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How Sweet It Is:
Perceptions, Behaviors,
Attitudes, and Messages
Regarding Sugary Drink
Consumption and Its Reduction

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CENTER FOR
Science IN THE
Public Interest

YALE RUDD CENTER
FOR FOOD POLICY & OBESITY

How Sweet It Is: Perceptions, Behaviors, Attitudes, and Messages Regarding Sugary Drink Consumption and Its Reduction

Executive Summary

We began this project with the seemingly simple goal of identifying a clear term that advocates can use universally to describe the category of products known by a variety of names: sugary drinks, sugar-sweetened beverages, sugar loaded beverages, etc. We wanted to help create a unified front against those that wish to sell their products indiscriminately to a population that has been numbed to the truth. Our aim has never been to eliminate sugary drinks completely – just to educate individuals about what they are drinking and encourage them to reduce their consumption to more appropriate levels[1].

To aid in this goal, we have partnered with the Center for Science in the Public Interest and Yale's Rudd Center for Food Policy and Obesity. Both agencies have a track record for taking on tough challenges as it relates to food consumption and policy. As sugary drinks have been shown to contribute greatly to the expanding waistlines of the average American (especially the average American teen)[1], this issue is rightly top of mind for public health advocates.

As often happens in research, we found much more information in this study than we ever thought we would. Here is what we learned:
• Vulnerable populations such as minorities and children have been targeted by the beverage industry and can benefit the most from outreach efforts to reduce sugary drink consumption.
• The beverage industry has done an excellent job of linking their products with happiness, family, and even patriotism.
• In order to create effective messaging to convince consumers that sugary drink consumption should be limited, we must stay positive and show the benefits of drinking less sugar.
• The ground is fertile for engaging in creative policy measures to curb consumption, but these measures must progress carefully and should be linked to efforts that directly protect children.
• Most people know that sugary drinks contribute to obesity and would like to consume less, however most people have a hard time understanding what is a sugary drink and what is not.
• The term "sugary drinks" is the most effective and appealing term for consumers. It was the most effective term at helping people correctly identify drinks they should avoid and it was appealing as a term that could be used universally for all types of audiences.

It is clear that Americans drink too many sugary drinks, and we must engage this problem head-on. Advocates around the country are already doing so, but the more unified our approach is, the more effective it will be. Our findings are promising, and we see hope for the future. Together we can keep that future bright.

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[1] Ogden Cynthia, Kit Brian, Carroll Margaret, Sohyon Park. Consumption of Sugar Drinks in the U.S. 2005-2008. NCHS Data Brief. 71; 2011.

Purpose of Study

The goal of this research study is to raise awareness and understanding among consumers, public health professionals, and policy makers about consumer attitudes, barriers to change, multicultural knowledge gaps, multicultural perspectives, and marketing insights relevant to sugary drinks, behavior change interventions, and social marketing campaigns aimed at preventing and reducing obesity through reductions in the consumption of sugary drinks.

Partnership Overview

The Center for Science in the Public Interest (CSPI), Yale Rudd Center for Food Policy and Obesity (Rudd), and Interlex Communications, Inc. (Interlex) collaborated on a qualitative and quantitative study of general and multicultural market consumer perceptions, behaviors, and attitudes towards sugary drinks as well as messaging and imagery evaluation to develop a campaign to reduce the consumption of sugary drinks.

About the Authors

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Key Findings

- The most motivating messages for reducing sugary drink consumption among the total surveyed population were:
    - o Sugary drink consumption's negative effects on child health.
    - o Knowing there are healthier options.
    - o Sugary drink consumption's increase risk of obesity.
    - o Knowing that sugary drinks are harmful to health.
- "Sugary drink" is the term that best facilitates correct identification of beverages and elicits positive responses to beverage-related policies.
- Most Americans agree that sugary drink companies contribute to obesity in the U.S.
- It is not clear to consumers what is considered a sugary drink and what is not.
- Most respondents would like to reduce their sugary drink consumption.
- Most respondents think drinking no more than two sugary drinks a week is healthy.
- Most respondents believe non-profit health organizations should not receive financial support from sugary drink companies.
- Most respondents think sugary drink companies unfairly target young children and minorities with their advertising practices.
- The majority of respondents think that sugary drink companies do not care about their health.

Research Objectives

- Evaluate key messages, concepts, and imagery to aid in the development of a communication campaign platform to reduce sugary drink consumption.
- Assess perceptions and attitudes toward sugary drinks.
- Understand and identify barriers and motivations toward supporting policies to reduce the consumption of sugary drinks.
- Identify messaging to strengthen the resolve of the American public to support policies to reduce the consumption of sugary drinks.
- Identify triggers to motivate public thinking to drive political action.
- Understand people's attitudes and support of policies concerning sugary drinks e.g. taxes, marketing restrictions, labeling requirements, etc.
- Evaluate and assess terminology for sugary drinks.
    - o Understand preference, perceptions, and meanings of potential terms for sugary drinks.
    - o Understand knowledge of each term's association with specific beverages.
- Capture target's demographics, behaviors, and psychographics concerning sugary drinks.

