

Mass Media Campaign to Reduce Consumption of Sugar-Sweetened Beverages in a Rural Area of the United States

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Objectives. To evaluate a mass media campaign to reduce the consumption of sugar-sweetened beverages (SSBs).

Methods. We disseminated messages emphasizing the health risks of SSBs through television, digital channels, and local organizations over 15 weeks in 2015–2016 in the Tri-Cities region of northeast Tennessee, southwest Virginia, and southeast Kentucky. We evaluated the campaign with pre- and post-telephone surveys of adults aged 18 to 45 years in the intervention area and by examining changes in beverage sales in the intervention and a matched comparison area in western Virginia.

Results. Fifty-four percent of postcampaign respondents recalled seeing a campaign advertisement. After the campaign, 53% of respondents believed SSBs were a cause of heart disease, and respondents were more likely postcampaign to consider SSBs a “big cause of diabetes” (75% vs 60%; $P < .001$). Compared with 12 months before, after the start of the campaign, SSB sales decreased 3.4%, including a 4.1% decrease in soda sales in the intervention area relative to the comparison area ($P < .01$).

Conclusions. This brief media campaign on SSBs was followed by intended changes in beliefs and consumption.

Public Health Implications. Additional media campaigns on SSBs should be attempted and evaluated. (*Am J Public Health.* 2017;107:989–995. doi:10.2105/AJPH.2017.303750)

 See also Falbe and Madsen, p. 835, and Galea and Vaughan, p. 841.

Much of Americans' health is determined by a few behaviors, particularly smoking, physical activity, and choices about diet.¹ The need to reach many millions of people makes individualized approaches to behavior change impractical. Mass media campaigns have been used to alter the behaviors of entire populations, but these campaigns have been used far more for some behaviors than for others. There is strong evidence that mass media campaigns can be successful in promoting smoking cessation; however, the evidence is not as strong that these campaigns can affect diet at the population level.² In part this may be because dietary behavior, which involves choices among thousands of products, is more complex than is smoking. Campaigns that are very specific about a single dietary change are more likely to be successful.²

In recent years, sugar-sweetened beverages (SSBs) have become a target of public health efforts because they are linked to obesity,³ type 2 diabetes,⁴ and cardiovascular disease.⁵ Several localities have mounted media campaigns specifically to reduce the consumption of SSBs.^{6–8} For 2 localities, evaluations demonstrated changes in beliefs or intentions but not self-reported consumption.^{6,7} For a third, mass media campaigns were a prominent element in a multipronged, multiyear

strategy that was followed by substantial reductions in self-reported consumption.⁸ However, these evaluations did not include objective measures of beverage consumption and did not measure simultaneous changes in control localities, so it is difficult to determine the causative role of the media campaigns.

We evaluated a multichannel mass media campaign to reduce SSB consumption in a rural area with high rates of SSB consumption. The evaluation involved both subjective and objective measures taken before and after the campaign in the intervention area and a matched comparison area.

METHODS

The intervention area was the Tri-Cities region, a rural, mountainous, 17-county area mostly in northeast Tennessee but also including portions of southwest Virginia and southeast Kentucky. This area encompassed Kingsport, Tennessee (2010 population: 48 205); Johnson City, Tennessee (population: 63 152); and Bristol, Tennessee and Virginia (population: 44 537). The area's population (781 474) is predominantly White and has lower incomes than those of the United States as a whole (48% locally vs 34% nationally with household incomes below \$35 000/year). Among 18 states asking about SSB consumption on statewide surveys in 2012, Tennessee's consumption was the

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second highest, with 39.2% of adults reporting consuming 1 or more SSBs per day.⁹

To compare changes in beverage sales, we designated a priori a 4-county comparison area in western Virginia that is similar to the intervention area in geography, population density, and demographics (Table A, available as a supplement to the online version of this article at <http://www.ajph.org>) but that is approximately 150 miles from the intervention area and in a separate television market.

