

Unhealthy Diet Media Campaign

Final Survey Findings

Prepared for the Nicholson Foundation
By The Public Good Projects (PGP)

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INTRODUCTION

One of the leading underlying causes of premature death in the U.S. is unhealthy diet, which most often manifests itself in the form of obesity.¹ Obesity has been linked to numerous serious health conditions, including Type 2 diabetes, heart disease, and a variety of cancers. Despite the fact that this knowledge is well established, obesity rates have continued to increase, both across New Jersey and the United States. In New Jersey, over 25% of residents are obese, and an additional 36% are overweight.² Similarly, about 25% of high school students are either obese or overweight.³ Consumption of added sugars is one of the leading contributors to the obesity epidemic. Sugar sweetened beverages (SSBs) are the single largest source of added sugars in the American diet, with the average American drinking nearly 42 gallons of sweetened beverages a year.⁴ In New Jersey, one-fifth of adults (20.3%) drink one or more SSB per day.⁵

In response to this, The Public Good Projects has collaborated with the Nicholson Foundation to create and implement a digital media campaign focused on reducing consumption of SSBs and increasing water consumption among those at highest risk for negative health consequences. An extensive literature review revealed a need to pay particular attention to low-income, Hispanic/Latino and African American New Jersey residents, as well as the importance of leveraging the role of mothers in decreasing SSB consumption for themselves and their family. Differences not only exist within the landscape of SSB preferences, behaviors, and general health beliefs between these cultural groups, but also in their lifestyle, values, and interests unrelated to SSB. With both types of insights in mind, PGP designed campaign content separately and specifically for three distinct audience segments: African American moms (through the Natural Beauty Sugarfreed campaign), Hispanic moms (through the Sugarfreed Belleza campaign) and general audience, including partners and individuals interested in the topic (through the NJ Sugarfreed campaign). All three campaigns used tailored content to empower communities with engaging health communication messages disseminated through social media and partner organizations.

¹ "GBD Compare." Data Visualizations, Institute for Health Metrics and Evaluation, University of Washington, 2013, viz.healthmetricsandevaluation.org/gbd-compare/.

² "BRFSS Prevalence & Trends Data." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 13 Sept. 2017, www.cdc.gov/brfss/brfssprevalence/.

³ "New Jersey Student Health Survey, 2011." Rutgers University Bloustein Center for Survey Research for the New Jersey Department of Education, 2012, <http://www.state.nj.us/education/students/yrbs/2011/full.pdf>

⁴ Babey SH, Jones M, Yu H, Goldstein H. Bubbling Over, "Soda Consumption and Its Link to Obesity in California." UCLA Center for Health Policy Research and California Center for Public Health Advocacy, 2009.

⁵ "New Jersey Behavioral Risk Factor Survey (NJBRFS)." New Jersey Department of Health, 2013 and 2014, <https://www.nj.gov/health/chs/njbrfs/>

METHODS

To examine impact of the campaigns, PGP employs multiple evaluation methodologies, including online evaluation surveys, analysis of beverage sales, and examination of public discourse around SSBs.

Online Evaluation Surveys

PGP conducted three cross-sectional evaluation surveys to understand trends and changes in knowledge, attitudes and behaviors (KABs) related to SSB consumption. A baseline survey was conducted pre-campaign implementation, from November 22 - December 2, 2017. A midpoint survey was conducted with a smaller sample of respondents, from April 17 - May 4, 2018, after 4.5 months of campaign dissemination. The midpoint report examined trends midway through the campaign. Results from the midpoint report showed promising trends, suggesting that most survey respondents intended to reduce SSB consumption, but that there was still work to be done to minimize the effects of SSBs on the health of NJ communities. Results from the midpoint report identified priority messaging areas for the second half of the campaign dissemination period. The Year 1 follow-up evaluation survey was conducted from October 5 - November 25, 2018. The follow-up report will compare results from the baseline and follow-up surveys to examine changes in knowledge, attitudes and behaviors. Results from the midpoint report will not be included in comparisons, as this was a smaller sample than baseline and Year 1 follow-up, and was intended to provide direction for messaging, rather than be an evaluation tool.

Analysis of Beverage Sales

Beverage sales data are purchased from IRI (Information Resources, Inc.), a market data firm that contains the world's largest set of purchase, media, and loyalty data. IRI is commonly used by for-profit industries - including beverage companies - to understand market performance and retail analytics, consumer insights, and ad performance. PGP was the first organization to use sales of SSBs as an outcome metric in a previous, and successful, SSB reduction campaign in Tennessee. With funding from Bristol-Myers Squibb Foundation, Mountain States Health Alliance, and Wellmont Health System, the Live Sugarfeed campaign encouraged consumers to drink water instead of sugary beverages and local organizations to promote healthier beverages to their employees and members. Results from sales data showed a 4.1% decline in sales of soda in the intervention area compared to a control region.⁶ For the current campaign, PGP adapted analysis methodologies employed during the previous campaign to examine sales of SSBs both in Passaic County and across New Jersey.

⁶ Farley TA, Halper HS, Carlin AM, Emerson KM, Foster KN, Fertig AR. "Mass media campaign to reduce consumption of sugar-sweetened beverages in a rural area of the United States." *Am J Public Health* (2017) 107:989–95. 10.2105/AJPH.2017.303750

Media Monitoring Analysis

PGP monitors trends across all public media around SSBs and changes in this conversation among the general public/ within media coverage and reporting. PGP employs a combination of techniques to ingest public data and structure it for analysis. Public data include various media sources such as social and digital media (Twitter, Instagram and Facebook), YouTube, online forums, online Q&A websites, news sites and blogs, print media such as journals, magazines, and newspapers, and broadcast television. Data are used to monitor and evaluate the ways that SSBs are discussed online over time.

ONLINE EVALUATION SURVEYS

A total of 800 respondents completed the baseline survey and 782 respondents completed the follow-up survey. Throughout the report, the population of African American and Hispanic moms across New Jersey will be referred to as the 'priority audience;' the overall sample of all respondents surveyed throughout the state will be referred to as the 'overall sample;' and residents of just Passaic County will be referred to as 'Passaic.' Throughout the results presented below, statistical significance was evaluated and indicated with an asterisk when appropriate.

Demographics

Demographic breakdowns between the baseline and follow-up surveys were comparable. African American, Hispanic, and females were oversampled to allow for analyses to be conducted on the priority audience's knowledge, attitudes and behaviors (KABs) regarding SSBs. At baseline, 75.4% of respondents were female, 24.0% were male, and 0.6% were other or preferred not to say. Similarly, at follow-up 74.6% were female, 24.8% male, and 0.6% were other or preferred not to say. Oversampling of Hispanic and African American respondents is reflected in the chart below, titled "Respondent Race and Ethnicity" and cumulatively reflect 57.6% of baseline and 62.7% of follow-up participants for the overall sample. The high percentage of respondents who chose "Other" is reflective of overall trends in the way that individuals identify their race and ethnicity. A 2017 Pew Research report found that when race and ethnicity are asked in two separate questions, over a third of hispanic respondents chose the "Other" category for race.⁷ Parents were also oversampled, given that the campaign targeted those with children in the house as a priority audience, accounting for over 50% of respondents (58.0% baseline and 53.3% at follow-up). Respondents age 35 and under represented 67.7% at baseline and 63.1% at follow-up. At baseline, the average household was 3.5 individuals while the average household at follow-up was 3.4. Information on the racial and ethnic breakdown of overall respondents at baseline and follow-up can be viewed below.

⁷ Cohn, D'Vera. Seeking Better Data on Hispanics, Census Bureau May Change How It Asks about Race. Pew Research Center, 20 Apr. 2017, www.pewresearch.org/fact-tank/2017/04/20/seeking-better-data-on-hispanics-census-bureau-may-change-how-it-asks-about-race/.

Race and Ethnicity of Respondents⁸

	Overall Sample		Passaic County	
	<u>Baseline</u>	<u>Follow-Up</u>	<u>Baseline</u>	<u>Follow-Up</u>
White	44.3%	45.3%	44.7%	38.8%
Black/African American	27.9%	30.7%	31.6%	21.4%
Asian	8.1%	5.2%	3.9%	4.1%
Hawaiian/Pacific Islander	0.9%	0.9%	0.0%	2.0%
Native American	2.3%	2.4%	1.3%	3.1%
Other	17.4%	16.6%	21.2%	31.6%
Prefer to not say	3.3%	3.2%	1.3%	4.1%
Hispanic	33.0%	38.2%	53.9%	60.2%

Throughout the campaign, Passaic County has served as the campaign hub, a campaign manager delivering the campaign to the entire state, but with a particular emphasis on Passaic. Passaic also served as the primary source for creation of relevant content for dissemination by the campaign, such as local video or image-based content. Therefore, respondents from this area were oversampled at both baseline and follow-up: at baseline, 9.5% of respondents were from Passaic County compared to 12.5% at follow-up. It is also important to note that respondents from Passaic County were more often Hispanic, compared to the overall sample. Hispanic and African Americans cumulatively accounted for 78.9% of baseline and 71.4% of Passaic County respondents at follow-up, further reflecting the oversampling of the targeted Hispanic and African American population compared to the overall sample. For more information on age and household characteristics at baseline and follow-up, refer to the Appendix.

SSB Identification

To analyze the population's general knowledge of SSBs, respondents were presented with a list of beverages and asked to identify which they thought were SSBs. At follow-up, 25.3% of all respondents correctly identified all the SSBs, compared to 24.8% at baseline. In general, identification of SSBs was similar at baseline and follow-up, with none of the changes in SSB identification reaching statistical significance. As shown in the chart below, correct

⁸ Race and ethnicity were asked in two questions. Respondents were asked to select all races that apply. Therefore, race/ethnicity percentages will total more than 100%.

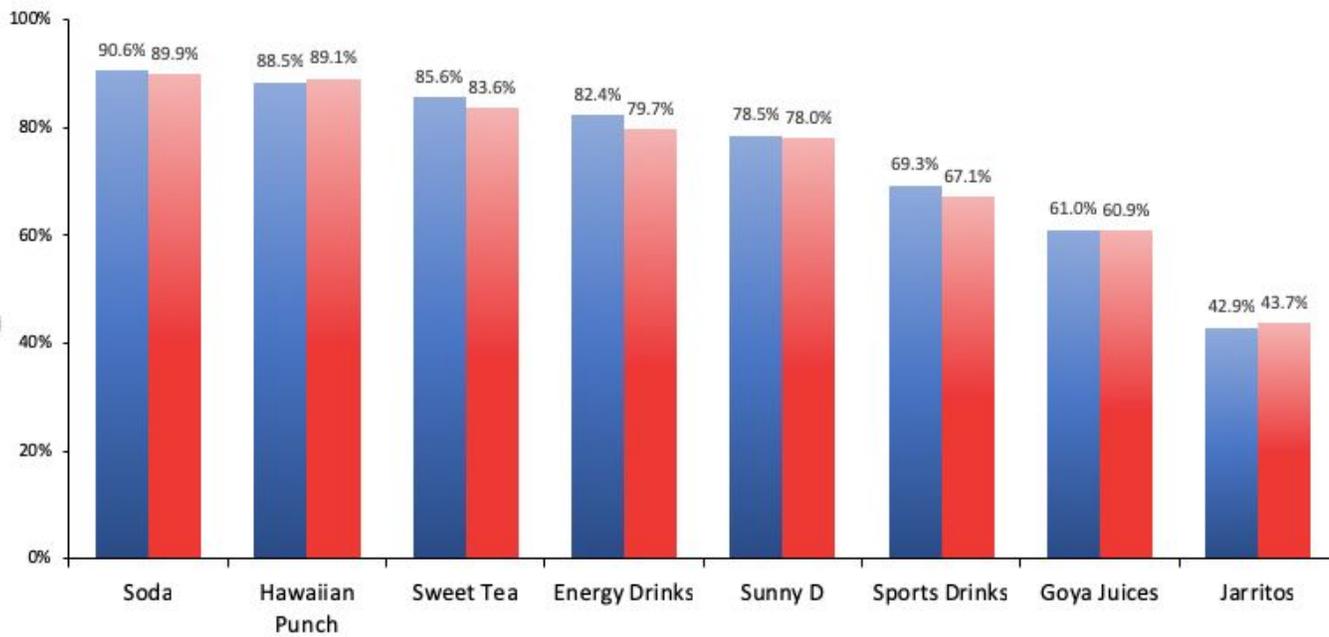
identification was highest at around 90% for soda and Hawaiian Punch for both baseline and follow-up. Sweet tea and energy drinks followed with around 80% correct identification, followed by Sunny D at just under 80% for baseline and follow-up. Fewer than 70% of respondents correctly identified sport drinks and Goya juices, and fewer than 50% correctly identified Jarritos. When results were examined by priority audience, awareness of soda improved among both Hispanic and African American respondents, and awareness of sports drinks increased among African Americans. This is notable because much of the content throughout the campaigns focused on these two beverages.

It is important to note the cultural differences in awareness and consumption of Jarritos and Goya products. During the follow-up survey, 78.3% of Hispanic moms correctly identified Goya juice products as an SSB, compared to 56.4% of African American moms. Similarly, Jarritos was correctly identified by 63.1% of Hispanic moms, versus 30.9% of African American moms. The lower levels of identification are likely due to African American moms generally being less familiar with these products and less likely to be exposed to or consume them. For example, at follow-up, 28.7% of African American moms reported being unsure if Goya products were an SSB, and 51.1% were unsure about Jarritos. Although Hispanic moms showed more awareness and identification of these beverages as SSBs, there is still more education to be done - among Hispanic moms, Jarritos showed the lowest awareness of all SSBs. For more information on the SSB identification question by race /ethnicity, refer to the Appendix.