Methodology
Quantitative

A national online survey was conducted among general market adults 18 and over. Interlex and Rudd collaborated on the questionnaire design to ensure that all objectives were met among the different target audiences. Interlex also incorporated messaging statements to be evaluated in the online survey.
The survey was executed and fielded by Rudd.

Qualitative

A total of four traditional focus groups were conducted in San Antonio by Interlex. Each group consisted of eight to ten respondents. One group consisted of Spanish-dominant Hispanics, while the other groups consisted of parents with children under the age of fourteen (multicultural), low-income (multicultural), and teen (multicultural) participants.

The focus groups were conducted utilizing the Metaphor Elicitation Technique, a technique that uses pictures and visual imagery to tap into the participant's psyche. Before the focus groups were conducted, respondents were asked to create a collage (using a collection of pre-selected images) that represents how they feel about sugary drinks.

During the groups, respondents explained why they chose the images they did, and they were asked to provide keywords describing their feelings toward sugary drinks. These keywords were put on cards, sorted, and probed to obtain a cluster, or an overall theme, to which they best relate.

Respondents were also asked to construct key phrases that describe their feelings about sugary drinks and their perceived impacts on health. The moderator also probed on how anti-sugary drink campaigns should be communicated, specifically probing on imagery, terminology, and messaging points. In addition,

respondents were asked to evaluate creative concepts and logos using a rating sheet assessing overall preference, motivation to act, and relevance.

Target (Focus Group criteria)
Qualitative:
- Adults 21-55
    - o Multicultural parents (Mix of Caucasian, African Americans, and Hispanic parents of children under the age of 14)
- Adults 21-49
    - o Hispanic (Spanish speaking only)
    - o Low-income (Under $35,000, appropriate ethnic mix)
- Teens 14 to 17
    - o Teen Group (Mix of Caucasian, African Americans, and Hispanics)
- Have consumed soda in the past seven days
- Have not participated in a research focus group in the past 6 months
- Not employed in marketing, advertising, or beverage-related industries

Detailed Analysis and Interpretation
Qualitative Report
Test Procedure
A total of four traditional focus groups were conducted in San Antonio by Interlex. Each group consisted of eight to ten respondents. These groups included Spanish-dominant Hispanics, parents with children under the age of fourteen (multicultural), low-income (multicultural), and teen (multicultural) participants.

Focus Group Outline
- Warm-up/Introduction
- Collage and Free Association
    - o Before participants entered the focus groups they were asked to create their own collages to describe how they feel about sugary drinks
    - o They were also asked to come up with words to describe or categorize sugary drinks
- Concept and Evaluation
    - o Participants were asked to evaluate four creative concepts
- Evaluation of Policy
    - o Participants were asked about their thoughts on proposed sugary drink policies designed to reduce consumption of sugary drinks, and to make suggestions for policy recommendations or community ideas

Subjects

The focus group respondents represent both adult and teen groups shown below.

- Adults (21-55)
  - o Multicultural Parents Group (Mix of Caucasian, African Americans, and Hispanic parents of children under the age of 14)
- Adults (21-49)
  - o Hispanic Group (Spanish speaking only)
  - o Low-income Group (Under $35,000, appropriate ethnic mix)
- Teens (14-17)
  - o Teen Group (Mix of Caucasian, African Americans, and Hispanics)
- Have consumed soda in the past seven days
- Have not participated in a research focus group in the past six months
- Not employed in marketing, advertising, or beverage-related industries