Campaign Development and Implementation

The audience for the campaign was adults aged 18 to 45 years, and we focused particularly on those aged 18 to 29 years—the adults with the highest consumption of SSBs.¹⁰ Focus groups suggested that adults in the region were aware of the health risks of SSBs but that they did not feel that these risks applied to them. We worked with an advertising agency to develop several initial message concepts designed to capture viewers' attention and raise their perception of personal risk, and we tested 3 concepts with a formative online survey of 107 adults aged 18 to 45 years. We selected 1 concept for the campaign because significantly more respondents reported that the advertisement made them worried about their personal sugary drink consumption and more (43%) reported that they were “very likely” to reduce their consumption after seeing the advertisement.

The core image used in the campaign was a man holding a bottle of soda in 1 hand and a pack of cigarettes in the other. The man compares the health risks of SSBs to cigarettes, citing heart disease, cancer, and tooth loss. The 2 video versions of the concept end with a glass being filled with water behind a statistic and the phrase “Live Sugarfreed.” An audio version paralleled the videos. Some static (i.e., nonvideo) versions of the concept included an image of the man holding the sugary drink and the cigarettes, and others simply showed a glass of water with the Live Sugarfreed tagline. Supporting the campaign was a Web site (livesugarfreed.org) that included the advertisements, fact sheets, and ways for organizations to participate in the campaign. Although all types of

SSBs were identified as risky in Web site materials, carbonated beverages (sodas) received by far the most emphasis in the advertisements.

We disseminated media messages through multiple channels for 15 weeks, from September 28, 2015, through January 7, 2016. The video advertisements appeared on broadcast and cable television in the Tri-Cities designated market area and on the digital channels YouTube and Hulu as “preroll” (in which viewers are forced to view advertisements before seeing a video they select). The audio advertisements appeared on the Internet radio platform Pandora, which displays static versions of the advertisements on users' digital displays while the audio advertisement plays. Static advertisements were also distributed on Facebook (in the newsfeed and the right-hand rail) and on the Web site Hulu. We estimated the number of “impressions” (the total number of person-views for each media channel) for broadcast and cable television channels from ratings surveys and counted impressions for digital channels by the number of advertisements served or views completed.

We reinforced this media placement by asking local businesses and nonprofit organizations to become involved in the campaign by either adopting Live Sugarfreed pledges or distributing campaign messages to their employees or members. We gave organizations a Live Sugarfreed bronze designation if they pledged to make water available to employees wherever other beverages were available, a silver designation if they took active steps to discourage sugary drink consumption among their employees and members, and a gold designation if they stopped selling or distributing SSBs. We also encouraged organizations at all pledge levels to post messages in highly trafficked areas about the benefits of water.

Evaluation

We evaluated the impact of the campaign by (1) administering telephone surveys in the intervention area that measured campaign recall, reaction, beliefs, and self-reported purchases and consumption; and (2) collecting data on SSB sales in the intervention and comparison areas before, during, and after the intervention.

We surveyed persons aged 18 to 45 years in the intervention region over mobile phones. We drew the samples in equal numbers from a targeted mobile phone database and a random digit dial list. The targeted database included households that had at least 1 member known to be aged 18 to 45 years and residing in counties in the region; we excluded numbers registered in the federal Do Not Call Registry. We purchased the sample from the ASDE Survey Sampler. Of the people reached by telephone who we found to be eligible (3474 before and 2443 after the campaign), 1031 completed the interview before and 1000 after the campaign. Using the American Association for Public Opinion Research formula for response rate 4 (RR4),¹¹ which calculates the response as a proportion of all eligible and likely eligible units in the sampling frame, we found that the precampaign survey had a response rate (RR4) of 12.9% and the postcampaign survey had a response rate (RR4) of 18.5%.

A survey unit at East Tennessee State University administered the surveys. Surveying took place immediately before the campaign launch from July 13 to August 4, 2015, and again immediately after the campaign ended from January 19 to March 3, 2016. The questionnaires included 37 questions (before) and 47 questions (after) and required approximately 10 minutes to complete. All respondents before and after the campaign were asked identically worded questions about their SSB-related beliefs, purchases in the previous week, and consumption in the previous 30 days. We measured beliefs by asking how strongly respondents agreed with several statements about SSB risks. We measured self-reported consumption by the number of servings consumed on average per day, week, or month.