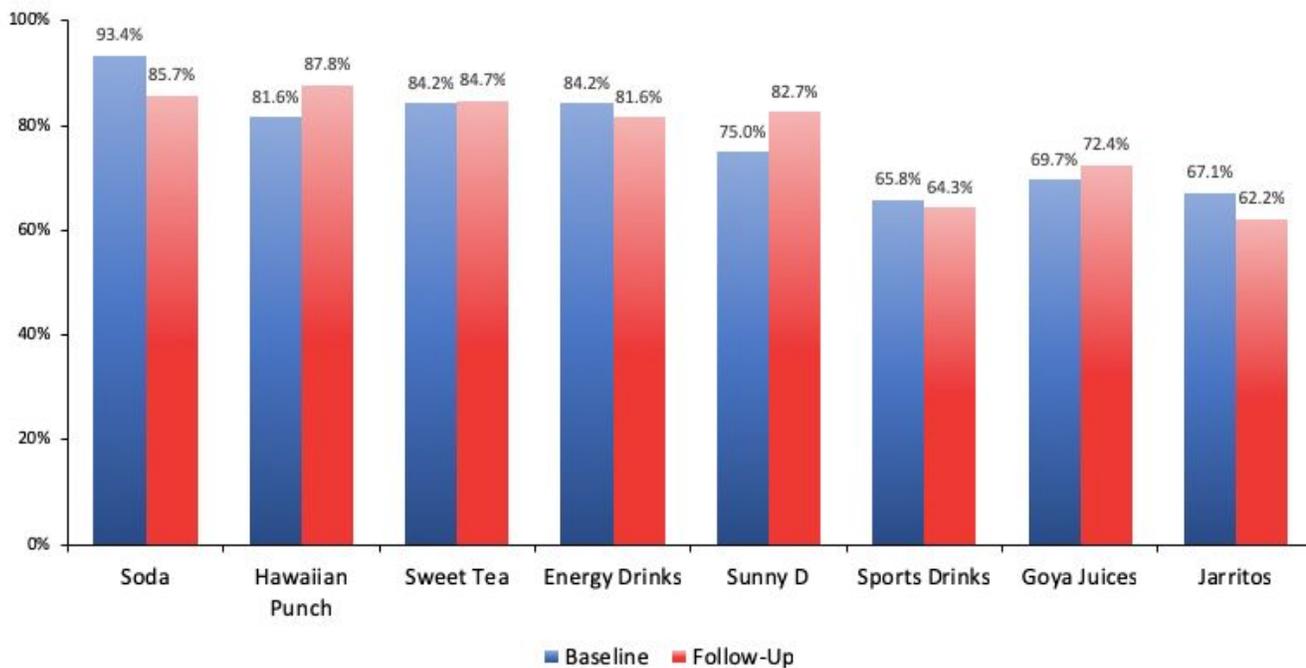
When comparing the overall sample to Passaic County, Passaic showed similar patterns of SSB identification, with soda the most often identified and Jarritos the least often identified. Correct identification in Passaic and New Jersey most often fell within a few percentages of each other, with a few minor exceptions. Respondents in Passaic showed slightly higher recognition of Sunny D compared to the overall sample (82.7% vs. 78.0% at follow-up, respectively). Conversely, Passaic showed slightly lower identification of sports drinks compared to the overall sample (64.3% vs. 67.1% at follow-up, respectively). Additionally, a greater percentage of respondents from Passaic correctly identified Goya juices and Jarritos. Statewide, 25.6% of respondents reported being unsure if Goya was an SSB, with 42.4% unsure about Jarritos. These results are likely reflective of the fact that Passaic County has a larger population of residents who identify as Hispanic (41.9%), compared to New Jersey as a whole (20.4%).⁹ In the follow-up survey, 60.2% of Passaic respondents identified as Hispanic, compared to 38.2% of the overall sample. Altogether, Passaic residents confirmed trends seen at the statewide level, with few major outliers. For more information on SSB identification trends for both the overall sample and Passaic, refer to the charts on the next page.

⁹ U.S. Census Bureau QuickFacts: Passaic County, New Jersey; New Jersey. United States Census Bureau, www.census.gov/quickfacts/fact/table/passaiccountynewjersey,nj/PST045217.

Overall Sample - Identification of SSBs



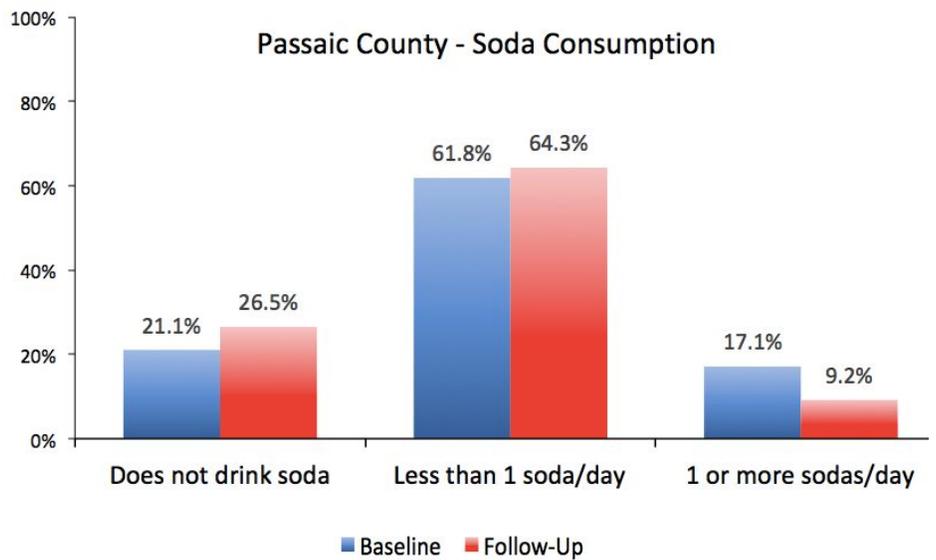
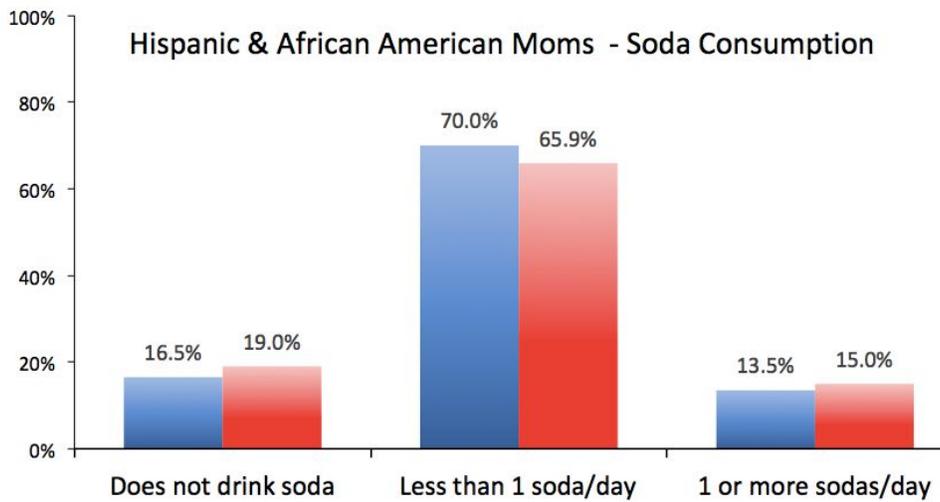
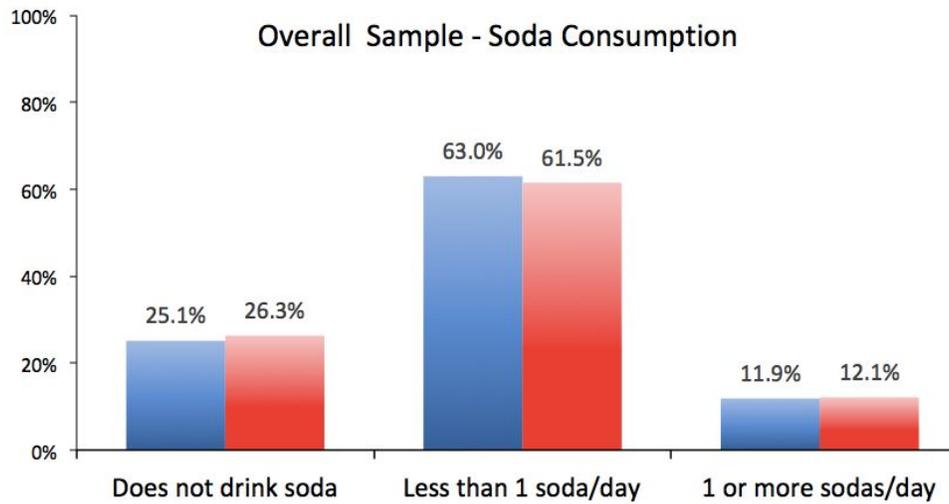
Passaic County - Identification of SSBs



Soda Consumption

Respondents were asked to report on their own soda consumption. From baseline to follow-up, all groups examined - the overall sample, priority audience, and Passaic - showed increases in those who report not drinking soda at all. However, overall sample respondents and the priority audience both showed slight (not statistically significant) increases in those who report drinking more than one soda per day. For the follow-up survey, 12.1% of the overall sample and 15.0% of the priority audience reported being heavier soda consumers, consuming at least one sugary soda per day. Results also showed that consumption of soda among the priority audience is generally higher than the overall sample, corroborating research that shows higher rates of consumption among this group, and providing further support to PGP's targeted campaign approach.

In comparison, Passaic County showed the most promising results. In addition to reporting an increase in the percentage who do not drink soda at all, Passaic also reported a substantial 7.9% percentage point decrease in consumption of at least 1 soda per day. This is an important finding to note given that the Passaic County sample contained a larger proportion of Hispanic and African American respondents compared to the rest of the state - a population that traditionally shows higher rates of SSB consumption (as previously described). Yet despite this, Passaic showed the largest decrease in heavy soda consumption, suggesting a potential effect from receiving a "higher dose" of the campaign. The charts on the following page show a comparison of soda consumption trends among respondents, including the overall sample, target audience, and Passaic County. For more information on respondent SSB consumption aside from soda, refer to the Appendix.



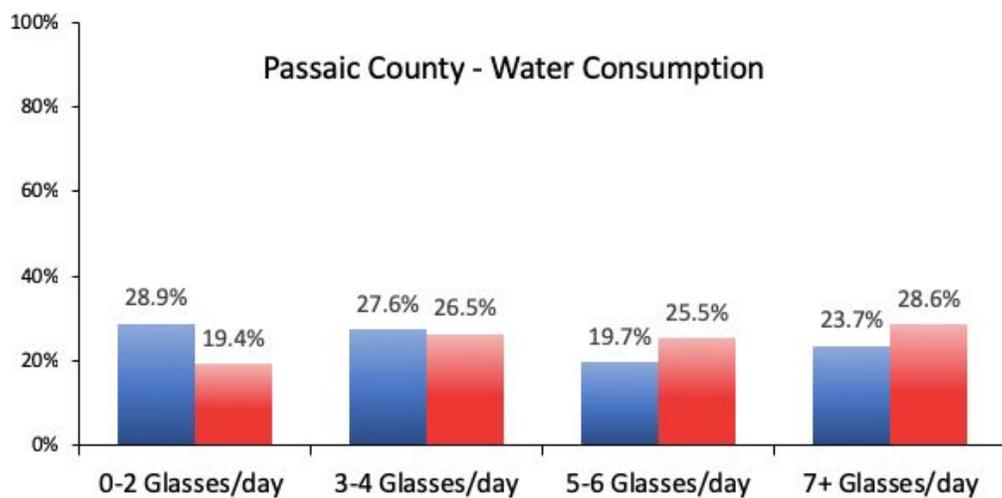
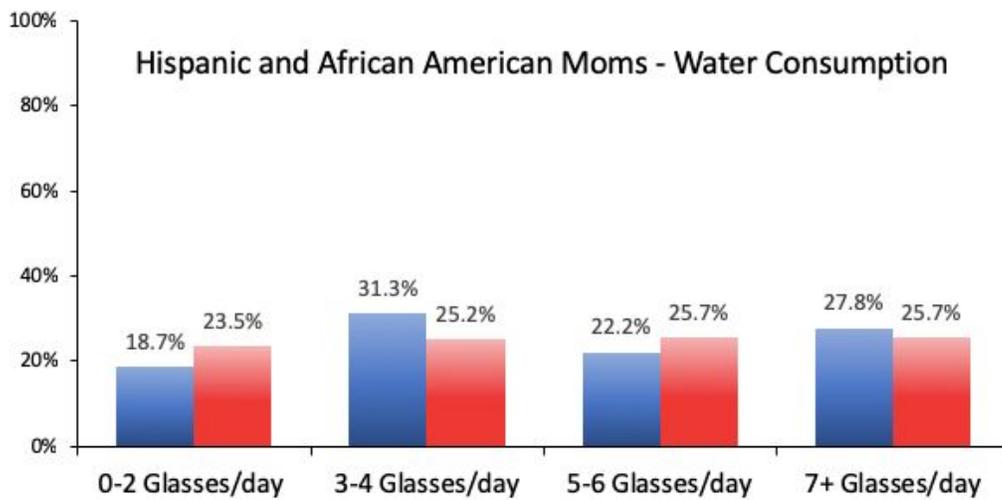
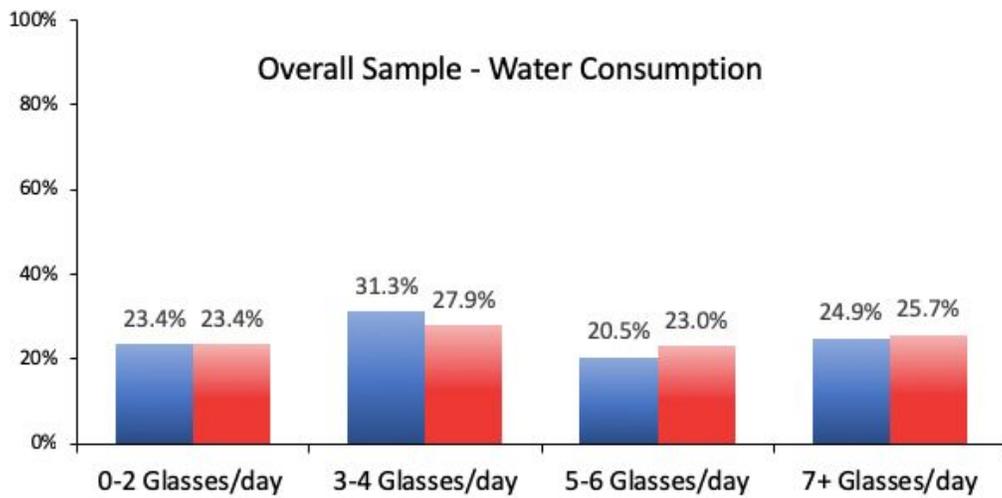
Water Consumption

While daily fluid intake can come from foods and other beverages, water consumption is essential for overall health as it helps manage body weight and reduces caloric intake when substituted for drinks such as SSBs.¹⁰ In addition to emphasizing a reduction in SSB consumption, PGP's campaign content also heavily focused on encouraging the audience to choose water for themselves and their children as a healthier alternative to SSBs. The follow-up survey showed that the overall sample trended toward increased water consumption. At follow-up, the number of those who consumed 4 glasses of water or less per day declined, while consumption of 5+ glasses per day increased.

Similar to the overall sample, Passaic County showed a steadily increased water consumption pattern - results showed a decrease in consumption of 0-4 glasses of water per day, and an increase in consumption of 5 or more glasses per day. Importantly, Passaic County residents who reported low water consumption of 0-2 glasses per day decreased by 9.5 percentage points. When examined alongside soda consumption patterns, this suggests that residents in Passaic County may have shifted from SSB consumption to drinking more water.