Collage Analysis

Focus group participants were shown the following image prior to creating their respective collages:
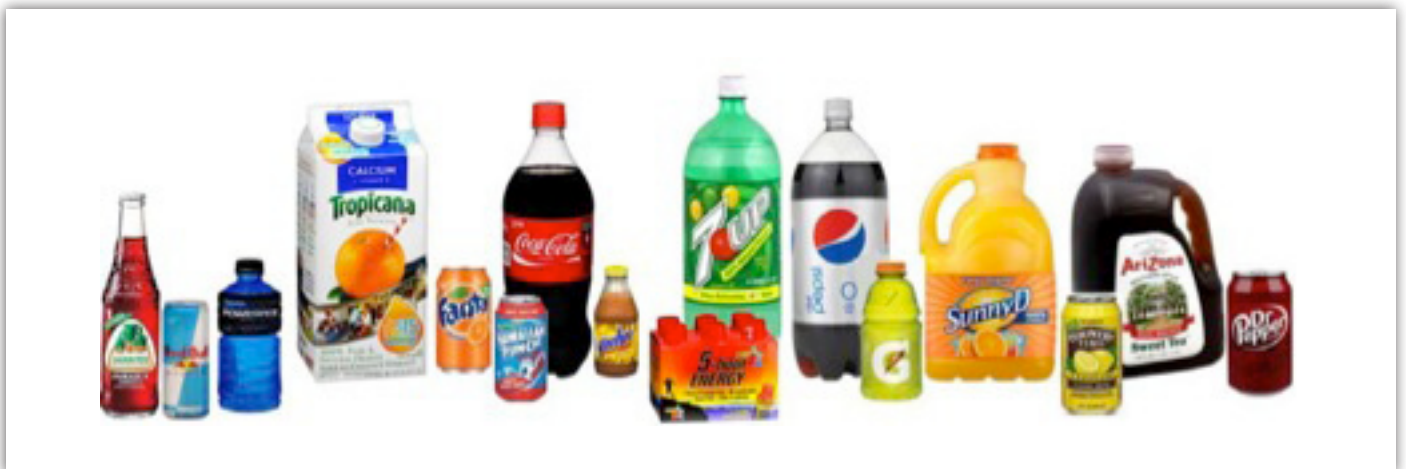
Our analysis of each group participants' collages began with identifying the most frequently used photos and words that described the participants' feelings towards sugary drinks (pictured above). The word clouds presented in this report include the most common photos used among the groups. A larger sized word in the word cloud indicates a greater frequency of use.

Focus Group 1
Spanish-Speaking Parents Image Analysis

The most frequently selected images represented gatherings of friends having fun together with and without sugary drinks. The images also emphasized happiness and joy, and many were action-oriented. In some cases, the images depicted scenarios in which the subjects were actively playing sports and having fun together.

In some of the collages, respondents chose images that showed people alone and the images were mostly positive. In most cases, these images focused on healthy individuals participating in active scenarios like lifting weights or running a race. Within this group, two people did not use any negative words to express their feelings towards sugary drinks indicating their positive perceptions of sugary drinks.

Spanish-Speaking Parents Word Analysis

The words used in the collages to describe their feelings mirrored that of the images selected. They were overwhelmingly positive and included words such as energy, relaxed, comfortable, friends, and healthy. Participants also used words like happiness, energy, and relaxed to describe the benefits associated with drinking some of the sugary drinks. Some participants mentioned that sugary drinks taste good but require exercise, indicating their understanding of the health consequences of over consumption. Participants also linked sugary drinks such as sports drinks and the energy they are thought to provide during exercise or sporting activities.

Focus Group 2
Low Income Image Analysis

The most frequently selected images represented gatherings of friends having fun together, usually *without* sodas present in the pictures. The images were strongly linked with happiness, energy, and companionship. A few images depicted images of individuals exercising. One of the most popular image selections was an American flag. Images were mostly positive, focusing strongly on activity and having fun. A few images were connected to negative concepts, like a chalk outline, and a tired individual in an office scenario. Several of the selected images depicted food, showing a clear link with eating.

Low Income Word Analysis

The words used in the collages to describe their feelings mirrored the images selected. They were overwhelmingly positive and included words such as energetic, refreshed, fun, sweet, and happy. Some respondents within the group used words like quenching, hydrating, and refresh to describe the associated benefits of drinking sugary drinks. Within this group, very few negative words were used; however, headache, tired, bitterness, and restless were used to describe the taste and effects of caffeine. The most common word used to describe sugary drinks was fun, thus showing the connection between sugary drinks and a good life.

Focus Group 3
Teens Image Analysis

Almost all of the teen participants (five out of seven) selected an image depicting three happy teen boys drinking soda. They picked an assortment of images of friends having fun, with and without sugary drinks. Images of solitary individuals were rare, showing a connection between togetherness and sugary drinks. One of the most popular image choices (selected by five out of seven participants) was the American Flag, possibly linking sugary drinks to American identity. Though many of the images selected depicted energy and action, ***the teen audience all included at least one negative image***, showing teens have an awareness of the negative consequences of sugary drink consumption.

Teens Word Analysis

The words used in the teen collages were much more geared towards the concept of energy and the jolt that these drinks provide. Examples of words used to describe the jolt include caffeine, rush, juice (used in context as a synonym for energy), sugar, and energy. Contrary to their understanding of negative consequences exhibited in the image selection, the words they used were overwhelmingly positive. Soda (also used as sodas and soda's) was the most commonly used word, signaling that teens strongly associate sugary drinks specifically with soda.