In the postcampaign surveys, we tested respondent recall with 3 questions: (1) whether respondents had seen any advertisement on television, radio, or the Internet discouraging viewers from drinking SSBs (general recall), (2) whether they had seen an advertisement that compared SSBs to cigarettes (partially aided recall), and (3) whether they had seen our campaign advertisement as described (aided recall). We asked respondents with aided recall a series of

questions about their reactions to the campaign and actions as a result.

We purchased data on sales of beverages from the market data firm IRI, which in turn purchased the data from 316 stores in the intervention and control areas. Beverages included caloric soda, fruit juice (including 100% fruit juice), sweetened fruit-flavored drinks, sports drinks, energy drinks, and bottled tea or coffee; in addition, we purchased data on artificially sweetened diet soda. Stores providing data were part of regional or national chains and included supermarkets, department stores (e.g., Walmart), superstores that sell both general merchandise and groceries (e.g., Super Kmart), general merchandise dollar stores, pharmacies, and convenience stores.

These 316 stores reporting data represented approximately 40% of the stores in the intervention and control areas identified in the 2014 US Economic Census in their respective categories (with the exception of combination gasoline and convenience stores, for which they represented 4% of stores); however, they likely represented a larger market share of beverage sales, because the

chain stores tended to be larger stores. Data on unit sales (e.g., the number of bottles or 12-packs) of beverages of different container sizes were provided by beverage type and county for an initial 2-week interval and subsequent 4-week intervals for the 26-week period from October 4, 2015 (1 week after the campaign began), through April 3, 2016 (3 months after the campaign ended), as well as a matched period 12 months earlier.

Statistical Analysis

We compared the results of the telephone surveys using the 2-tailed independent sample *t* test.

We aggregated beverage sales (in ounces) in each county and divided them by the counties' population estimates in 2014 and 2015 to create a per capita county-level outcome measure for each time interval before and after the start of the campaign. The key analytic question was whether SSB sales changed differently from before to during and after the campaign in the intervention area than they did in the control area. To test for this, we used linear mixed models that adjusted for both temporal variations in sales

across all counties with indicator variables for the time intervals and for the use of repeated measures on each of the 21 counties (17 intervention counties and 4 comparison counties) with random intercepts. For these models, we doubled the initial 2-week sales values for comparability with subsequent 4-week sales values. We conducted this analysis for 3 types of SSBs (soda, fruit juices and fruit drinks, and sports and energy drinks), SSBs as a group, and artificially sweetened diet soda. For descriptive statistics we used SPSS version 23.0 (IBM, Armonk, NY), and for linear mixed models we used Stata release 14 (StataCorp LP, College Station, TX).

RESULTS

Overall, the campaign delivered nearly 19 million video impressions, 2.3 million audio impressions, and 5.6 million static impressions (Table 1). Among those aged 18 to 49 years, there were 19.2 video, 7.3 audio, and 17.5 static impressions per capita. The broadcast and cable television components of this delivery combined to deliver 1649 gross ratings points (GRPs) over the 15-week

TABLE 1—Summary of Message Placement, Population Exposure, and Placement Costs: Tri-Cities Region of Northeast Tennessee, Southwest Virginia, and Southeast Kentucky, 2015

Message Form and Channel	Total Impressions	Impressions per Capita	Placement Cost, \$	Cost per 1000 Impressions, \$	Impressions, Aged 18–49 Years	Impressions per Capita, Aged 18–49 Years	Cost per 1000 Impressions, Aged 18–49 Years, \$
Video							
Broadcast television	16 682 000	21.3	68 630	4.11	4 415 000	13.84	15.54
Cable television	1 428 000	1.8	29 765	20.84	844 000	2.65	35.27
Internet: Hulu	520 185	0.7	16 200 ^a	31.14	520 185	1.63	31.14
Internet: YouTube	328 230 ^b	0.4	42 000	127.96	328 230 ^b	1.03	127.96
Subtotal video	18 958 415	24.3	156 595	8.26	6 107 415	19.15	25.64
Audio							
Pandora	2 324 000	3.0	31 375 ^a	13.50	2 324 000	7.29	13.50
Subtotal audio	2 324 000	3.0	31 375	13.50	2 324 000	7.29	13.50
Static							
Pandora	2 324 000	3.0	3 486 ^a	1.50	2 324 000	7.29	1.50
Facebook	3 246 263 ^c	4.2	13 694	4.22	3 246 261	10.18	4.22
Hulu	23 107	0.0	1 800 ^a	77.90	23 107	0.07	77.90
Subtotal static	5 593 370	7.2	18 980	3.39	5 593 368	17.54	3.39
Total	26 875 785	34.4	206 950	7.70	14 024 783	43.98	14.76

^aFor Hulu and Pandora, costs were for combined video and audio and static advertisement placement; 90% of costs were assigned to video and audio, 10% to static.