Water consumption patterns among the priority audience presented a more complicated story. Results showed slight increases in moderate water consumption (5-6 glasses per day), but also a small decrease in 7+ glasses per day. Although these results were not statistically significant, it also implies that the campaign's target audience requires additional specific messaging. However, as mentioned in the previous section, the steady increase in water consumption among those in Passaic (an area high in African American and Hispanic residents) implies that a stronger dose of the campaign across the rest of the state may have an impact on this target audience. The charts on the following page present a comparison of water consumption patterns across the three identified groups.

¹⁰ CDC: Get the Facts: Drinking Water and Intake. Centers for Disease Control and Prevention, 23 Oct. 2018, www.cdc.gov/nutrition/data-statistics/plain-water-the-healthier-choice.html.



■ Baseline ■ Follow-Up

Purchasing Patterns

Prior research has shown that the majority of SSBs consumed by children are purchased from stores, and that moms often act as gatekeepers to household decisions about spending money.^{11 12} This was a major factor in PGP's decision to target moms as a priority audience for the campaign, given that they often make the grocery purchasing decisions for the family. In both surveys, a majority of respondents, 66.3% at baseline and 67.1% at follow-up, reported being primarily responsible for the grocery shopping decisions in their household.

To understand the patterns of purchasing SSBs, respondents were asked how often in the past week they purchased soda and other SSBs from either a restaurant or a store. Among the overall sample, the priority audience, and Passaic County, respondents more often purchased SSBs from a store than from a restaurant. The overall sample and priority audience showed a decreasing purchasing trend from baseline to follow-up, at both stores and restaurants.

However, respondents in Passaic County showed a slight increase in past-week purchasing at stores and a significant increase at restaurants. There could be several reasons for this increase. Given that the questions asked respondents to report purchasing within the last week, results may vary due to the dynamic trends of purchasing. Both surveys were conducted throughout the Thanksgiving holiday season, which may also skew patterns and reflect higher than normal levels of purchasing. Asking respondents to report on an average amount over a longer time frame may provide a better understanding of routine patterns. Additionally, it is also possible that while individuals may still purchase SSBs, they may be purchasing less than they did previously. In this scenario, their consumption patterns may show a decrease in SSBs while their purchasing patterns stay the same. However, regardless of the reasons for purchasing, over 70% of the overall sample, priority audience, and Passaic County purchased SSBs from a store in the past week, showing that SSB availability continues to be a central issue in children's access to SSBs in the home. For more information on past-week purchasing patterns, refer to the charts on the next page.

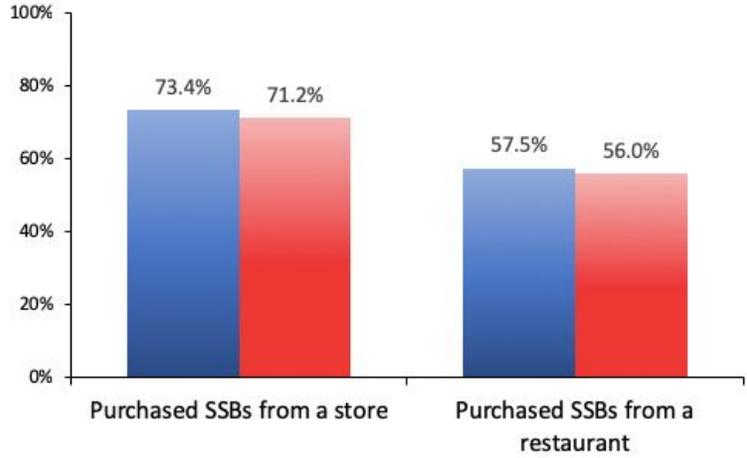
¹¹ *Audience Insights: Communicating to Moms (With Kids at Home)*. Centers for Disease Control and Prevention Department of Health and Human Services.

https://www.cdc.gov/healthcommunication/pdf/audience/audienceinsight_moms.pdf

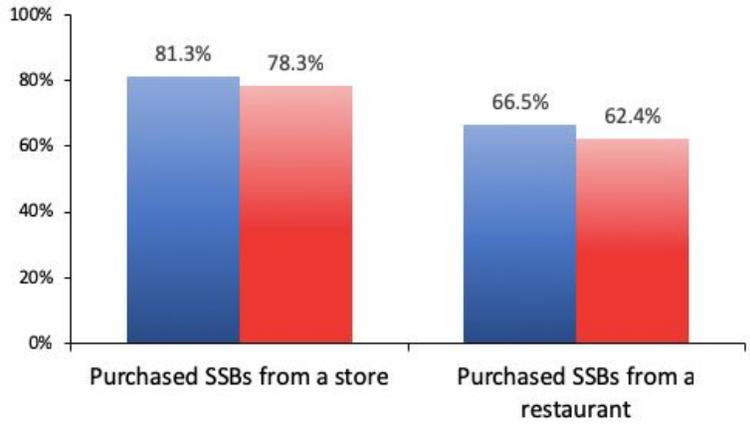
¹² Ogden, C. L., Kit, B. K., Carroll, M. D., & Park, S. "Consumption of sugar drinks in the United States." Hyattsville, MD: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, 2011, 2005-2008(p. 71)

<https://www.cdc.gov/nchs/data/databriefs/db71.pdf>

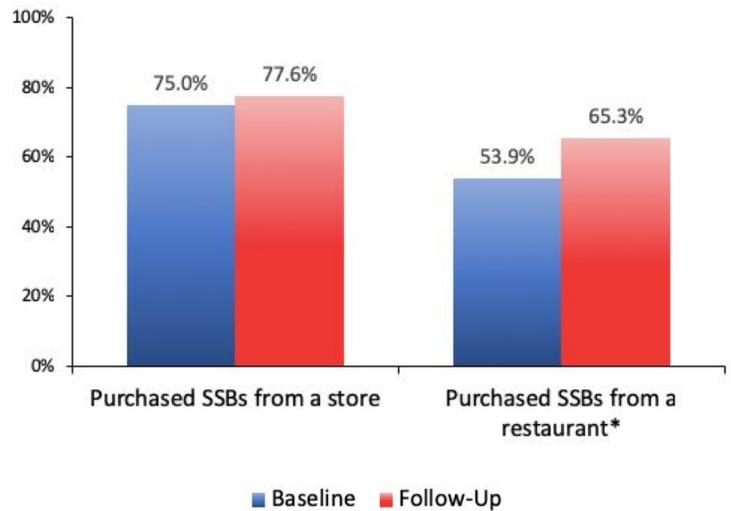
Overall Sample - Past Week Purchasing



Hispanic and African American Moms - Past Week Purchasing



Passaic County - Past Week Purchasing



■ Baseline ■ Follow-Up

SSB Availability in the Home

To provide more direct context on the availability of SSBs in the home, respondents were also asked how often they typically have soda or other SSBs available for people to drink at home. Among the overall sample and Passaic, follow-up data showed substantial decreases in the percent of respondents who have SSBs in the home “always” or “most of the time.”

Although around 40% of the priority audience reported having SSBs available at home “always” or “most of the time,” this group also saw a slight decline in those who “never” have SSBs in the home. Similar to previous questions, it is noteworthy that the numbers declined so substantially in Passaic, given that the sample contained a larger proportion of African American and Hispanic respondents compared to the overall sample.

How often do you have regular soda or other sugar-sweetened drinks available at home for people to drink?						
	Overall Sample		Hispanic & African American Moms		Passaic County	
	Baseline	Follow-Up	Baseline	Follow-Up	Baseline	Follow-Up
Always/ Most of the time	37.0%	33.9%	31.9%	39.6%	47.4%	31.6%
Sometimes/ Half the time	50.8%	51.8%	61.1%	51.8%	43.4%	59.2%
Never	12.2%	14.3%	7.1%	8.6%	9.2%	7.1%

SSB Acceptability for Children

To evaluate beliefs regarding the appropriate age for children to consume SSBs, participants were asked “At what age do you think it is OK for children to regularly have soda.” Across all three groups - overall sample, priority audience, and Passaic county - follow-up results showed decreases in perceived acceptability for children under 10 years old to consume soda. The largest decrease was observed in Passaic, from 28.9% to 23.5%. Correspondingly, the target audience and Passaic showed increases in the belief that it is “never” appropriate for children to regularly consume soda, with Passaic showing an increase of almost 3 percentage points, and the priority audience showing a more modest 0.4 percentage point increase. While there is still a substantial group of respondents who believe that it is appropriate to regularly give soda to children, in general this number shows encouraging trends toward decreased acceptability - a positive step toward reducing consumption among children.

A similar question was asked to gauge if respondents felt it would be appropriate for children “to regularly have fruit punch or fruit-flavored drinks containing sugar.” Similar to baseline

results, respondents more often felt that it was appropriate to give children fruit punch, with about half of respondents across all groups reporting that it is appropriate to regularly give these drinks to children under 10 years old and around ¼ of respondents reporting that it is “never” acceptable. Results for this question were stubbornly stable from baseline to follow-up across all groups, with most groups showing changes +/- less than 2 percentage points. This question shows the importance of messaging that reinforces drinks such as Sunny D and Hawaiian Punch as never appropriate for children. With 27 grams of sugar in 16 oz of Sunny D, 34 grams in 16oz of Hawaiian Punch, these drinks are just as harmful to health as a sugary soda. For more information on perceptions of acceptability for both soda and fruit drinks, refer to the tables below.

At what age is it OK for children to regularly have soda?						
	Overall Sample		Hispanic & African American Moms		Passaic	
	<u>Baseline</u>	<u>Follow-Up</u>	<u>Baseline</u>	<u>Follow-Up</u>	<u>Baseline</u>	<u>Follow-Up</u>
Under 10 yrs.	20.3%	20.1%	22.6%	18.6%	28.9%	23.5%
Over 10 yrs.	34.0%	33.6%	28.7%	32.6%	31.6%	31.6%
Never	40.6%	40.3%	44.3%	44.7%	38.2%	40.8%

At what age is it OK for children to regularly have fruit punch or fruit flavored drinks with sugar?						
	Overall Sample		Hispanic & African American Moms		Passaic	
	<u>Baseline</u>	<u>Follow-Up</u>	<u>Baseline</u>	<u>Follow-Up</u>	<u>Baseline</u>	<u>Follow-up</u>
Under 10 yrs.	47.6%	48.2%	51.7%	53.5%	50.0%	50.0%
Over 10 yrs.	21.1%	19.4%	18.3%	16.4%	22.4%	19.4%
Never	23.1%	24.2%	23.5%	24.8%	23.7%	22.4%

Perceptions of Consumption

To understand social norms around SSBs, respondents were asked about their perceptions of others' SSB consumption. The idea of social norms is an important component in understanding reasons for behavior and the possibility for positive behavior change.¹³ Across all three groups, results showed a decrease in those who believe friends and family drink regular soda on a daily basis, and a corresponding increase in those who believe that their friends and family drink regular soda on a monthly basis or less. The decrease was largest among those in Passaic County (a decrease of 6.3 percentage points), and the priority audience (a decrease of 5.4 percentage points). This question provides an important window to potential behavior change, given that the influence of friends and family is a strong determinant of behavior change.^{14 15}

When asked the same question regarding drinking patterns for Americans in general, response patterns did not mirror those seen in the previous question. The overall sample and Passaic showed a slight increase in beliefs that most Americans drink regular soda either monthly or less, while the priority audience decreased slightly on this measure. In comparison, the overall sample and priority audience reported almost identical beliefs that most Americans drink soda daily, with Passaic showing a minor decrease. It is possible that PGP's emphasis on using locally relevant messaging and incorporating community members throughout content changed respondents' perceptions of people who live near them, but did not change their perceptions of people in the rest of the country. Results still show that work should be done on changing general social norms around SSB consumption. For more information on social norms around perceptions of consumption, refer to tables on the following page.

¹³ Reynolds, Katherine J., et al. "The Problem of Behaviour Change: From Social Norms to an Ingroup Focus." *Social and Personality Psychology Compass*, vol. 9, no. 1, 2015, pp. 45–56., doi:10.1111/spc3.12155.

¹⁴ Institute of Medicine (US) Committee on Health and Behavior: Research, Practice, and Policy. *Health and Behavior: The Interplay of Biological, Behavioral, and Societal Influences*. Washington (DC): National Academies Press (US); 2001. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK43743/> doi: 10.17226/9838

¹⁵ Tomé, Gina et al. "How can peer group influence the behavior of adolescents: explanatory model" *Global journal of health science* vol. 4,2 26-35. 1 Mar. 2012, doi:10.5539/gjhs.v4n2p26

How often do you think your friends and family drink regular soda?

	Overall Sample		Hispanic & African American Moms		Passaic	
	<u>Baseline</u>	<u>Follow-Up</u>	<u>Baseline</u>	<u>Follow-Up</u>	<u>Baseline</u>	<u>Follow-up</u>
Daily	37.5%	35.8%	46.1%	40.7%	46.1%	39.8%
Weekly	37.3%	37.7%	34.8%	35.4%	32.9%	36.7%
Monthly/ Less than Monthly	20.8%	22.4%	17.0%	19.5%	19.7%	22.4%
Don't Know	4.5%	4.1%	2.2%	4.4%	1.3%	1.0%

How often do you think most Americans drink regular soda?

