.legistar.com/LegislationDetail.aspx?ID=2595907&GUID=36060B21-D7EE-4D50-93E7-8D2109D47ED1>. Published June 16, 2016. Accessed September 18, 2021.
18. Nadolny T. Soda tax passes; Philadelphia is first big city in nation to enact one. *The Philadelphia Inquirer*. June 15, 2016 [https://www.inquirer.com/philly/news/politics/20160617\\_Philadelphia\\_City\\_Council\\_to\\_vote\\_on\\_soda\\_tax.html](https://www.inquirer.com/philly/news/politics/20160617_Philadelphia_City_Council_to_vote_on_soda_tax.html). Accessed June 2, 2020.
19. Esterl M. Philadelphia City Council supports tax on sweetened drinks. *The Wall Street Journal*. June 8, 2016 <https://www.wsj.com/articles/philadelphia-city-council-approves-tax-on-sweetened-drinks-1465434716>. Accessed September 21, 2020.
20. Purtle J, Langellier B, Lê-Scherban F. A case study of the Philadelphia sugar-sweetened beverage tax policymaking process: implications for policy development and advocacy. *J Public Health Manag Pract*. 2018;24(1):4–8. <https://doi.org/10.1097/PHH.0000000000000563>.
21. Shepelavy RP. Philly Poll: Yes to soda tax. *The Philadelphia Citizen*. May 5, 2016 <https://thephiladelphiacitizen.org/beheard-philly-soda-tax-poll/>. Accessed June 2, 2020.
22. Nadolny T, Terruso J. Opposition spends big to block sugary-drinks tax. *The Philadelphia Inquirer*. May 3, 2016 [https://www.inquirer.com/philly/news/politics/20160504\\_Opposition\\_drops\\_1\\_5\\_million\\_to\\_block\\_soda\\_tax.html](https://www.inquirer.com/philly/news/politics/20160504_Opposition_drops_1_5_million_to_block_soda_tax.html). Accessed June 2, 2020.
23. Eykelenboom M, van Stralen MM, Olthof MR, et al. Political and public acceptability of a sugar-sweetened beverages tax: a mixed-method systematic review and meta-analysis. *Int J Behav Nutr Phys Act*. 2019;16(1):78. <https://doi.org/10.1186/s12966-019-0843-0>.
24. Niederdeppe J, Gollust SE, Jarlenski MP, Nathanson AM, Barry CL. News coverage of sugar-sweetened beverage taxes: pro- and antitax arguments in public discourse. *Am J Public Health*. 2013;103(6):e92–e98. <https://doi.org/10.2105/AJPH.2012.301023>.
25. Nixon L, Mejia P, Cheyne A, Dorfman L. Big Soda’s long shadow: news coverage of local proposals to tax sugar-sweetened beverages in Richmond, El Monte and telluride. *Crit Public Health*. 2015;25(3):333–347. <https://doi.org/10.1080/09581596.2014.987729>.
26. Asada Y, Taher S, Pipito A, Chriqui JF. Media coverage and framing of Oakland’s sugar-sweetened beverage tax, 2016–2019. *Am J Health Promot*. 2021;35(5):698–702. <https://doi.org/10.1177/0890117120986104>.
27. Tamir O, Cohen-Yogev T, Furman-Assaf S, Endevelt R. Taxation of sugar sweetened beverages and unhealthy foods: a qualitative study of key opinion leaders’ views. *Isr J Health Policy Res*. 2018;7(1):43. <https://doi.org/10.1186/s13584-018-0240-1>.
28. Chriqui JF, Sansone CN, Powell LM. The sweetened beverage tax in Cook County, Illinois: lessons from a failed effort. *Am J Public Health*. 2020;110(7):1009–1016. <https://doi.org/10.2105/AJPH.2020.305640>.
29. Moreland-Russell S, Barbero C, Andersen S, Geary N, Dodson EA, Brownson RC. “Hearing from all sides” how legislative testimony influences state level policy-makers in the United States. *Int J Health Policy Manag*. 2015;4(2):91–98. <https://doi.org/10.15171/ijhpm.2015.13>.
30. Roberto CA, Pomeranz JL. Public health and legal arguments in favor of a policy to cap the portion sizes of sugar-sweetened beverages. *Am J Public Health*. 2015;105(11):2183–2190. <https://doi.org/10.2105/AJPH.2015.302862>.
31. Kane RM, Malik VS. Understanding beverage taxation: perspective on the Philadelphia Beverage Tax’s novel approach. *J Public Health Res*. 2019;8(1):1466. <https://doi.org/10.4081/jphr.2019.1466>.
32. Shelton RC, Colgrove J, Lee G, Truong M, Wingood GM. Message framing in the context of the national menu-labelling policy: a comparison of public health and private industry interests. *Public Health Nutr*. 2017;20(5):814–823. <https://doi.org/10.1017/S1368980016003025>.
33. Gollust SE, Niederdeppe J, Barry CL. Framing the consequences of childhood obesity to increase public support for obesity prevention policy. *Am J Public Health*. 2013;103(11):e96–e102. <https://doi.org/10.2105/AJPH.2013.301271>.