^bDoes not include 1 359 471 partial views in which the viewer canceled video before completion.

^cIncludes 2 606 141 right-hand rail, 259 584 newsfeed, and 380 538 newsfeed-promoted posts.

campaign, where each GRP represents 1% of the target audience viewing an advertisement on average 1 time. The cost of purchasing this media placement for the entire campaign was \$206 950.

The Live Sugarfree Web site received 11 540 unique visitors during the campaign. As of April 2016 we received pledges to adopt healthier beverage policies from 218 organizations (64 at the gold level, 59 at the silver level, and 95 at the bronze level), representing approximately 45 476 employees. Key supporters were the 2 hospital systems in the region, which together had 16 638 employees. Sixteen organizations with more than 17 000 employees sent out a Live Sugarfree campaign message to all their employees by e-mail, and 1 employer with

approximately 10 000 employees and contractors in the region disseminated messages through its corporate video displays.

Before the campaign, we completed 1031 mobile phone surveys, and afterward we completed 1000 surveys of adults aged 18 to 45 years in the intervention region. The survey samples before and after the campaign were similar in distribution by age (44% vs 40% younger than 30 years) and gender (55% men vs 54% women). Fifty-one percent of respondents after the campaign (vs 6% before; $P < .001$) recalled seeing an advertisement that compared cigarettes to soda, and 54% recalled seeing the specific advertisement shown by the campaign when it was described to them (Table 2). Among the 536 who recalled the specific advertisement,

63% considered the advertisement “believable,” 62% considered it “important,” and 28% spoke to someone about it.

Twenty-seven percent claimed that they had already reduced their consumption of SSBs and 64% claimed that they would do so in the future.

The surveys showed significant differences in beliefs about SSBs from before to after the campaign (Table 2), with a higher proportion of respondents afterward who agreed that SSBs were a “big cause of weight gain” (from 70% to 82%; $P < .001$) and a “big cause of diabetes” (from 60% to 75%; $P < .001$). In the postcampaign surveys, 53% of respondents agreed that SSBs increased the risk of heart disease, 29% agreed that they increased the risk of cancer, and 72% agreed that they increased the risk of losing teeth—questions that were not asked in the pre-campaign survey. After the campaign, those who recalled seeing advertisements were more likely than were those who did not recall seeing them to recognize most of these risks.

There were no statistically significant differences from before to after the campaign or after the campaign between those who did and did not recall seeing the advertisement in self-reported purchases of SSBs. Survey respondents after the campaign were unexpectedly more likely to report daily consumption of SSBs than were respondents before the campaign (52% vs 44%; $P < .001$); however, the postcampaign respondents who recalled seeing the campaign were less likely to report daily consumption than were those who did not (49% vs 57%; $P = .01$).

Changes in sales of SSBs and diet soda in the intervention and comparison areas are shown in Figure 1 and Table 3. Comparing a 26-week period the year before the campaign with the 26-week period after the start of the campaign, sales of all SSBs decreased 2.0% in the intervention area (from 1638 to 1605 oz/capita) but increased 0.9% in the comparison area (from 1517 to 1530 oz/capita). This change was driven by soda, for which sales fell 2.4% in the intervention area and increased 1.1% in the comparison area; for all other SSBs, sales moved in parallel. Sales of diet soda fell in both the intervention and comparison areas.