	Overall Sample		Hispanic & African American Moms		Passaic	
	<u>Baseline</u>	<u>Follow-Up</u>	<u>Baseline</u>	<u>Follow-Up</u>	<u>Baseline</u>	<u>Follow-up</u>
Daily	60.3%	60.0%	67.0%	67.3%	57.9%	55.1%
Weekly	25.5%	22.9%	19.6%	18.6%	27.6%	27.6%
Monthly/ Less than Monthly	11.1%	14.1%	11.3%	9.7%	13.2%	16.3%
Don't Know	1.5%	2.9%	2.2%	4.4%	1.3%	1.0%

SSB Attitudes

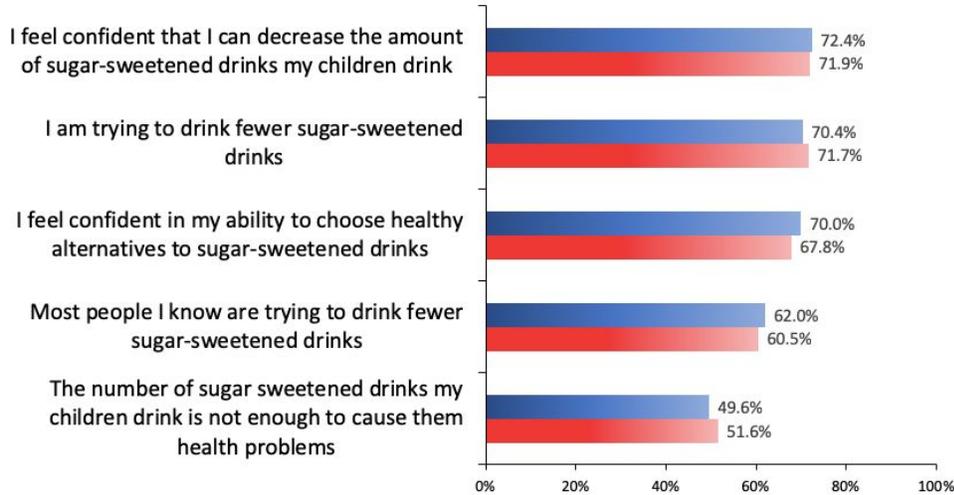
Attitudes towards SSBs were assessed by presenting respondents with a list of statements and asking how much they agree with each. The chart below shows the percentage of respondents who either “Strongly Agreed” or “Agreed” with the statements. Results from the overall sample and priority audience showed similar trends from baseline to follow-up. A vast majority still feel confident that they can decrease the number of SSBs their children drink, and that they can choose healthy alternatives. The percentage of those who are trying to drink fewer SSBs also increased slightly across all groups from baseline to follow-up, with between 70 - 80% of respondents in agreement at follow-up. This increase is encouraging, and although not statistically significant, shows that there are high levels of awareness and desires to reduce SSB consumption, both among their children and themselves.

Among respondents in Passaic, results showed a more complicated story, potentially due to the fact that the sample sizes in Passaic were more limited. Passaic County residents showed a large increase in their confidence to decrease their children’s SSB consumption, as well as a slight increase in those who were trying to drink fewer SSBs. However, they also showed a drop in their confidence to choose healthy alternatives to SSBs and an increase in their belief that the number of SSBs their children drink is not enough to cause health problems.

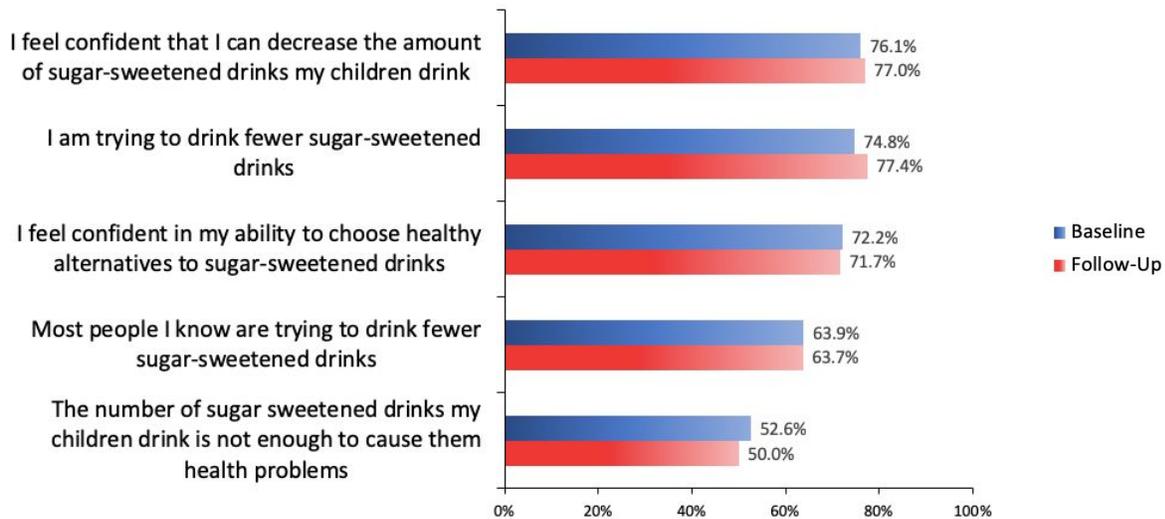
Results across all SSB attitude questions show some positive trends. In general, respondents show a high level of awareness that they should drink fewer SSBs and confidence that they can make positive choices for their children. According to behavior change theories, acknowledgement of a negative behavior is the first step toward actually changing a behavior.¹⁶ Although making that change can often be a challenge, these data suggest that many respondents in New Jersey are on right the path. Results from these questions are presented on the following page.

¹⁶ LaMorte, Wayne W. Behavioral Change Models. Boston University School of Public Health, sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/index.html.

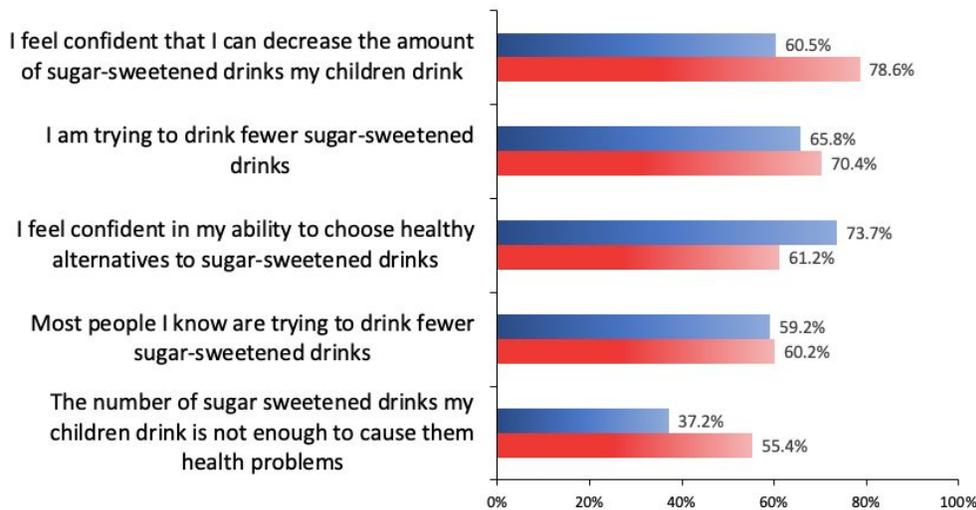
Overall Sample - Statement of Agreement



Hispanic and African American Moms - Statement of Agreement



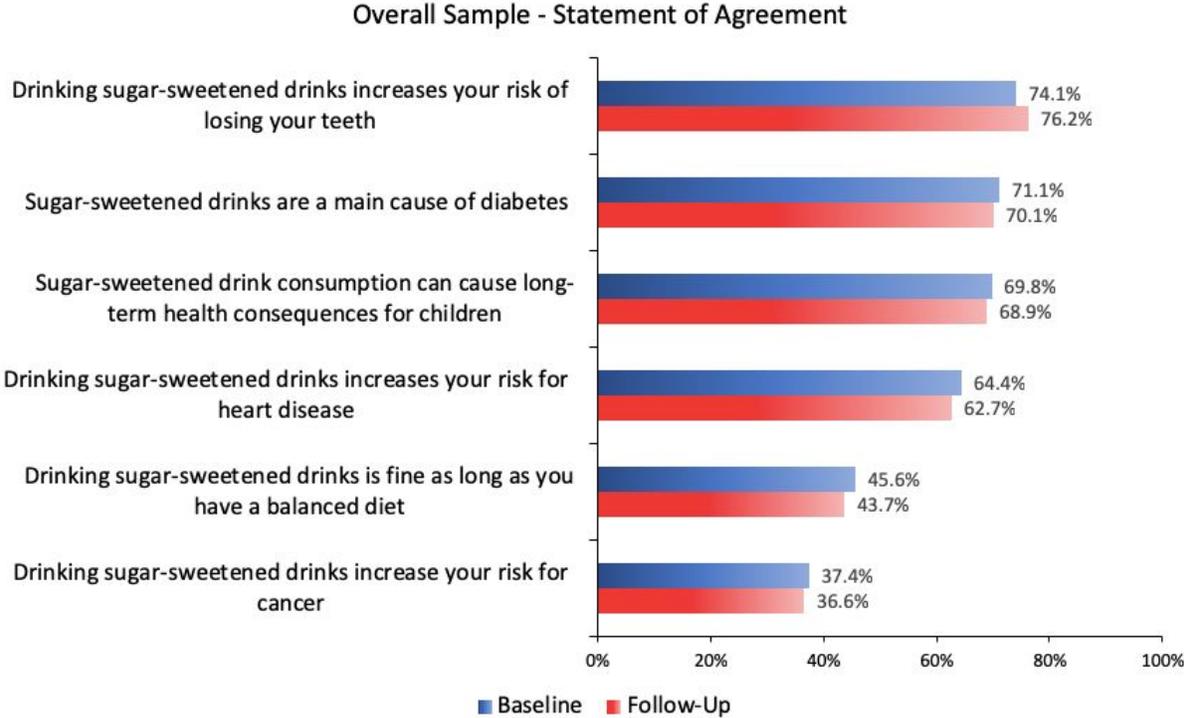
Passaic - Statement of Agreement



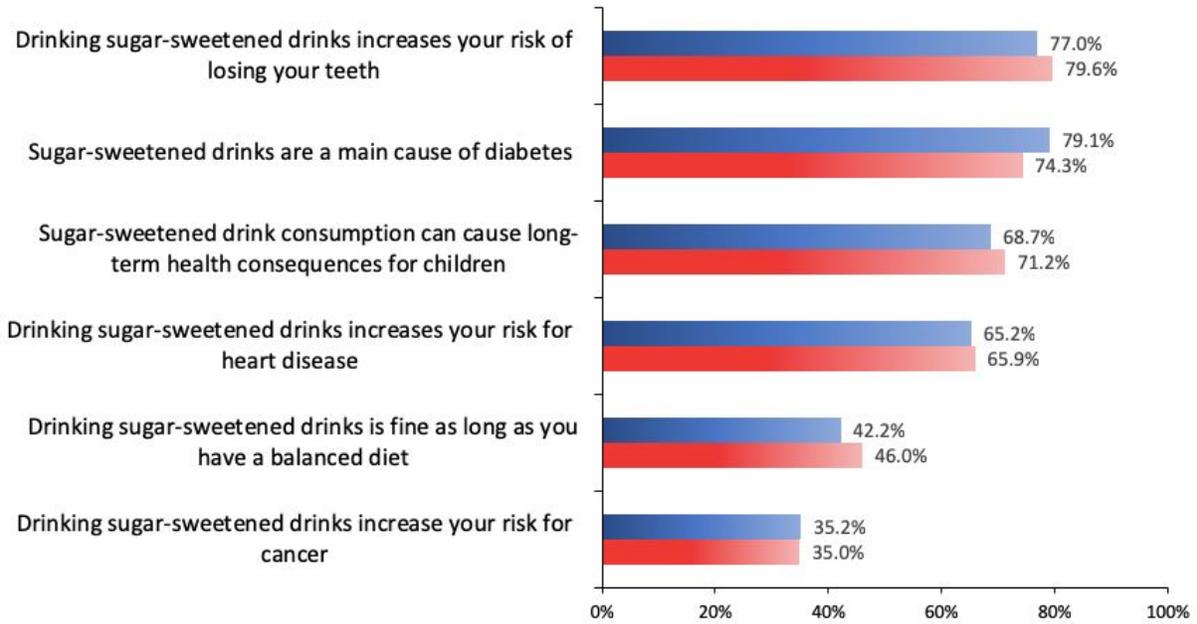
SSB Knowledge

To examine general knowledge on the health consequences from consuming SSBs, participants were presented with fact statements and asked how much they agreed with them. Similar to the charts above, results presented below show those who “Strongly Agreed” or “Agreed” with statements. Most respondents were aware that consuming SSBs increases the risk of tooth problems, with all groups showing an increase in agreement from baseline to follow-up. Facts about the links between SSBs and diabetes also showed similarly high general agreement of over 70% at both baseline and follow-up. While the priority audience showed a slight increase, Passaic County had a statistically significant increase in those who agree that SSBs can have long-term health consequences for children, increasing from 60.4% to 70.4%.

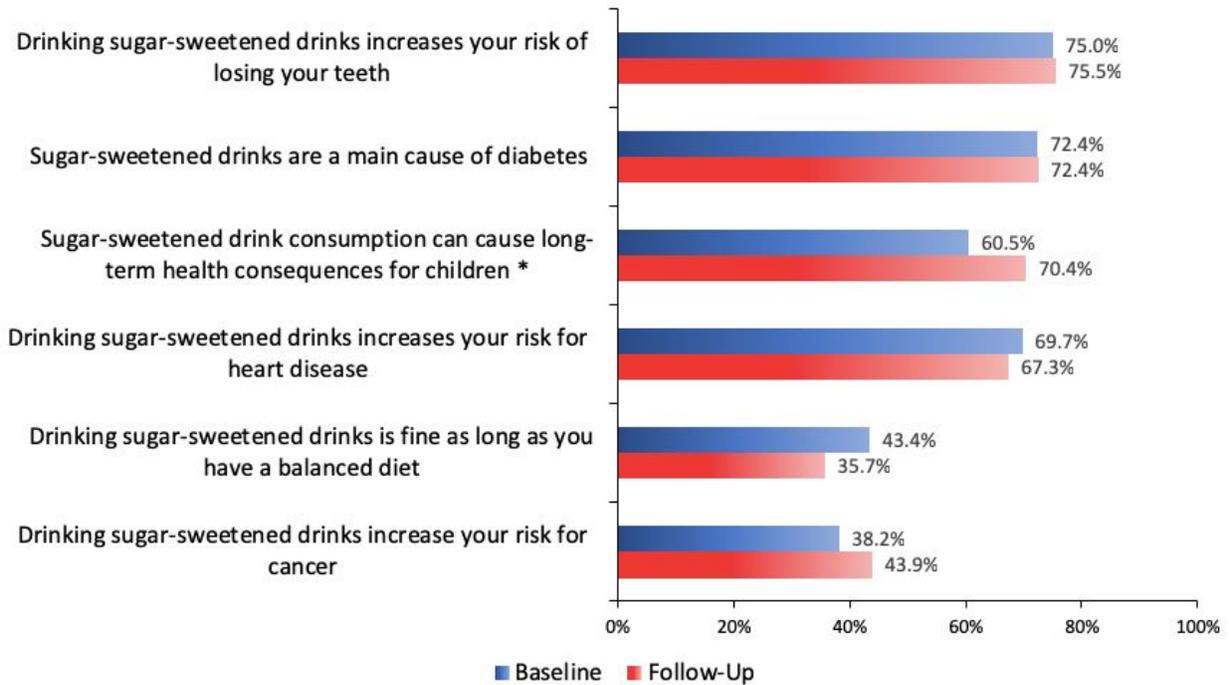
Despite these positive results, there is still work to do on some of the lesser known facts about SSBs. Knowledge about the links between SSBs and heart disease was between ~60 - 70% for all three groups, from baseline to follow-up. Though the priority audience showed a slight increase in this measure, there is still clear room for improvement on a fact that is well established. Additionally, around 35% of the overall sample and priority audience are aware of the links between SSBs and cancer. Passaic showed encouraging results on this measure, with an increase of 5 percentage points, to almost 44%. Despite this increase, it also means that over half of respondents are either unaware or do not believe that SSBs can cause cancer. Results from these questions are presented on the following page. Additional information on the knowledge and attitudes of respondents is presented in the Appendix.