Focus Group 4
English Speaking Parents Image Analysis

The most frequently selected images represented physical activity, all-American culture, and gatherings. Photos also included friends enjoying hanging out/taking part in physical activity. Selected images depicted subjects in need of a pick-me-up.

Participants also selected images that demonstrated exercising and energy. Images also represented the consequences of over-indulgence in sugary drinks, the dependency they create and the subsequent crash that follows the stimulation from caffeine and sugar.

English Speaking Parents Word Analysis

  Happy and energy were two of the most commonly used words by the English parents. In this group, participants talked about being in need of a sugary drink to boost their energy and then later feeling tired or like crashing. They were able to connect sugary drinks' perceived benefits of energy with the negative consequences of crashing. The group also described sugary drinks as all-American and as something for everyone of all ages to consume together during holidays or parties. Sports drinks made participants think of sports and working out.

Some participants described sugary drinks as sweet and in the case of juice, healthy. Sugary drinks were also associated with fast food and tasting good.

Free Association

Method: Participants were asked to write down words they would use to describe the picture below:

Results:

- A majority of respondents described the above drinks positively using words like energizing, refreshing, and fun (See combined word cloud below).
- Many of the participants did not recognize that drinks were possibly harmful to their health.
- There was a wide perception that some drinks were better for you than others.

Free Association Word Cloud

Terminology

When respondents were asked to come up with a term to categorize the drinks in the picture provided to them, most said drinks with sugar, but many had difficulty coming up with a term on their own.

When respondents were provided several terms to categorize the drinks and asked to rank them (1 being the best and 5 being the worst), the most preferred term was sugary drinks followed by sugary-sweetened beverages.

Table 1: Terminology Ranking

Terms	Rank
Sugary Drinks	**1.60**
Sugar-Sweetened Beverages	2.00
Sugar-Loaded Beverages	2.85
Sodas	3.55

Policy Evaluation

The majority of respondents were in denial and do not see sugary drinks as being harmful to their health. Respondents said they needed to take small steps to make progress in reducing their consumption of sugary drinks.

When asked about potential recommendations to reduce consumption of sugary drinks, most said they would like to see educational campaigns about the health consequences of drinking too many sugary drinks, and they would also support taking vending machines out of public schools.

Multiple groups suggested placing warning labels on sugary drinks. Interestingly, most respondents said they would join a movement to help educate people about the harms of drinking too many sugary drinks.

Quantitative Evaluation of Messaging and Policy Report

Background

Reducing consumption of sugary drinks can be tied to many factors inclusive of implementing a beverage tax, campaign messaging, behavior, awareness, and overall personal beliefs. The Rudd Center for Food Policy & Obesity and Interlex Communications, Inc. developed and administered an Internet survey to identify and analyze those factors that best resonate with respondents.

Test Procedure

The Rudd Center conducted an Internet survey of 1,894 adults recruited through a survey panel administered by Survey Sampling International. Panelists were recruited via thousands of websites to maximize the representativeness of the panel to the online U.S. population. The sample was augmented to include sufficient proportions of Hispanic and African American respondents to allow for analyses of racial and ethnic differences.

Subjects

The survey respondents represent a wide range of demographic groups. There are slightly more females (61 percent) than males. The sample has high proportions of African-American (20 percent) and Hispanic (29 percent) respondents.

Table 2: Demographic Characteristics of Sample (1,894 Respondents)

Survey Language		Sex	
English	83.5%	Female	61%
Spanish	16.5%	Male	39%
Race (Multiple Selections Possible)		**Education**	
African American	20.2%	Some High School or Less	3.7%
Asian/Pacific Islander	2.5%	High School Graduate	25.2%
Caucasian	66.5%	Some College	35%
Native American	1.8%	College Graduate	27.7%
Other	10%	Post-Graduate School	8.4%
Ethnicity		**Political Orientation**	
Hispanic	29.4%	Strongly Liberal	6.1%
Age		Liberal	7%
18-24	15.2%	Somewhat Liberal	8.3%
25-34	22.6%	Moderate	52.5%
35-44	12%	Somewhat Conservative	7.2%
45-54	18.7%	Conservative	8.6%
55-64	19.9%	Strongly Conservative	10.3%
65 and Older	11.6%	**Body Weight** (Self-Described)	
Income		Underweight	4.6%
<$25,000	30%	Normal Weight	50.2%
$25,000-$49,999	32.2%	Overweight	39.5%
$50,000-$74,999	19.8%	Obese	5.7%
$75,000-$99,999	9.8%		
$100,000 or More	8.2%		

Results

Table 3: Percentage of respondents indicating their knowledge and behavior with regards to sugary drinks