The results of the linear mixed regression models are shown in Table 3. For all SSBs combined, the area parameter was not statistically significantly different from zero, indicating that the intervention and

TABLE 2—Results of Telephone Surveys Before and After Campaign: Tri-Cities of Northeast Tennessee, Southwest Virginia, and Southeast Kentucky, 2015

Survey Finding	Before Campaign, % All	After Campaign, %			P, Before vs After	P, Recall vs No Recall
		All	Recall	No Recall		
Sample size	1031	1000	536	464	...	...
Recall						
Saw advertisement that encouraged consuming fewer sugary drinks (general recall)	25	49	...	...	<.001	...
Saw advertisement that compared sugary drinks to cigarettes (partially aided recall)	6	51	...	...	<.001	...
Recalled seeing advertisement when described (aided recall)	NA	54	...	...	...	...
Reaction to advertisement						
“Believable” (4 or 5 on 1-5 scale)	NA	NA	63	...	...	...
“Important” (4 or 5 on 1-5 scale)	NA	NA	62	...	...	...
Talked to someone about advertisement	NA	NA	28	...	...	...
Started drinking fewer sugary drinks	NA	NA	27	...	...	...
Giving fewer sugary drinks to children	NA	NA	36	...	...	...
Will drink fewer sugary drinks in the future	NA	NA	64	...	...	...
Beliefs: “strongly agree” that sugary drinks						
Are a big cause of weight gain	70	82	86	78	<.001	.002
Are a big cause of diabetes	60	75	77	72	<.001	.11
Increase risk of heart disease	NA	53	56	50	...	.05
Increase risk of cancer	NA	29	33	25	...	.003
Increase risk of losing teeth	NA	72	74	70	...	.16
Purchases						
In past wk at store	57	55	53	57	.36	.2
In past wk at restaurant	47	44	42	45	.17	.34
Consumption is ≥ 1 drink/d	44	52	49	57	<.001	.01

Note. NA = question not asked.

comparison areas had similar sales outside the intervention effects. However, the area \times period parameter indicates that the change in sales from before to after the start of the campaign was statistically significantly different ($P < .01$) in the intervention counties compared with the comparison counties after controlling for monthly variations in sales and repeated observations from each county. On average across all 4-week intervals, sales of SSBs decreased 8.6 ounces per capita in the intervention counties relative to the comparison counties; this is a 3.4% reduction from the average per capita interval sales before the campaign of 252 ounces. This change was driven almost entirely by soda, for which there was a 4.1% relative decrease in sales. No changes in sales of other SSBs or of diet soda reached statistical significance.

DISCUSSION

In this low-income, rural area with high rates of obesity and high consumption of

SSBs, a brief multichannel media campaign was followed by changes in beliefs about and reduced sales of SSBs. Although our findings should be interpreted with caution, they suggest that the campaign had the intended effect of reducing population-level consumption of SSBs.

Advertising to influence the diet of entire populations is neither new nor unusual. According to data provided by Advertising Age, PepsiCo, Coca-Cola, and Dr. Pepper and Snapple spent \$2.2 billion on advertising in the United States in 2013.¹² In effect, these companies place huge bets that mass media campaigns will increase beverage consumption. If we accept that advertising of SSBs is effective, the question for public health practitioners is whether advertising against SSBs is also effective or, more precisely, whether counteradvertising with an expenditure far less than that of the beverage industry can lessen the impact of prosugary drink advertising. Our study suggests that it may.

Media campaigns have been used to address various dietary factors, such as consumption of fat, fruits and vegetables, and salt.^{2,13} Evaluations of these campaigns have often been limited by uncontrolled designs and subjective outcome measures, but available results are nonetheless encouraging. A review by Wakefield et al. concluded that existing research provided “moderate evidence of benefit when specific healthy food choices [were] promoted.”^{2(p1263)} For example, a multiyear Australian campaign focused on fruits and vegetables increased consumption of these items,¹⁴ and a campaign in the United Kingdom succeeded in reducing the addition of salt to foods before eating.¹⁵

One key feature of media campaigns that does not receive enough attention is the amount of exposure of the population. One group of authors concluded that to achieve population-level smoking cessation, campaigns must purchase at least 1200 GRPs per quarter or 4800 GRPs per year.¹⁶ In the early