Hispanic and African American Moms - Statement of Agreement



Passaic County - Statement of Agreement



Policy Perceptions

While PGP's campaigns did not include messaging related to a tax on sugary drinks, information presented below provides a glimpse into the public opinion of such a measure. It should be noted that questions about public opinion on SSB taxes were only included in the midpoint and follow-up evaluations. Therefore, unlike other data presented throughout this report, tables below present comparisons from midpoint.

When asked if they would support or oppose a general tax on soda and sweetened fruit drinks, the overall sample and priority audience showed similar results from midpoint to follow-up. Approximately 40% supported the idea, 40% opposed the idea, and almost 20% were unsure. When the same question was posed as a tax to raise money for childhood obesity programs, both again showed similar patterns, with little variation from midpoint to follow-up. Across all groups, support for this idea was substantially higher than support for a general tax.

When examining Passaic County in particular, support for a general tax decreased substantially, from 57.5% at midpoint to 43.9% at follow-up. However, when asked about a tax that provides funding for obesity programs, their support actually increased - from 50.0% at midpoint to 56.1% at follow-up. Correspondingly, their opposition to the idea of using funds for obesity programs decreased, from 35.0% to 26.5%. If pursuing this idea in Passaic County, results suggest that it may be particularly important to tie any taxes into concrete programs.

It is critical to gauge public sentiment around a potential SSB tax, given that some cities across the United States have pursued SSB taxes only to be met with highly critical, vocal, and well-funded responses from the beverage industry. The beverage industry heavily lobbies against education efforts and policies that aim to reduce consumption of SSBs, and has played a crucial role in overturning and/or ensuring the failure of soda tax policies.¹⁷ While these results should be interpreted with caution - given the limited sample of respondents in Passaic - results clearly show that support for a SSB tax increases when individuals are informed that funds would be used to support childhood obesity programs.

¹⁷ Allison, A. "Judges Take Up Big Soda's Suit To Abolish Philadelphia's Sugar Tax." NPR, Apr. 2017. Retrieved December 16, 2018, <https://www.npr.org/sections/thesalt/2017/04/05/522626223/judges-take-up-big-sodas-suit-to-abolish-philadelphias-sugar-tax>

Do you support or oppose a tax on regular soda and sweetened fruit drinks...

In General :

	<i>Overall Sample</i>		<i>Hispanic & African American Moms</i>		<i>Passaic County</i>	
	<u>Midpoint</u>	<u>Final</u>	<u>Midpoint</u>	<u>Final</u>	<u>Midpoint</u>	<u>Final</u>
Support	40.0%	40.5%	38.4%	38.5%	57.5%	43.9%
Oppose	44.3%	42.2%	42.9%	42.9%	30.0%	34.7%
Undecided	15.7%	17.3%	18.8%	18.6%	12.5%	21.4%

For Childhood Obesity Programs :

	<i>Overall Sample</i>		<i>Hispanic & African American Moms</i>		<i>Passaic County</i>	
	<u>Midpoint</u>	<u>Final</u>	<u>Midpoint</u>	<u>Final</u>	<u>Midpoint</u>	<u>Final</u>
Support	54.2%	54.6%	58.0%	58.4%	50.0%	56.1%
Oppose	31.0%	30.1%	27.7%	25.2%	35.0%	26.5%
Undecided	14.8%	15.3%	14.3%	16.4%	15.0%	17.3%

Limitations

Although these results present an important look at knowledge, attitudes and behaviors (KABs) among individuals across New Jersey, there are a few limitations to note. The surveys were conducted through Qualtrics, a research company that conducts surveys through panels. Qualtrics recruits individuals to be part of their panel, and in order to avoid survey fatigue (oversurveying the same respondents) and creating a pool of “professional” survey takers, panel members are cycled in and out. Therefore, it is not possible to use Qualtrics panels to conduct longitudinal surveys using the same population for baseline and follow-up, and all surveys were cross-sectional. With this in mind, results must be interpreted as general directional findings, rather than as indications of individual behavior change.

Most of the results did not reach statistical significance, so they should only be interpreted as trends among respondents. Additionally, participants for this study were recruited through a

professional panel company. Although panels are designed to be as representative as possible, respondent views may not represent the views of their general communities. Finally, participants could have answered questions on the survey according to a social desirability bias, rather than their actual perspectives. This bias may have been mitigated by the fact that it was an online survey, and could be completed in privacy. Despite these limitations, these data provide an important look into the KABs of adults across New Jersey, and results should be taken into account when creating messaging for any campaign intended to reduce SSB consumption.

ANALYSIS OF BEVERAGE SALES

Methods

IRI is a market data company that compiles sales data to understand market performance and retail analytics, consumer insights, and ad performance. In order to examine changes in purchasing patterns across different types of SSBs and water, PGP purchased sales data across 7 types of stores, including:

1. Grocery Outlets – Stores with \$2M+ annual total sales volume and market share of 0.5% or more (for example, chain grocery stores). Therefore, data do not include purchases from non-chain corner stores or bodegas.
2. Drug Outlets– All chain and independent drug retailers, such as CVS and Walgreens
3. Mass Merchandiser Outlets – Large retail stores offering a wide variety of items, such as Target, Walmart and Kmart
4. Club Stores – Such as BJ’s or Sam’s Club
5. Dollar Stores – Such as Dollar General, Family Dollar
6. Military Base Retail Outlets – On and off-base commissaries specifically for members of the military

PGP purchased sales data on specific categories and brands of beverages. It is important to note that sales data on the general “Fruit Juices” category were not purchased because IRI data does not distinguish between 100% fruit juice and fruit-flavored drinks that contain a small percentage of juice. Therefore, PGP only purchased data for fruit drink mixes, such as Hawaiian Punch and Kool-Aid. In addition, PGP did not purchase data on zero calorie sodas, cocktail or alcohol mixes (such as alcohol-free Bloody Mary mix or margarita mix), or dairy-based drinks such as drinkable yogurt or milk. The table below provides more information on the categories and brands of data that were purchased from IRI.

Category	Types of Beverages Included
Sodas / Soft Drinks	<ul style="list-style-type: none"> → Full-calorie/ regular soda and soft drinks → Low calorie / calorie reduced soft drinks which contain added sugar
Sports Drinks	<ul style="list-style-type: none"> → All sports drinks, including popular brands such as Gatorade and Powerade
Water	<ul style="list-style-type: none"> → Individually bottled water → Water sold by the gallon → Seltzer / sparkling / mineral water
Fruit Drink Mixes	<ul style="list-style-type: none"> → Hawaiian punch → Kool-aid

Data were purchased from an 8-week time-matched period from September 17 - November 11, 2017 (pre-campaign) and September 17 - November 11, 2018 (post-campaign). Data were provided to PGP in ounces sold, dollars sold, and units sold. For the purposes of this report, data were only analyzed on ounces sold because results in dollars do not take into account annual inflation rates, and units are sold in varying sizes - typically from 8oz to 32oz. Data were analyzed across the aforementioned beverage categories and brands to compare the percentage change in beverage sales of fluid ounces between the periods. Analysis also compared the percentage change in ounces by various geographical regions, including: 1)Passaic County; 2)New Jersey; and 3)the United States. In order to compare the geographies as a whole during analysis, Passaic County was excluded as part of data for New Jersey, and New Jersey was excluded as part of data for the United States.

Data were adjusted to account for per capita beverage sales by dividing the ounces sold by the estimated populations of each geographical area to obtain per capita beverage sales in ounces sold. To account for the relative differences in population change for Passaic County, state of New Jersey, and the United States between the pre-intervention period and the post-intervention period, census data were used for the United States, while the estimated population sizes for Passaic County and New Jersey were calculated based on their 2017 estimates and mean 7-year annual percentage change, calculated at a monthly basis.^{18 19}

Results

The percent change in ounces purchased per capita for, sodas/ soft drinks, sports drinks, and fruit mixes showed a decrease. For all SSBs noted below, the decrease was the largest in

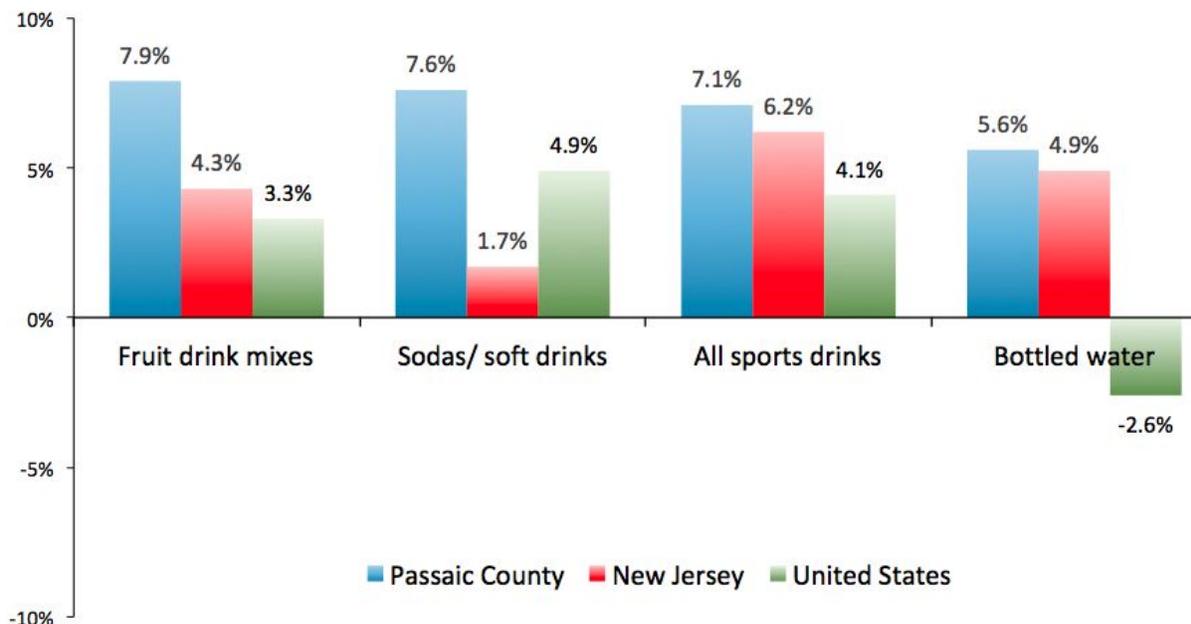
¹⁸ US Census Bureau. "Population and Housing Unit Estimates." Census Bureau QuickFacts, United States Census Bureau, 7 June 2018, www.census.gov/programs-surveys/popest.html.

¹⁹"U.S. Census Bureau QuickFacts: Passaic County, New Jersey; New Jersey." Census Bureau QuickFacts, United States Census Bureau, 2017, www.census.gov/quickfacts/fact/table/passaiccountynewjersey,nj/PST045217.

Passaic County. As previously mentioned, throughout the campaign additional resources were devoted to implementation in Passaic County. Purchasing patterns of both fruit drink mixes and sports drinks showed a potential dose-response effect based on the intensity of the intervention. That is, SSB purchases decreased the most in Passaic, followed by New Jersey, and the United States. This pattern was seen most clearly with fruit drink mixes, showing a 7.9% decrease in Passaic, 4.3% in New Jersey and 3.3% in the United States. While sales of all sodas/ soft drinks showed the largest decrease in Passaic County (7.6%), New Jersey's decrease was less, at 1.7%, compared to a 4.9% decrease across the United States.

It is also important to note that purchasing of bottled water decreased in Passaic and New Jersey, at a 5.6% and 4.9% decrease, respectively. However, these results should be interpreted with a bit of caution. The decrease in bottled water purchasing could be due to the fact that individuals have shifted to drinking filtered tap water. IRI sales data only include purchases of individual bottles or gallons of water, and cannot account for purchases of water filters or consumption of tap water. Results from sales data offer an important comparison of consumer patterns across the three geographies. Passaic County is an area with a high population of lower income African American and Hispanic residents, a group that shows typically displays higher rates of SSB consumption when compared to the general population. The promising sales data findings suggest that the campaign had the intended effect of reducing SSB purchasing - and ultimately consumption - among the target audience.

Percent Decrease in Ounces Sold per Capita



Limitations

One limitation of these results is that it is unknown whether macroeconomic or macrocultural factors have caused the various decreases in SSB consumption at the different geographical levels. Due to the fact that these data are independently gathered, PGP is unable to use these results to show that awareness of the campaign has caused a direct decrease in purchasing patterns. Regardless, Passaic consistently showed a larger decrease in SSB purchasing, compared to the United States. In its most striking difference, the United States showed a 3.3% decrease in fruit drink mix purchasing, compared to a 7.9% decrease in Passaic County during the same period. This represents a large net yearly decrease in purchasing, suggesting that an independent effect on SSB consumption may have been the result of the campaign.

MEDIA MONITORING

Methods

PGP monitors and analyzes media mentions around sugar-sweetened beverages. Data consist of publicly available messages transmitted across multiple media sources. Sources include:

- Social and digital media such as Twitter, Instagram (IG), Facebook (FB), YouTube, Vimeo, online forums, online Q&A websites, review sites, and many more.
- Online media such as news sites and blogs.
- Print media such as trade journals, magazines, and newspapers.
- Broadcast television.

Data collected are contingent upon a keyword query constructed by PGP researchers using Boolean search methodologies (using AND and EXCLUDE terms). Words included in the keyword query are selected based on peer-reviewed literature and PGP's experience with the software tool functionality.

In order to examine the full scope of conversation around SSBs, PGP initially began with a broad search query, collecting all messages written in English and Spanish that included any terms related to: sugary drinks, sugar-sweetened beverages, sweet drinks, and common types of sugar or sweeteners used in SSBs, as well as iterations and abbreviations of these terms. Types of SSBs such as soda, juice, fruit punch, etc. were also included, as well as common brand name SSBs (both mainstream brands and those specific to the Spanish-speaking audience).