	Caucasian (n=1259)	African American (n=382)	Hispanic (n=556)	Republican (n=410)	Democrat (n=785)	Low Income < $25K (n=531)	Education < high school (n=70)	Total (n=1894)
Would you like to reduce your sugary drink consumption?								
Yes	44.5**	56.5**	57.2**	43.4**	53.8**	52.0	58.0	49.3
No	46.5**	30.6**	32.7**	48.8**	36.6**	38.8	26.1*	40.9
How knowledgeable do you feel when it comes to making healthy decisions about nutrition?								
Very knowledgeable/knowledgeable								
	68.4	62.8*	70.3	73.4**	69.0	61.2**	68.1	67.4
How many sugary drinks do you think are healthy to drink in one week?								
0	21.0	16.8	17.6	18.3	21.1	19.4	18.8	19.9
1-2	37.0	42.7	42.1	34.4	41.8	37.9	46.4	39.4
3-4	23.0	26.2	23.9	26.1	23.1	24.5	18.8	23.5
5-7	14.6	9.7	12.2	14.4	11.2	12.6	13.0	12.9
8-14	2.9	1.6	2.9	3.4	2.2	2.8	1.5	2.6
15-21	0.7	1.0	0.5	1.2	0.4	0.9	0.0	0.7
22 or more	0.9	2.1	0.7	2.2	0.3	1.9	1.5	1.1
How old do you think children should be when their parents introduce them to sugary drinks?								
Less than 1 year	1.9	2.9	1.8	2.4	2.2	3.2	5.8	2.3
1-4 years	13.5	12.0	13.1	16.6	11.7	12.1	14.5	13.1
4-6 years	18.4	19.1	21.0	19.0	17.5	18.6	13.0	18.6
6-10 years	20.0	19.1	22.5	18.0	17.6	21.5	17.4	20.1
10 years or older	20.3	24.6	22.8	19.5	26.1	20.9	15.9	21.7
Never	26.0	22.2	18.7	24.4	25.0	23.7	33.3	24.2

*p<0.05, **p<0.01 for significant difference from total percentage (i.e. * indicates robust evidence that the agreement rates for that subgroup are measurably different from the rest of the respondents, and ** indicates very robust evidence that the rates differ for that subgroup)

Respondents were asked to answer questions with regards to their current behavior, knowledge, and beliefs about sugary drinks. (See Table 3)

Behavior

Five of the seven demographic groups responded with assurance (more than 50 percent for each) that they would like to reduce the amount of sugary drinks consumed; however, there was a slight variation in response among the Caucasian and Republican groups as 46.5 percent and 48.8 percent respectively said that they would not like to reduce their intake. Irrespective of this outcome among

Caucasians and Republicans, both responded (68.4 percent and 73.4 percent) convincingly about being knowledgeable when making healthy decisions about nutrition. This resonated among all groups as response rates for being knowledgeable was above 60 percent.

Knowledge

Respondents were also asked how many sugary drinks they think are healthy to drink in one week and were given seven options to choose from. The highest percentages were shown among all demographic groups for the option of consuming 1 to 2 beverages per week.

Beliefs

Adjunct to the above questions, respondents were asked to choose an age when a child should be introduced to sugary drinks. Responses varied, however, four of the seven demographic groups preferred "never" introducing these beverages. The remaining groups (African American, Hispanic, and Democrat) thought 10 years or older was appropriate. While it's true that the majority of respondents agreed that children should be 10 or older before they are fed sugary drinks, it's notable that over 30 percent of respondents thought it is acceptable to introduce these beverages to children at young ages (under 6). The American Heart Association recommends that young children (4 to 8 years) have no more than 12g of added sugar TOTAL per day – that's less sugar than 4oz of Coca-Cola or one CapriSun pouch.

Table 4: Percentage of respondents that "agreed" or "strongly agreed" with messages