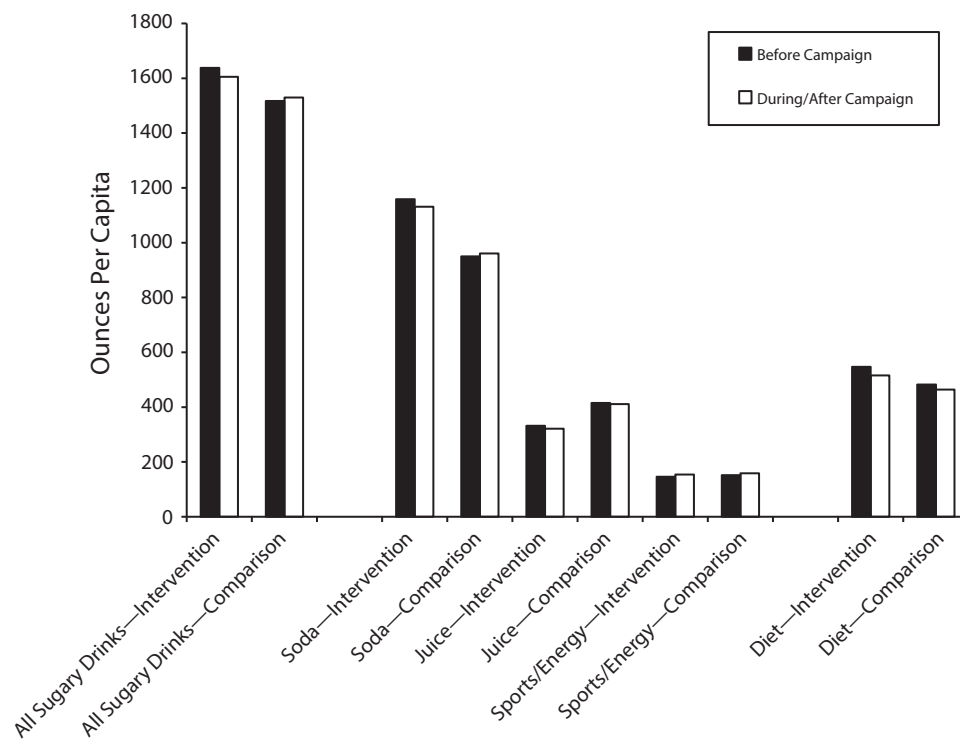


FIGURE 1—Per Capita Sales of Sweetened Beverages in Intervention and Comparison Areas for the 26-Week Period During and After the Campaign and the Matched Period 12 Months Earlier: Tri-Cities Region of Northeast Tennessee, Southwest Virginia, and Southeast Kentucky, 2014–2016

TABLE 3—Sales of Sweetened Beverages and Parameters of Linear Mixed-Effect Regression Models: Tri-Cities of Northeast Tennessee, Southwest Virginia, and Southeast Kentucky, 2014–2016

Sales ^a	All Sugar-Sweetened Beverages ^b	Sodas ^c	Fruit Drinks ^d	Sports and Energy Drinks ^e	Artificially Sweetened Beverages
Intervention					
Before	1638	1159	332	146	547
During and after	1605	1131	321	154	516
Change, %	-2.0	-2.4	-3.3	5.5	-5.7
Comparison					
Before	1517	950	415	152	483
During and after	1530	960	411	159	464
Change, %	0.9	1.1	-1.1	4.4	-3.8
Model parameters					
Area ^f	-41.7	-8.8	-25.4*	-7.5	-11.6
Area × period ^g	-8.6**	-7.3**	-1.0	-0.3	-0.8

Note. Models include random intercepts for each county and an indicator variable for each of the 14 data collection periods.

^aSales in oz/capita over 26-wk period.

^bIncludes soda, fruit juice, and sweetened fruit-flavored drinks, sports drinks, energy drinks, and bottled tea or coffee. Does not include artificially sweetened drinks.

^cCarbonated sugar-sweetened beverages (such as Coca-Cola).

^dFruit juice and noncarbonated fruit-flavored sugar-sweetened beverages (such as lemonade and fruit punch).

^eSugar-sweetened beverages marketed for sports (such as Gatorade) and as “energy” producing (such as Red Bull).

^fIntervention vs comparison areas.