After gathering any mention of SSBs across all publicly available data, PGP then created a complex coding scheme to qualitatively analyze and assign those messages into main themes. For the purposes of this report, all analysis was focused on the themes that were covered in some way throughout content creation. Themes five themes analyzed are as follows:

Theme	Definition
Fruit Juice & Fruit Drinks	Messages reference fruit juice specifically, as well as fruit flavored drinks like Hi-C or Capri Sun.
Negative Health Effects	Messages reference various categories of negative health outcomes.
Children & Teens	Messages reference the impact of SSBs on children and teens specifically, rather than on the general population.
Policy & Soda Tax	Messages reference the policy and legislation related to SSBs.
Choose Water, Quit Sugar	Messages reference the desire to stop drinking SSBs / to drink water instead of SSBs

Results

Analysis below provides a snapshot of how the volume and content of conversation has trended over time. The data collection period spanned from September 25, 2017 - December 22, 2018. In order to compare online discourse trends throughout the campaign period, data were analyzed and compared from three time points: 1) Pre-campaign period (September 25, 2017 - November 30, 2017); 2) Campaign period (December 1, 2017 - September 30, 2018); and 3) Post-campaign period (October 1, 2018 - December 22, 2018). While PGP collects Spanish and English-language posts separately, for the purposes of this report data from all posts were analyzed in aggregate. This is due to the fact that posts that used Spanish often include English-language hashtags, or include a mix of Spanish and English. Additionally, the Spanish-language data was substantially smaller than the English-language data.

Trends in Total Mentions - New Jersey

Overall online conversation about SSBs was analyzed to understand general trends in discussion. Data from total mentions about SSBs were analyzed in two ways:

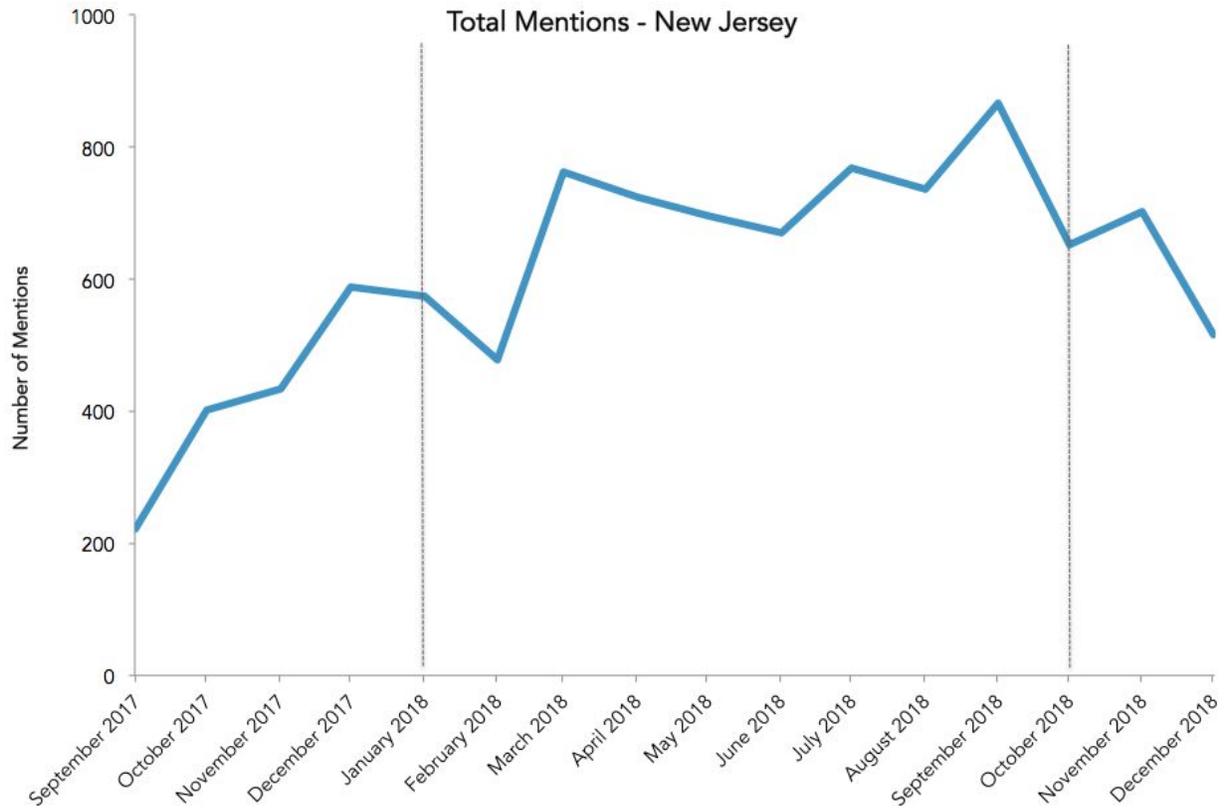
- Total mentions provide a running count of all SSB-related mentions across all sources, (i.e, all of the instances in which an individual or organization referenced or shared a post about SSBs). Total mentions were examined across the three time periods. Average mentions are calculated by dividing total mentions by the number of days during the time period examined.
- In order to understand how trends in conversation overall changed by month, total mentions are also presented in a trend line which shows the total number by month.

When examining average mentions per day across New Jersey, results showed an increase of 66.9%, from 13.6 mentions per day at baseline to 22.7 mentions per day during the campaign period. Importantly, mentions maintained their high levels post campaign, at an average of 23.1 mentions per day, a 69.9% increase over baseline. This substantial increase in conversation is a noteworthy finding, and suggests that people across New Jersey have been more exposed to messages about SSBs both during and after the campaign period when compared to pre-campaign. The table below presents information on the average mentions per day and the total number of mentions per period across New Jersey.



	Baseline	Campaign	Post-Campaign
<i>Average per day</i>	13.6	22.7 <i>↑ 66.9% from baseline</i>	23.1 <i>↑ 69.9% from baseline</i>
<i>Total mentions (over 66 days)</i>	871	6,866 <i>Total mentions (over 303 days)</i>	1,871 <i>Total mentions (over 81 days)</i>

As a means of providing further context to the mentions by time period, the trendline below shows the total number of mentions by month, from the beginning of data collection. The start and end of the campaigns are denoted by the two dotted lines. Results showed that discourse around SSBs pre-campaign was considerably lower than that observed in 2018. Conversation toward the end of 2017 showed a steady increase, perhaps due to the holiday season which is typically marked by more discussion around themes related to both food and health. Starting in mid-January 2018 and onward, conversation around SSBs increased substantially, the initial increase coinciding generally with the launch of the campaigns. While total conversation showed some spikes and dips throughout the year, it typically remained stable, until a decline around September 2018. Despite this decline, overall conversation still ended higher than the amount of conversation pre-campaign. Both the initial increase and final decline correspond to the campaign period, suggesting that the campaigns played a part in increasing conversation around SSBs across the state. Continued monitoring of online conversation around SSBs will provide additional context on the ways that the campaigns have impacted long-term discourse. For the full trend line, see the chart below.



Trends in Total Mentions - National

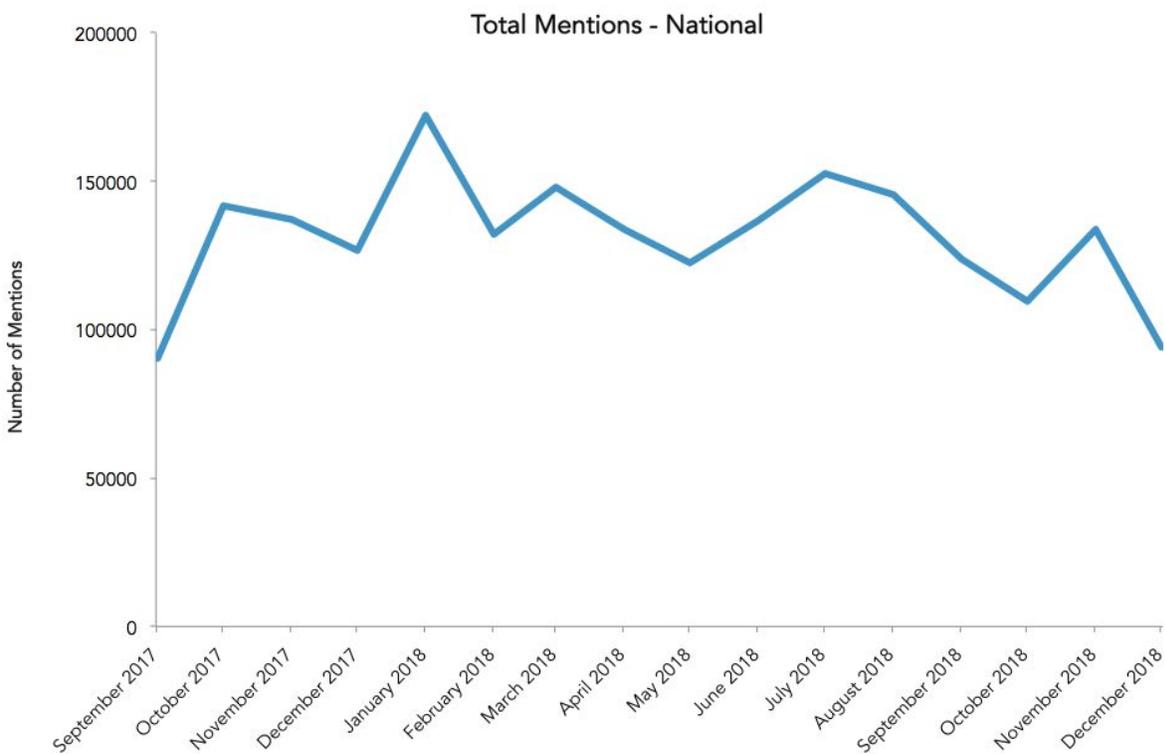
Data from national conversation are examined as a means of comparing whether trends seen at the statewide level are replicated in national conversation, or if they are unique to New Jersey. In comparison to New Jersey’s substantial increase in average mentions per day, nationally average mentions only increased by 4.9% from baseline to campaign period, followed by a substantial 7.8% decrease in the post-campaign period. Therefore, the considerable increase observed in New Jersey appears to be a pattern that was not held nationwide. For more information on total and average mentions, refer to the table below.



National

	Baseline	Campaign	Post-Campaign
Average per day	4,513.4	4,736.4 ↑ 4.9% from baseline	4,161.9 ↓ 7.8% from baseline
Total mentions (over 66 days)	265,721	1,435,140 (over 303 days)	337,113 (over 81 days)

As shown in the chart below, national conversation trend lines also present a different story than that observed in New Jersey. Unlike statewide data, national conversation toward the end of 2018 ended in almost the exact place where it began in 2017. Throughout the data collection period overall, conversation showed a few large spikes, but remained predominantly consistent, with no steady growth. Had the US-level data shown the same trends as New Jersey, it could be assumed that statewide data simply followed national trends. However, this appears to not be the case. This further supports the assumption that PGP’s SSB campaigns had an impact on overall conversation. For more information on monthly trends in conversation throughout the data collection period at the nationwide level, see the chart below.



Trends in Themes - New Jersey

Examining trends in the themes discussed throughout the data collection period allows for an understanding of ways that the content of conversation has shifted. As previously mentioned, mentions about SSBs are coded into a theme using advanced qualitative analysis (machine learning and Artificial Intelligence). It is important to note that not all conversation about SSBs can be easily coded into a theme, which is typical of qualitative analysis.

The major themes related to campaign content included conversation around: children and teens; choosing water over SSBs; fruit juice or fruit drinks; negative health effects of SSBs; and

SSB policy. Due to the nature of the keyword coding mechanism which creates and analyzes themes in the platform, the system is not able to differentiate between qualitative sentiment variations within a theme to separate them quantitatively. For example, messages within the “SSB Policy” theme that expressed support for taxes on sugary drinks were counted together with those who were critical of the policy. Thus, the theme represents total conversation about policy, not support or opposition. It is also important to note that one post about SSBs could be coded into multiple themes. For example, a post about the importance of choosing water over SSBs to improve the health of children would be coded into both “Children and Teens” and “Choose Water.” Therefore, the data below do not present distinctly different conversations about the themes, but rather show the general trends in discourse over time. Data from themes were analyzed in two ways:

- Themes were examined to understand how the percentage of all SSB conversation around certain themes changed from baseline, campaign period, and post-campaign. The proportion of conversation around each theme was calculated out of the total conversation during different campaign phases. This allows for an understanding of how the size of themes have changed, while accounting for changes in total conversation, throughout the three identified time periods.
- In order to examine how themes changed month-by-month, themes are also presented in trend lines which show the total number of themes by month. Results below report on both methods of analysis, separated by theme.

Fruit Juice / Fruit Drinks: During all campaign phases, fruit juice/ fruit drinks showed the highest levels of discussion compared to other themes, accounting for around 30% of conversation during all three phases examined (before, during, and after the campaign). When examined by month, conversation showed a gradual increasing trend throughout the campaign period, and peaked during June - August 2018. Although conversation around the theme decreased thereafter, discourse still remained the same or higher than pre-campaign levels. A clarification is important here - although the proportion of conversation around fruit juice/ fruit drinks declined from baseline to campaign and post-campaign period, these declines were due to the fact that overall conversation increased during these times.

SSB Policy: SSB policy conversation showed a staccato pattern, with general discourse remaining constant from baseline to post-campaign, but with sharp peaks at three main intervals throughout the year. This resulted in an increase from baseline (6.1% of conversation) to the campaign period (8.9% of conversation), and a subsequent decrease in post-campaign conversation around policy (3.6% of conversation). The increases in conversation were all related to specific news stories or events. The first peak in January 2018 was caused after Seattle began implementing a 1.75 cents per fluid ounce tax on all sugary drinks; the second peak in April was due to conversation about a tax imposed in the UK; and the final peak in August 2018 was prompted by news about a bill that was proposed in California which would compel restaurants to provide water, sparkling water, flavored water or unflavored milk as a “default beverage.” In general, conversation around policy outside of these events was stable throughout the entire data collection period.