	Caucasian (n=1259)	African American (n=382)	Hispanic (n=556)	Republican (n=410)	Democrat (n=785)	Low Income < $25K (n=531)	Education < high school (n=70)	Total (n=1894)
Sugary drink companies contribute to the high obesity rates in the United States								
	56.9	61.3	56.3	51.7**	62.7**	53.7*	60.9	57.3
Sugary drink companies influence food and beverage policy when they give corporate money to elected officials								
	55.0**	53.4	46.2**	51.0	55.3	48.2**	46.4	52.9
Sugary drink companies unfairly target young children and minorities with their advertising practices								
	50.4	55.8*	48.9	46.1*	57.2**	48.8	48.5	50.6
Sugary drink companies are introducing healthier options								
	36.8	37.2	36.7	38.8	36.4	37.3	37.6	36.6
The government should regulate the advertising practices of sugary drink companies								
	33.8**	39.5	41.7**	27.3**	45.1**	36.9	58.0**	36.5
Drinking sugary drinks is just as bad as smoking cigarettes								
	30.3**	48.4**	36.3	29.3**	43.3**	36.2	36.4	35.3
Sugary drink companies are just as bad as tobacco companies								
	31.2**	43.5**	34.9	28.8**	40.1**	35.4	50.7**	35.0
Sugary drink companies are essential to the job market								
	32.3**	43.5**	37.1	34.2	39.1**	35.4	39.3*	34.9
Non-profit health organizations should not receive financial support from sugary drink companies								
	31.9	30.4	34.0	29.5	35.0*	32.8	47.8**	31.8
Sugary drink companies should be fined to offset health care costs related to obesity, diabetes and cancer								
	27.0**	33.3*	34.2**	23.0**	35.0**	30.1	40.6*	29.2
Sugary drinks are part of an active lifestyle								
	24.8**	37.2**	29.1	28.3	31.3**	32.4**	31.6*	27.7
I am more willing to purchase sugary drinks that are partnered with non-profits or community organizations (e.g. American Cancer Society)								
	17.3**	26.4 **	27.9**	18.3	24.3**	23.7*	22.3	20.7
It is OK for sugary drink companies to give corporate money to elected officials or political campaigns								
	19.3	25.4**	22.3	25.4**	22.6*	18.5	29.0	20.4
Sugary drink companies care about my health								
	8.4**	14.1*	16.4**	10.2	13.0**	10.9	12.4	10.6

*p<0.05, **p<0.01 for significant difference from overall percentage

Overall, the messages that best resonated with the survey panel were those about sugary drink companies contributing to high rates of obesity in the U.S. (57 percent agreement), influencing elected officials when they donate money (53 percent), and unfairly targeting youth and minorities (51 percent). Messages comparing sugary drinks to cigarettes or sugary drink companies to tobacco companies did not gain very much support (35 percent for both). Respondents also had low rates of agreement with the two messages about fining or regulating sugary drink companies (29 percent and 37 percent agreement, respectively). Messages that presented sugary drinks and sugary drink companies favorably had little support and included "Sugary drink companies are introducing healthier options" (37 percent support), "Sugary drink companies are essential to the job market" (35 percent), "Sugary drinks are part of an active lifestyle" (28 percent), and "Sugary drink companies care about my health" (11 percent).

Responses to messages varied among different demographic subgroups of the sample. African American respondents were more likely to agree with tobacco-related messaging, with 48 percent of respondents agreed that sugary drink consumption was "just as bad as smoking cigarettes" (as compared to 35 percent in the total sample), and 44 percent of respondents agreed that sugary drink companies were "just as bad as tobacco companies" (cf. 35 percent). African American respondents were also more likely to agree that youth and minorities are unfairly targeted in marketing (56 percent cf. 51 percent). However, African-American respondents also tended to agree with messages sympathetic to industry, with 44 percent of respondents agreeing that sugary drink companies are essential to the job market (cf. 35 percent in the general sample), 37 percent agreeing that sugary drinks are "part of an active lifestyle" (cf. 28 percent), and 14 percent agreeing that "sugary drink companies care about my health" (cf. 11 percent).

Hispanic respondents had high rates of agreement with messages related to government regulation of sugary drink companies, with 42 percent agreeing that "the government should regulate the advertising practices of sugary drink companies (cf. 37 percent in the total sample), and 34 percent agreeing that sugary drink companies should be fined to offset health care costs (cf. 29 percent in the total sample). However, Hispanic respondents were less likely to agree that sugary drink companies influenced food policy when they gave money to elected officials (46 percent cf. 53 percent), and more likely to favor sugary drink companies that partner with non-profit organizations (28 percent cf. 21 percent). Hispanic respondents were also more likely to agree that "sugary drink companies care about my health" (16 percent cf. 11 percent).

Respondents who were Democrats were most likely to view sugary drink companies negatively, with 63 percent saying that sugary drink companies contribute to the high obesity rates in the United States and 57 percent saying that sugary drink companies unfairly target young children and minorities with their advertising practices. 43 percent of Democrats also said that drinking sugary drinks was just as bad as smoking cigarettes. Democratic respondents were also more likely to favor government regulation of sugary drink companies, with 45 percent saying the government should regulate the advertising practices of sugary drink companies and 35 percent saying that sugary drink companies should be fined to offset health care costs related to obesity, diabetes, and cancer. In contrast to Democrats, Republicans were the least likely to favor government regulation (27 percent) and think that sugary drink companies should be fined to offset health care costs related to obesity, diabetes, and cancer (23 percent).

Motivation-related messaging

The survey showed respondents a number of possible arguments for reducing their soda consumption and asked them to rate the argument on a five-point scale from "least motivating-1" to "most motivating-5." Tables 5 and 6 show the percent of respondents who ranked each message a five or four for more motivating and a two or one for less motivating respectively.