34. Langellier BA, Lê-Scherban F, Purtle J. Funding quality pre-kindergarten slots with Philadelphia’s new ‘sugary drink tax’: simulating effects of using an excise tax to address a social determinant of health. *Public Health Nutr*. 2017;20(13):2450–2458. <https://doi.org/10.1017/S1368980017001756>.
35. Morrissey T. *The effects of early care and education on children’s health*. Bethesda, MD: Health Affairs Health Policy Brief, 2019. <https://doi.org/10.1377/hpb20190325.519221>.
36. Lumeng JC, Kaciroti N, Sturza J, et al. Changes in body mass index associated with head start participation. *Pediatrics*. 2015;135(2):e449–e456. <https://doi.org/10.1542/peds.2014-1725>.
37. Hahn RA, Barnett WS, Knopf JA, et al. Early childhood education to promote health equity: a Community Guide systematic review. *J Public Health Manag Pract*. 2016;22(5):E1–E8. <https://doi.org/10.1097/PHH.0000000000000378>.
38. Hagenaars LL, Jevdjic M, Jeurissen PPT, Klazinga NS. Six lessons from introducing sweetened beverage taxes in Berkeley, Cook County, and Philadelphia: a case study comparison in agenda setting and decision making. *Health Policy*. 2020;124(9):932–942. <https://doi.org/10.1016/j.healthpol.2020.06.002>.
39. Roberto CA, Lawman HG, LeVasseur MT, et al. Association of a beverage tax on sugar-sweetened and artificially sweetened beverages with changes in beverage prices and sales at chain retailers in a large urban setting [published correction appears in *JAMA*. 2019;322(10):983] [published correction appears in *JAMA*. 2020;324(11):1111]. *JAMA*. 2019;321(18):1799–1810. <https://doi.org/10.1001/jama.2019.4249>.
40. Cawley J, Frisvold D, Jones D. The impact of sugar-sweetened beverage taxes on purchases: evidence from four city-level taxes in the United States. *Health Econ*. 2020;29(10):1289–1306. <https://doi.org/10.1002/hec.4141>.
41. Zhong Y, Auchincloss AH, Lee BK, Kanter GP. The short-term impacts of the Philadelphia beverage tax on beverage consumption. *Am J Prev Med*. 2018;55(1):26–34. <https://doi.org/10.1016/j.amepre.2018.02.017>.
42. Zhong Y, Auchincloss AH, Lee BK, McKenna RM, Langellier BA. Sugar-sweetened and diet beverage consumption in Philadelphia one year after the beverage tax. *Int J Environ Res Public Health*. 2020;17(4):1336. <https://doi.org/10.3390/ijerph17041336>.
43. Cawley J, Frisvold D, Hill A, Jones D. The impact of the Philadelphia beverage tax on purchases and consumption by adults and children. *J Health Econ*. 2019;67:102225. <https://doi.org/10.1016/j.jhealeco.2019.102225>.
44. Lawman HG, Bleich SN, Yan J, LeVasseur MT, Mitra N, Roberto CA. Unemployment claims in Philadelphia one year after implementation of the sweetened beverage tax. *PLoS One*. 2019;14(3):e0213218. <https://doi.org/10.1371/journal.pone.0213218>.
45. Marinello S, Leider J, Pugach O, Powell LM. The impact of the Philadelphia beverage tax on employment: a synthetic control analysis. *Econ Hum Biol*. 2021;40:100939. <https://doi.org/10.1016/j.ehb.2020.100939>.
46. Guerrero-López CM, Molina M, Colchero MA. Employment changes associated with the introduction of taxes on sugar-sweetened beverages and nonessential energy-dense food in Mexico. *Prev Med*. 2017;105(suppl):S43–S49. <https://doi.org/10.1016/j.ypmed.2017.09.001>.
47. Warner KE, Fulton GA, Nicolas P, Grimes DR. Employment implications of declining tobacco product sales for the regional economies of the United States. *JAMA*. 1996;275(16):1241–1246. <https://doi.org/10.1001/jama.1996.03530400029034>.
48. Warner KE. The economics of tobacco: myths and realities. *Tob Control*. 2000;9(1):78–89. <https://doi.org/10.1136/tc.9.1.78>.
49. Barry CL, Niederdeppe J, Gollust SE. Taxes on sugar-sweetened beverages: results from a 2011 national public opinion survey. *Am J Prev Med*. 2013;44(2):158–163. <https://doi.org/10.1016/j.amepre.2012.09.065>.

50. Beckles GL, Chou CF. Disparities in the prevalence of diagnosed diabetes - United States, 1999-2002 and 2011-2014. *MMWR Morb Mortal Wkly Rep*. 2016;65(45):1265–1269. <https://doi.org/10.15585/mmwr.mm6545a4>.
51. Powell LM, Wada R, Kumanyika SK. Racial/ethnic and income disparities in child and adolescent exposure to food and beverage television ads across the U.S. media markets. *Health Place*. 2014;29:124–131. <https://doi.org/10.1016/j.healthplace.2014.06.006>.