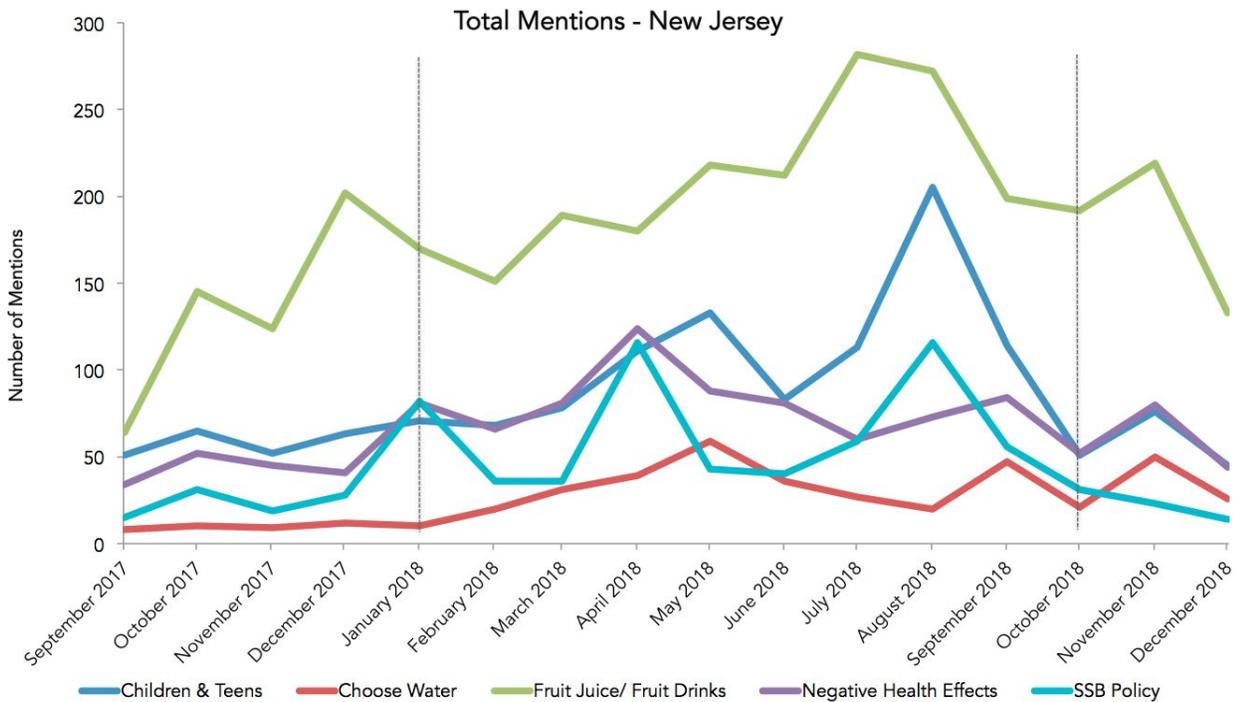
Negative Health Effects: The proportion of overall conversation that discussed the negative health effects of SSBs remained the same during the baseline and campaign period, accounting for 11.3% of total conversation during both time periods. When examined by month, discussion related to health effects increased steadily from January - April 2018 and remained relatively high until September 2018, when it decreased, aside from one small uptick in November 2018. Conversation about negative health effects appears, in part, to coincide with conversation about SSB policies, implying that discourse about policies also generally includes mention of the health impacts of SSBs as a justification for the policy. For example, the main increase in this theme was seen in April 2018, which overlapped with the implementation of a tax on SSBs in the UK.

Children and Teens: Conversation around children and teens showed a steadily increasing pattern throughout the campaign period, culminating in a large increase in August 2018. This increase corresponded with California’s bill to compel restaurants to provide non-SSB options as the first choice. From baseline to the campaign period, the proportion of conversation related to child and teens increased from 14.4% at baseline to 15.1% during the campaign period. After the main increase in August, conversation related to this theme dropped. By October, the amount of conversation in this theme had returned near pre-campaign levels.

Choose Water, Quit Sugar: Conversation around water showed the most interesting trends across all themes. Much of PGP’s campaign content focused on choosing water over SSBs, and results suggest that this messaging had an impact on overall conversation about water. The proportion of discussion about the importance of choosing water over SSBs nearly doubled, from 2.5% of pre-campaign conversation to 4.4% of conversation during the campaign, and remained higher post-campaign at 5.2%. By month, trends in this theme showed a steady increase from January 2018 until the end of the data collection period. This is an important theme to note because, even though this theme showed the smallest proportion of conversation at baseline, it gained slow traction throughout the data collection period, and ended substantially higher than when it started.

The table and chart below present more information on trends by theme across New Jersey. As previously mentioned, data shown below should be interpreted as general content trends, given that information presented below represents only a portion of all data collected.

<i>Proportion of Theme Within Overall Conversation</i>			
Theme	Baseline % of conversation	Campaign % of conversation	Post-Campaign % of conversation
Fruit Juice/ Drinks	31.8%	30.2%	29.1%
Children & Teens	14.4%	15.1%	9.2%
Health Effects	11.3%	11.3%	9.4%
Policy & Tax	6.1%	8.9%	3.6%
Choose Water, Quit Sugar	2.5%	4.4%	5.2%



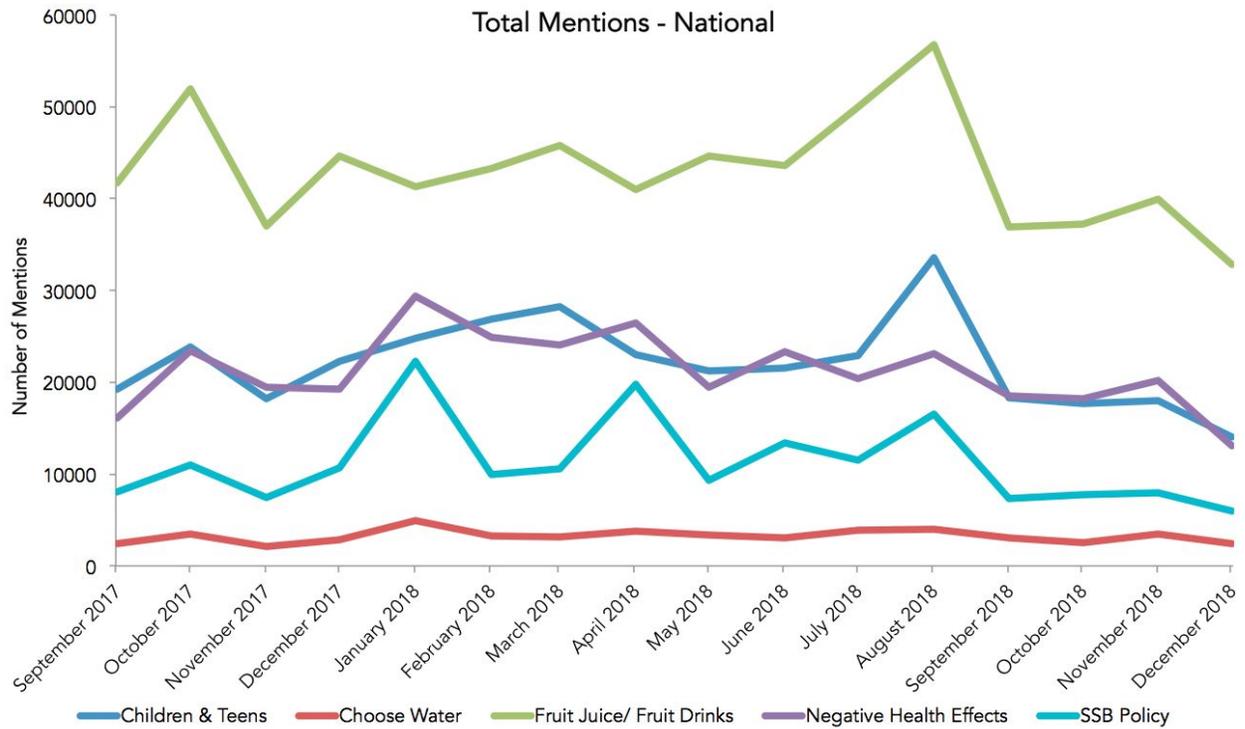
Trends in Themes - National

In comparison to the results from New Jersey, national conversation showed some distinct differences. Aside from a few notable increases, themes overall remained relatively stable. Conversation around fruit juice/ fruit drinks did not show an increase throughout the data collection period, and at the end of 2018, conversation about this theme was actually lower than 2017 levels. This compares to New Jersey’s steady monthly increase in conversation about fruit juice/ fruit drinks. Further, unlike New Jersey’s increase in conversation about choosing water over SSBs, nationwide this theme was almost entirely flat the entire data collection period and accounted for less than 3% of total conversation. These differences indicate that conversation across New Jersey was affected by trends and changes in discourse that were not observed nationwide. Based on these differences with nationwide trends, it suggests that PGP’s SSB campaigns had a sustained impact on discourse within the state.

In addition to these differences, nationwide conversation also showed some similarities to statewide conversation. Similar to New Jersey, conversation around SSB policy spiked around certain events, and then returned to its baseline levels. Additionally, conversation around negative health effects almost identically mirrors conversation around policy, similar to that seen in New Jersey. The children and teens theme also showed similar patterns, peaking in August 2018 when California proposed their bill to provide non-SSBs as a first choice. The chart below presents more information on trends by theme nationwide.

Proportion of Theme Within Overall Conversation

Theme	Baseline % of conversation	Campaign % of conversation	Post-Campaign % of conversation
Fruit Juice/ Drinks	32.1%	31.2%	32.6%
Health Effects	15.6%	14.8%	15.2%
Children & Teens	15.4%	16.8%	14.7%
Policy & Tax	6.7%	8.9%	6.4%
Choose Water, Quit Sugar	2.1%	2.5%	2.5%



KEY TAKEAWAYS AND NEXT STEPS

PGP's multi-pronged SSB-reduction campaign has made a positive impact on SSB-related knowledge, attitudes, and behavior in New Jersey.

Utilizing multiple sources of data to evaluate campaign impact, results show:

1. A substantial decrease in the sales of fruit drink mixes, sports drinks, and sodas/ soft drinks.
2. Positive trends toward increased self-reported water consumption and decreased soda consumption. Survey results also showed decreases in those who frequently have SSBs available in the home, as well as a decrease in perceived acceptability of allowing children to consume soda.
3. An increase in media conversation related to SSBs across New Jersey, both during and after the campaign. Conversation monitoring also showed increases in messages related to campaign topics, particularly the importance of choosing water over SSBs. This pattern was not observed at the national level, which remained flat throughout the data collection period.

In order to examine the collective impact of the NJ Sugarfreed, Natural Beauty Sugarfreed, and Sugarfreed Belleza campaigns, a multi-layered, technology-driven approach was utilized. Results from this report present the first time that a campaign has combined analysis from traditional academic surveys, SSB sales data, and examination of online big data discourse to understand changes related to SSB consumption. Key takeaways from the analysis presented above are as follows:

PGP's use of multiple innovative data sources allows for a deeper understanding of the complexities of behaviors related to SSBs.

PGP is the first organization to use both beverage sales and media monitoring as a means of understanding behavior change among a target audience, and as a metric to gauge campaign success. Online surveys are used as a complementary method, to ground the data in established and validated measures that evaluate changes in knowledge, attitudes, and behaviors (KABs). By triangulating these three data sources, this evaluation presents a report of consumption and purchasing behaviors in a more full and nuanced manner. For example, the online evaluation showed that reports of past-week purchasing of SSBs in Passaic remained constant from baseline to post-campaign. However, as shown in the IRI sales data, purchasing of SSBs declined both in Passaic County and statewide. We theorized that although individuals may still be purchasing SSBs from the store, they are purchasing fewer than they did pre-campaign. This behavior pattern was not reflected in the online evaluation which only asked for the number of times any SSB was purchased in the past week.

Soda purchasing and consumption patterns show clear improvements throughout the campaign period, with water consumption and purchasing presenting a more nuanced story.

Sales data showed a clear reduction in soda purchasing both throughout Passaic County, and across the state. This is corroborated by the evaluation survey, which showed that from baseline to follow-up, all respondent groups examined - the overall sample, priority audience, and Passaic County - showed increases in those who report not drinking soda at all. However, data on water consumption presents a more nuanced story, with IRI data showing that purchases of bottled water decreased both in Passaic and in New Jersey. However, examination of results from the evaluation survey shows that both respondents across New Jersey and Passaic County report increased water consumption patterns - particularly in Passaic County which showed a substantial 9.5 percentage point decrease in respondent consumption of 0-2 glasses of water per day, and a resulting increase in consumption of 5 or more glasses of water per day. We theorized that the IRI results could be due to the fact that individuals have shifted to drinking filtered tap water instead of purchasing bottled water, which is a metric not captured by the IRI sales data. Mirroring is an important aspect of child development, and children are more likely to consume SSBs if they see their parents also regularly consume SSBs. For example, one study suggested that children are almost three times more likely to drink carbonated sugary drinks if they see their parents do the same.²⁰ Therefore, the observed increase in water consumption and concurrent decrease in soda consumption implies that children will follow similar beverage consumption patterns.

Knowledge and attitudes toward the health consequences of SSB consumption showed increasing trends, particularly among respondents in Passaic County. However, work needs to be done in educating individuals about the full range of potential health effects.

Results from the online survey showed several important increases in knowledge from baseline to follow-up. Most respondents were aware that consuming SSBs increases the risk of tooth problems, with all groups showing an increase in agreement. A vast majority of respondents also still feel confident that they can decrease the number of SSBs their children drink, and that they can choose healthy alternatives. Most interestingly, residents from Passaic County showed a statistically significant increase in those who report being aware that SSBs can cause long-term health consequences for children. Despite this increase, there is still work that needs to be done in educating the public about what is considered an SSB, as well as about lesser known health consequences of SSB consumption, such as links to cancer and heart disease. When examining the path to behavior change, increasing knowledge about SSB-related health consequences is an important step, and increased knowledge should continue to be a goal for future campaigns.

²⁰ Derbyshire, Emma. "'Drink as I Do' The Influence of Parents' Drink Choices on Children." Natural Hydration Council, Sept 2016. www.naturalhydrationcouncil.org.uk/wp-content/uploads/2016/08/NHC_Drink-as-I-do-report_Final.pdf.

Online discourse about SSBs shows patterns that are unique to New Jersey and not reflected nationwide, suggesting that the campaign had an impact on conversation related to SSBs and water throughout the state.

PGP's media monitoring provides previously unavailable data for monitoring of issues important to understanding behaviors surrounding SSBs. Analysis of conversation monitoring showed several important trends among overall discourse within the state. The average number of total mentions in the state increased almost 70%, from almost 14 mentions per day at baseline to around 23 mentions per day both during the campaign period and post-campaign. In comparison, conversation at the national level increased slightly during the campaign period, and ultimately decreased post-campaign. When examined by theme, conversation around choosing water over SSBs increased from baseline through the campaign period and post-campaign. Making the choice to drink water instead of SSBs was a central campaign theme, and likely played into this increase in discourse.

APPENDIX

The data presented in the report reflect the topics that were most important in gauging the progress of the campaign. However, the following pages expand upon data presented in the Online Evaluation section of the report.

