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Is the Association Between Beverage Taxes and Reductions in Sales Driven by Communication of Health Consequences in Addition to Price Increases?

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On August 2, 2017, Cook County, Illinois, became the sixth US jurisdiction to implement a sweetened beverage tax. Four months later, the county commissioners repealed the tax, prompted by considerable political backlash, funded in part by the American Beverage Assocation.[1] The Cook County tax is the only US beverage tax to be rescinded, providing a unique opportunity to learn whether tax adoption and implementation was associated with lasting outcomes independent of increasing the price of taxed beverages. The study by Powell and Leider[2] in this issue of *JAMA Network Open* addresses this question and adds further evidence that taxes are associated with a reduction in purchases of unhealthy drinks.[3] Using an interrupted times series design, the authors found that a tax of 1 cent/oz on sugar-sweetened and artificially sweetened beverages was associated with an increase of 1.13 cents/oz in taxed beverage prices (a 30% increase) in Cook County compared with St Louis County and city and a 25.7% decrease in taxed beverage sales[2] (21% after adjusting for consumers crossing the county border to avoid the tax[4]). They further found that beverage prices and sales immediately reverted to pretax levels after the tax's repeal.

While the Cook County tax reduced sweetened beverage sales, it differed from other taxes across the country in how it was explained to the public and the lack of a robust, grassroots protax advocacy campaign.[1] Tax sponsors and the media primarily described the tax as a way to generate revenue for a projected $200-million budget shortfall.[1] In contrast, tax advocates in Berkeley and San Francisco, California, Seattle, Washington, and Boulder, Colorado, launched communications campaigns alongside the introduction of their taxes to educate the public about the health harms associated with sweetened beverages and garner support for these taxes. For example, in Berkeley, the protax group Berkeley vs Big Soda used social media, opinion articles, and public events to discuss the health harms associated with sugary drinks and the beverage industry's deceptive marketing practices. Legislation in these cities noted that the intent of the tax, at least in part, was to address health conditions associated with sugary drinks and/or established a community advisory board to make recommendations about how to use revenues to reduce sweetened beverage consumption and improve health.

The lack of a protax communications campaign focused on health in Cook County meant that most public discussion and media coverage was about revenue generation, not health.[1] Therefore, the tax's repeal and subsequent reversal of price increases offered an opportunity to study whether tax adoption and implementation can exert lasting nonprice effects on beverage purchases, even when taxes are not accompanied by a robust public discussion of sweetened beverages' harms. One hypothesis is that taxes produce lasting effects if government taxation of sweetened beverages sends a signal to consumers that these products are bad. On the one hand, consumers might perceive this signal given the history of so-called sin taxes on products such as tobacco and alcohol. On the other hand, many other goods are taxed (eg, Illinois imposes sales taxes on restaurant food, photo processing, and telephone calling cards, among other items). It is unlikely that consumers interpret those taxes as signaling that those products are bad or that the government wants people to buy less of them. In the case of the Cook County sweetened beverage tax, Powell and Leider found no evidence of persistent signaling effects.[2] Consumers bought fewer sweetened beverages in the face of large price increases, and when those went away, they bought more again.

What is not yet fully understood is the extent to which taxes and adoption campaigns that focus on health and the resulting media attention might influence changes in consumer behavior and perception, independent of tax price effects. A small number of studies have examined this question.[5,6] Soda sales on the University of California, Berkeley, campus decreased immediately following the adoption of Berkeley's tax, well before tax implementation, suggesting that the reduction could be attributable to the significant media coverage and protax campaign efforts, although this analysis lacked a control site to account for secular trends.[5] In South Africa, a protax mass media campaign highlighted the health harms of sugary drinks. The campaign appeared to increase consumers' perceptions that these drinks are unhealthy as well as their intentions to reduce sugary drink consumption and avoid serving them to their children.[6] Another study found that media coverage of tobacco's health harms increases around the time taxes are introduced and that this media coverage accounts for a meaningful portion of the decrease in pregnant women's smoking after taxes are implemented.[7]

Studies that tease apart the roles of tax-related price increases and health framing and messaging to determine whether the latter amplify changes associated with taxes would be valuable. Such research could inform the degree to which tax advocates should describe taxes as health measures, include health in tax adoption communications campaigns, and implement ongoing communications campaigns to increase awareness of the health harms associated with overconsuming sweetened beverages. Studies could examine how taxed beverage sales and consumption change from the period before the introduction of the tax to the period between introduction and implementation, when the health consequences of sweetened beverages are often prominent in public discourse but prices have not yet increased. If reductions are observed before prices increase, that would suggest that messages about sweetened beverages could be driving the observed changes. Another approach would be to examine changes in beverage sales or consumption in jurisdictions where taxes (or other sweetened beverage policies) were not adopted but in which vigorous adoption campaigns and/or media discussions occurred. For example, sugary drink market share declined in New York City after the adoption of a portion cap rule for sugary drinks (which garnered significant media attention), even though the rule was never implemented due to legal challenges.[8] Given concerns that beverage taxes could be regressive,[3] it would be especially valuable to understand the degree to which health communications campaigns in lower-income communities might reduce demand for sweetened beverages among these consumers, thereby decreasing their tax burden and improving health. Such campaigns should emphasize the targeted marketing of taxed beverages, investment of revenues, and the disproportionate burden of chronic disease in these communities.

The lack of sustained behavior change after the repeal of Cook County's tax suggests a missed opportunity from not launching a health-related tax adoption campaign or using revenues to support public communications efforts about sweetened beverages. However, health-focused taxes may not be prudent in all political contexts. For example, in Philadelphia an early attempt to pass a beverage tax framed the tax as a public health measure and failed. The tax passed after it was described as raising revenue to support the expansion of prekindergarten access, a Community Schools program, and community infrastructure investments. Polling has shown that support for beverage taxes increases when they are explained as a source of revenue for investing in communities most impacted by the health consequences of sweetened beverages and other inequities.

Existing evidence on sweetened beverage taxes suggests they are win-win policies. Beverage taxes reduce purchases of unhealthy drinks by increasing prices and generate revenue that can be reinvested in communities most impacted by health inequities. Furthermore, the already strong association between taxes and sweetened beverage sales may be increased by accompanying their introduction and implementation with communications campaigns that focus on the health consequences of sweetened beverage marketing and consumption. Even if taxes in and of themselves do not signal that sweetened drinks are unhealthy, as the article by Powell and Leider suggests,[2] they are a powerful strategy for addressing diet-related disease.

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