^gInteraction term for intervention or comparison area and pre–post intervention, expressed as oz/capita/4-wk interval.

P* < .05; *P* < .01.

2000s, antiobesity mass media messages ran with a frequency one tenth or one twentieth that of antismoking messages and did not meet this exposure threshold.¹⁷ Our campaign just met this threshold, with 1649 television GRPs supplemented by digital video, audio, and static impressions over 15 weeks.

Limitations and Strengths

Limitations of this study bear mentioning. First, the evidence on beliefs regarding SSBs and self-reported consumption came from repeated cross-sectional telephone surveys, with low response rates. The low response rates could have biased survey results toward more or less favorable beliefs regarding SSBs. However, it seems less likely that they would have biased changes over time.

Second, although we observed a relative decrease in sales of SSBs in the intervention area, we found an unexpected increase in self-reported consumption in the surveys. Although it is difficult to fully explain these divergent findings, we believe that the objective sales data are a better measure of changes in consumption than are the subjective self-reports of consumption, especially because self-report surveys of dietary intake are known to be remarkably inaccurate.^{18,19} Furthermore, the increase in self-reported consumption in the survey sample may be partially negated by the finding that persons who recalled seeing the campaign had a significantly lower self-reported consumption than did those who did not.

Third, the sales data were not available from every retail outlet; in particular, non-chain convenience stores and restaurants were

not included in our data. Nonetheless, our data represented a very large number and wide variety of stores, and there were no apparent reasons that, aside from the media campaign, beverage sales during the project would decrease preferentially in the intervention area.

It is also worth mentioning the unusual strengths of this study. Most important, the primary outcome measure (sales) was objective and the design was controlled, with measurements before and after the campaign in both an intervention area and a well-matched comparison area. In addition, in many ways the overall results were as one would predict: more negative beliefs toward SSBs, intention to reduce consumption of SSBs, and a relative decrease in sugary drink sales. Furthermore, because the media campaign emphasized soda rather than other SSBs such as fruit drinks or sports drinks, one would expect that the decrease in consumption might be limited to soda, and this was found in the sales data.

Public Health Implications

The epidemics of obesity and diabetes, and the connection of these health problems to SSBs, create a need for ways to reduce consumption of SSBs not just in individuals but also across the entire population. Although the 3% to 4% relative decrease in sales of SSBs that followed this media campaign may seem small, it may have public health importance because of its population-wide reach. The sales decrease is close to the 6% decrease in sales of SSBs seen in Mexico after implementation of a 10% soda tax.²⁰ For context, a group of researchers estimated that a 1 cent per ounce soda tax in the United States would reduce consumption by 20%, which over 10 years would lead to 871 000 quality-adjusted life-years gained and \$23.6 billion in health care cost savings.²¹ Furthermore, the change in this project occurred after a campaign that cost less than \$300 000 for media distribution, including local organizing efforts. This cost of less than \$0.50 per capita is greater than is the cost of policy-based interventions such as a soda tax, but it is within the reach of state and local health departments, some philanthropic foundations, and nonprofit hospitals. For example, nonprofit hospitals in Wisconsin

reported just over \$1 billion in “community benefit” expenditures in 2009, including \$47 million in “community health improvement services”²²; even this small community health fraction represents approximately \$8 per capita.

Policymakers would greatly benefit from a dose-response curve for mass media messaging on SSBs showing the behavior change that can be expected from a particular number of GRPs. The encouraging findings of this study suggest that public health practitioners should attempt additional mass media campaigns addressing SSBs and rigorously evaluate their effects. *AJPH*

CONTRIBUTORS

T. A. Farley designed the evaluation and wrote the article. T. A. Farley, H. S. Halper, and A. M. Carlin developed and implemented the intervention. H. S. Halper collected data on beverage sales. A. M. Carlin collated data measuring the placement of media messages. K. M. Emmerson analyzed the telephone survey data. K. N. Foster performed the univariate analysis of the beverage sales data. K. N. Foster and A. R. Fertig constructed the multivariate models on beverage sales.

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HUMAN PARTICIPANT PROTECTION

This study involved only analyses of existing administrative data and anonymous telephone surveys and was determined by the East Tennessee State University institutional review board to not require full review.

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