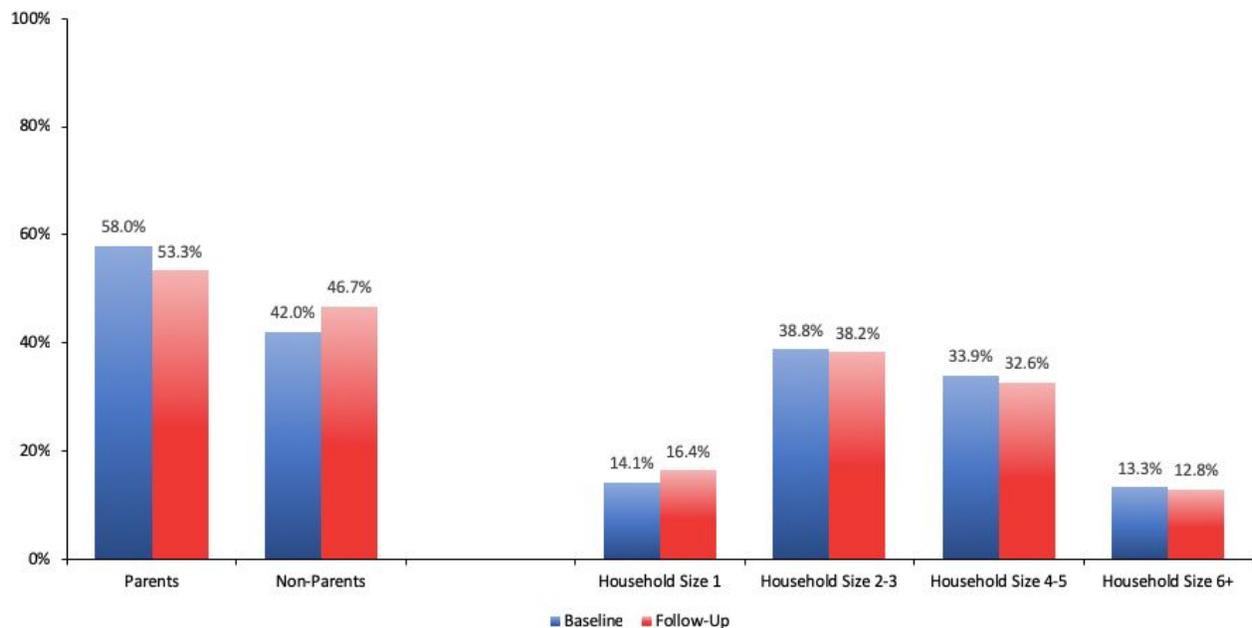
Age & Household Characteristics

Age was categorized as 18-25, 26-35, and 36+. During baseline, age was evenly distributed among all 3 categories. During follow-up, age distribution following similar patterns, with 33.6% 18-25, 29.5% 26-35, and 36.8% 36+.

Respondent Age Groups		
	Baseline	Follow-Up
18-25	34.9%	33.6%
26-35	32.8%	29.5%
36+	32.4%	36.8%

Household sizes were similar between baseline and follow-up, with the largest percentage of respondent having a household size of 2-3, following by a household size of 4-5. Over half of respondents reported to be parents during baseline and follow-up.

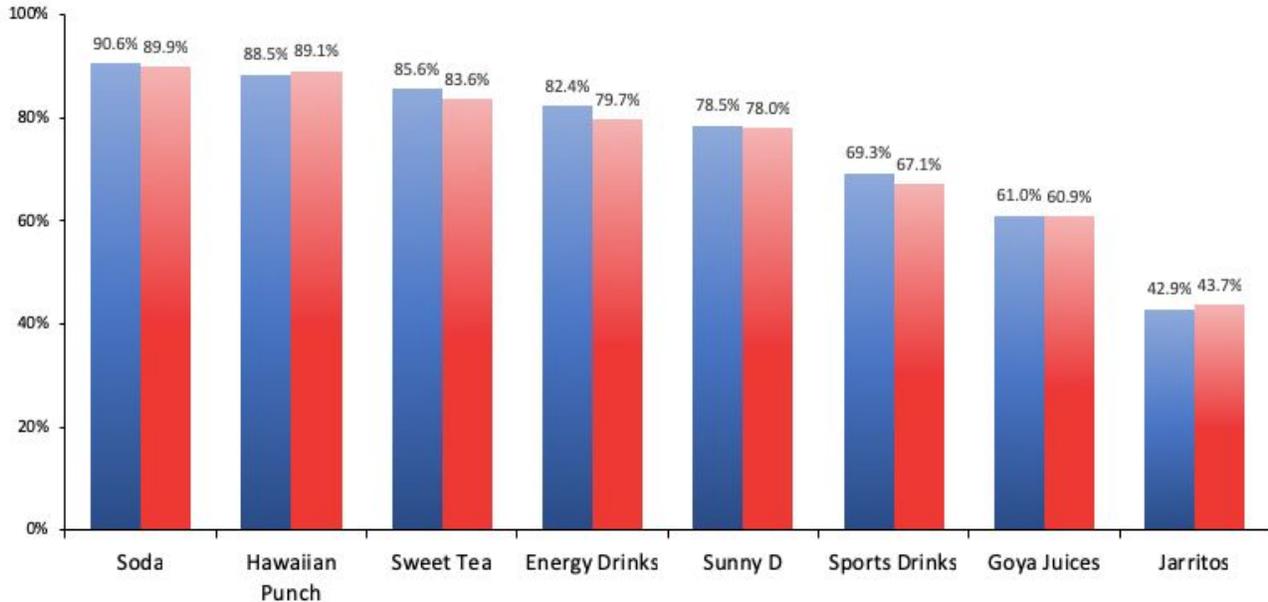
Household Characteristics



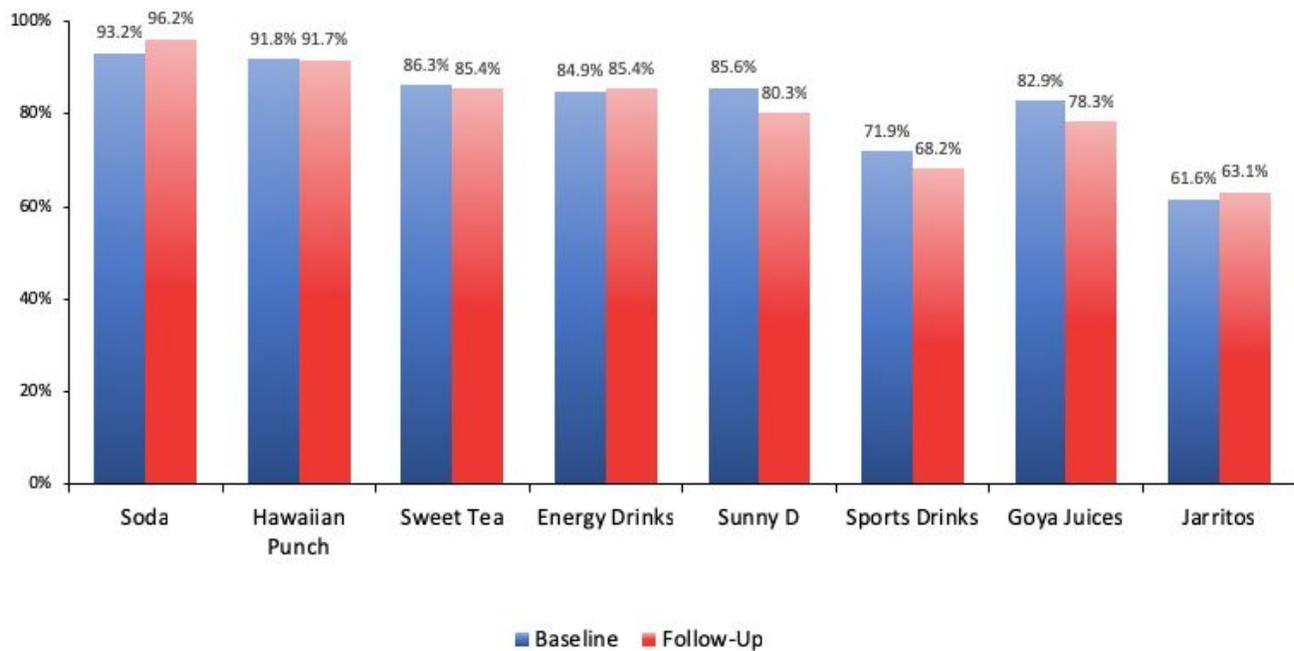
Awareness of SSBs

The charts below show the percentage of respondents who correctly identified SSBs from the overall sample, Hispanic Moms, and African American Moms. For this particular chart, results from the priority audience are shown in separate charts, given their cultural differences on a few key measures, including Jarritos and Goya juices, as described in the narrative above.

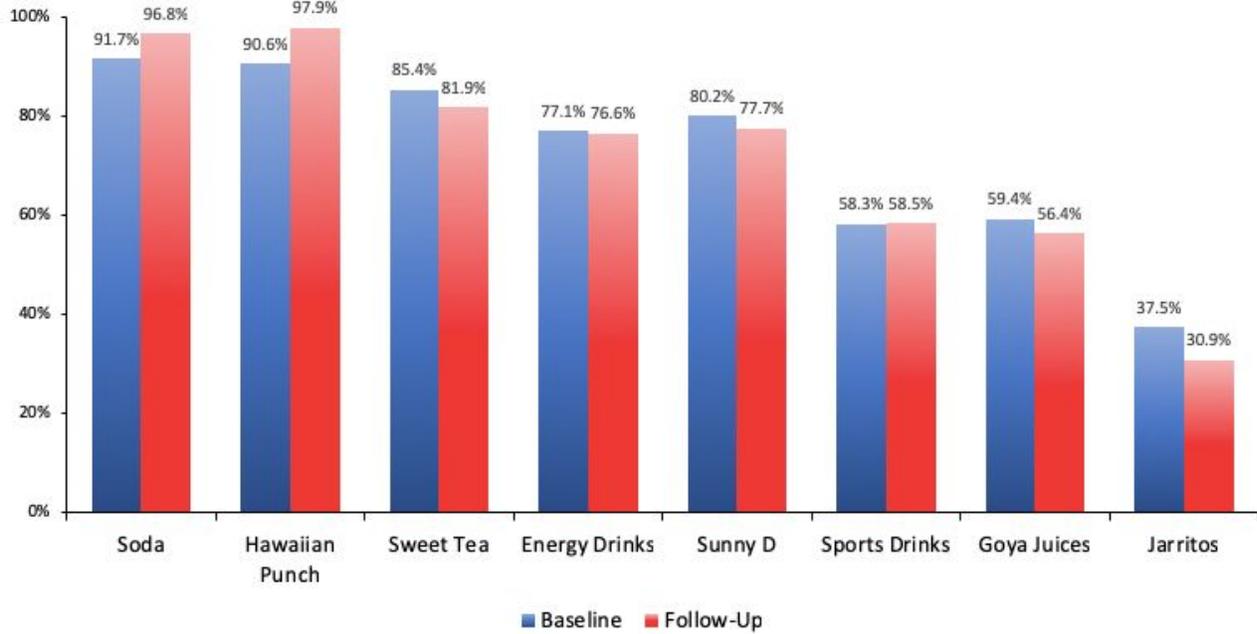
Overall Sample - Identification of SSBs



Hispanic Moms - Identification of SSBs



African American Moms - Identification of SSBs



Consumption of SSBs Other than Soda

The table below presents more information on respondent consumption of SSBs other than soda (including Kool-aid, lemonade, sweetened teas, and sports/energy drinks). Results remained stable from baseline to follow-up across all groups. During follow-up, a higher proportion of Hispanic and African American moms and Passaic County residents reported drinking other SSBs always or most of the time. There was also a slight decrease in Passaic County residents who reported never drinking other SSBs from baseline to follow-up. Given that there is still a high proportion of respondents who consume other SSBs frequently (always or most of the time), there still room to improve on the portion of people who “never” consume other SSBs.

During the past 30 days, how often did you drink sugar-sweetened drinks aside from soda (such as Kool-aid, lemonade, sweetened tea, and sports/ energy drinks)?

	Overall Sample		African American & Hispanic Moms		Passaic County	
	Baseline	Follow-Up	Baseline	Follow-Up	Baseline	Follow-Up
Always/ Most of the time	24.5%	23.5%	24.8%	28.6%	27.6%	27.6%
Sometimes/ Half the time	58.6%	59.2%	61.5%	58.0%	56.6%	55.1%
Never	16.9%	17.3%	13.7%	13.4%	14.5%	12.2%

Agreement on Knowledge & Attitude Questions

Measures that gauged respondent knowledge and attitudes about SSBs are presented below, in order of the highest percentage in agreement to the lowest percentage in agreement, at baseline. Percentages in the table are reported for respondents who chose “Agree” or “Strongly agree.” The highest proportion of respondents correctly identified weight gain and loss of teeth as consequences of SSBs. Perceptions of sports drinks such as Gatorade and Powerade as being “healthy” and knowledge of cancer as a risk scored the lowest percent of agreement.

Measure	Overall Sample		Hisp and/or AA Mom		Passaic County	
	Baseline	Final	Baseline	Final	Baseline	Final
Sugar-sweetened drinks are a main cause of weight gain.	76.9%	75.8%	80.4%	83.2%	81.6%	76.5%
Drinking sugar-sweetened drinks increases your risk of losing your teeth.	74.1%	76.2%	77.0%	79.6%	75.0%	75.5%
I feel confident that I can decrease the amount of sugar-sweetened drinks my children drink.	72.4%	71.9%	76.1%	77.0%	60.5%	78.6%
Sugar-sweetened drinks are a main cause of diabetes.	71.1%	70.1%	79.1%	74.3%	72.4%	72.4%
I am trying to drink fewer sugar-sweetened drinks.	70.4%	71.7%	74.8%	77.4%	65.8%	70.4%
I feel confident in my ability to choose healthy alternatives to sugar-sweetened drinks.	70.0%	67.8%	72.2%	71.7%	73.7%	61.2%
Sugar-sweetened drink consumption can cause long-term health consequences for children.	69.8%	68.9%	68.7%	71.2%	60.5%*	70.4%*
Drinking sugar-sweetened drinks increases your risk for heart disease.	64.4%	62.7%	65.2%	65.9%	69.7%	67.3%

Measure	Overall Sample		Hisp and/or AA Mom		Passaic County	
	Baseline	Final	Baseline	Final	Baseline	Final
Most people I know are trying to drink fewer sugar-sweetened drinks.	62.0%	60.5%	63.9%	63.7%	59.2%	60.2%
The number of sugar-sweetened drinks I drink is not enough to cause health problems.	50.4%	47.6%	51.7%	40.3%	40.8%	50.0%
The number of sugar-sweetened drinks my children drink is not enough to cause them health problems.	49.6%	51.6%	52.6%	50.0%	37.2%	55.4%
Drinking sugar-sweetened drinks is fine as long as you have a balanced diet.	45.6%	43.7%	42.2%	46.0%	43.4%	35.7%
Sports drinks like Gatorade and Powerade are ok to drink because they are healthy.	31.4%	28.8%	34.3%	34.1%	30.3%	31.6%
Drinking sugar-sweetened drinks increases your risk for cancer.	37.4%	36.6%	35.2%	35.0%	38.2%	43.9%