Table 5: Percentage of respondents that found message motivating to reduce consumption

	Caucasian (n=1259)	African American (n=382)	Hispanic (n=556)	Republican (n=410)	Democrat (n=785)	Low Income < $25K (n=531)	Education < high school (n=70)	Total (n=1894)
Knowing how sugary drink consumption can negatively affect their child's health								
	65.3**	69.6**	66.2	63.4	70.7**	66.1	72.5*	66.7
Knowing there are healthier options								
	60.2**	67.5*	64.0	62.0	64.8	64.2	65.2**	62.9
Knowing how sugary drinks are harmful to health								
	53.6**	59.7**	56.7*	53.4	60.5**	55.9	58.0	55.9
Knowing that sugary drink consumption increases the risk of obesity								
	56.5**	64.4**	61.0	52.2	65.9**	58.6	66.7**	59.3
Knowing what kind of predatory marketing practices sugary drink companies use								
	41.1**	52.4**	50.4**	37.8	49.6**	48.2*	59.4**	45.1

*p<0.05, **p<0.01 for significant difference from overall percentage

Table 6: Percentage of respondents that found message less motivating to reduce consumption

	Caucasian (n=1259)	African American (n=382)	Hispanic (n=556)	Republican (n=410)	Democrat (n=785)	Low Income < $25K (n=531)	Education < high school (n=70)	Total (n=1894)
Knowing what kind of predatory marketing practices sugary drink companies use								
	30.6**	19.6*	16.5**	32.9**	21.0**	23.9	14.5	26.4
Knowing how sugary drinks are harmful to health								
	16.0	13.1	14.2	18.3*	13.1	16.6	18.8	15.3
Knowing that sugary drink consumption increases the risk of obesity								
	14.9	13.1	12.9	17.3	11.1	15.1	16.5	14.2
Knowing there are healthier options								
	15.8	14.1	10.3**	14.6	13.5	13.4**	13.0*	14.7
Knowing how sugary drink consumption can negatively affect their child's health								
	10.6	9.2	9.0	11.5	8.4	18.5	8.7	10.3

*p<0.05, **p<0.01 for significant difference from overall percentage

The most motivating message for all groups was related to sugary drink consumption's negative effects on child health, especially among African-American respondents (67 percent listed as motivating in total sample, 70 percent in African-American sample). "Knowing there are healthier options" was rated as motivating by 63 percent of respondents, and knowing that sugary drinks "are harmful to health" and "increase the risk of obesity" were rated as "most motivating" by 56 and 59 percent of respondents, respectively.

Although over half of respondents had agreed that sugary drink marketing unfairly targets youth and minorities, only 26 percent of respondents found that knowing what kind of predatory marketing practices sugary drink companies use to be a motivating argument to reduce their own sugary drink consumption. This rate was slightly higher among Caucasian (31 percent) and Republican (33 percent) respondents, but it was still the lowest ranked of all five messages and had the highest rates of respondents selecting it as "least motivating".

Policy options

Lastly, respondents were asked to state their degree of support for a number of policies, given the hypothetical situation that they "could be convinced that sugary drink companies and their products are as harmful as tobacco companies and their products." Their responses to the various policy options presented are listed in Table 7.

Table 7: **Percentage of respondents indicating they would "support" policies if they could be convinced that sugary drink products are as harmful as tobacco products:**

	Caucasian (n=1259)	African American (n=382)	Hispanic (n=556)	Republican (n=410)	Democrat (n=785)	Low Income < $25K (n=531)	Education < high school (n=70)	Total (n=1894)
Put warning labels on sugary drinks								
	70.2**	87.0**	75.2	63.4**	82.0**	74.5	80.0	74.5
Regulate placement of sugary drinks in stores								
	45.8**	57.6**	55.6**	39.4**	57.4**	51.8	63.8*	50.7

*p<0.05, **p<0.01 for significant difference from overall percentage

Quantitative Evaluation of Terminology and Policy Report
Background
Effectively educating and promoting the reduction of sugary drinks is challenging, yet essential. The first step towards proper understanding amongst the general public is to identify how people are communicating the problem at hand. After consulting with a number of key public health advocates devoted to this issue, we identified three possible terms: SSBs, sugar-loaded beverages, and sugary drinks. The Rudd Center for Food Policy & Obesity and Interlex Communications, Inc. developed and administered a short Internet survey to identify which term was best for 1) helping consumers to correctly identify the set of beverages that would be taxed, and 2) eliciting positive responses to the possibility of a sugary drink tax.

Test Procedure
We conducted an Internet survey of 1,581 adults recruited through a survey panel administered by Survey Sampling International. Panelists are recruited via thousands of websites to maximize the representativeness of the panel to the online U.S. population. The sample was augmented to include sufficient proportions of Hispanic and African American respondents to allow for analyses of racial and ethnic differences.

After collecting demographic information including age, sex, race, ethnicity, income, education level, and political orientation, participants were randomized to one of three beverage terms: sugar sweetened beverages (SSBs), sugar-loaded beverages (SLBs), and sugary drinks (SDs). The surveys presented to participants were identical except for the term used to describe the beverages.

First, participants were asked to respond to a list of beverages and identify those they consider to be SLBs, SSBs, or SDs (depending on the term to which they were randomized). They were then asked to respond to three policy proposals: a tax on the beverages, a tax with revenue earmarked for obesity prevention, and a tax with revenue earmarked for childhood obesity prevention.

Subjects

The survey respondents represent a wide range of demographic groups. As you can see in Table 8, there are slightly more females (61 percent) than males (39 percent). The sample has high proportions of African-American (23 percent) and Hispanic (17 percent) respondents.

Table 8: Demographic Characteristics of Sample (1,581 Respondents)

Sex		Education	
Female	60.6%	Some High School or Less	3%
Male	39.4%	High School Graduate	25.4%
Race		Some College	35.8%
African American	23.2%	College Graduate	27.9%
Asian/Pacific Islander	2.4%	Post-Graduate School	8%
Caucasian	68.6%	**Political Orientation**	
Native American	1.8%	Strongly Liberal	6.2%
Other	5.1%	Liberal	6.7%
Ethnicity		Somewhat Liberal	8.5%
Hispanic	17.1%	Moderate	51.9%
Age		Somewhat Conservative	7.9%
18-24	13.8%	Conservative	9%
25-34	20.4%	Strongly Conservative	9.9%
35-44	11.3%	**Body Weight** (Self-Described)	
45-54	18.9%	Underweight	4%
55-64	22.2%	Normal Weight	49.1%
65 and Older	13.3%	Overweight	41.8%
Income		Obese	5.1%
<$25,000	29.8%		
$25,000-$49,999	32.5%		
$50,000-$74,999	19.8%		
$75,000-$99,999	10.1%		
$100,000 or More	7.9%		

Results

Beverage identification:

Respondents were shown the list of beverages below and were asked, "Which of the following beverages do you consider to be _____?", using the beverage term to which they were randomized. The list of beverages was presented in random order and included both sugary drinks and non-sugary drinks. Respondents completed this portion of the survey before seeing any formal definition of the terms. The percentage of respondents identifying each beverage as a SLB, SSB, or SD is listed below in Table 9 indicating the beverages for which the term used led to significantly different responses.

Table 9: Percent of respondents identifying each beverage as a sugary drink, by term

	Beverage	Sugar-Loaded Beverage	Sugar-Sweetened Beverage	Sugary Drink	Average
SLBs SSBs and SDs	Coca-Cola	90.7[b]	90.4[b]	94.9[a]	92.0
	Pepsi	89.7[b]	88.8[b]	94.8[a]	91.1
	Dr. Pepper	86.2[b]	88.4	90.4[a]	88.3
	Hawaiian Punch	84.2[b]	88.6[a]	88.9[a]	87.3
	Sweetened Iced Tea (non-diet)	76.9[c]	91.9[a]	84.8[b]	84.7
	Fanta	77.1[b]	81.4[b]	86.3[a]	81.7
	7-Up	72.7[b]	84.9[a]	83.0[a]	80.3
	Lemonade	68.2[c]	87.8[a]	78.4[b]	78.4
	Red Bull Energy Drink	74.1	70.9	72.8	72.6
	Sunny Delight	59.7[b]	73.3[a]	70.5[a]	68.0
	Powerade	49.6[b]	60.2[a]	52.4[b]	54.1
	Gatorade	47.8[b]	62.6[a]	50.8[b]	53.9
	Jarritos (Mexican soft drink)	46.4	49.5	47.8	47.9
	Vitamin Water	17.6[c]	34.7[a]	25.0[b]	26.0
	Average	**67.2[c]**	**75.2[a]**	**72.9[b]**	**71.9**
Non-Sugary Drinks	100% Orange Juice	45.5	49.8	48.2	47.9
	Coke Zero	40.5[b]	49.8[a]	49.7[a]	46.8
	Diet Pepsi	38.3[b]	46.1[a]	46.5[a]	43.8
	Diet Coke	36.2[b]	44.3[a]	46.0[a]	42.3
	Average	**40.0[b]**	**47.5[a]**	**47.6[a]**	**45.2**

Superscripts are significantly different from one another at the p<0.05 level. (The superscript [a] indicates that significantly more respondents identified the beverage as an SUGARY DRINK/SLB/SD when using that term than when using the terms marked with [b]. Where there is a [c] this indicates that the associated percentage is significantly lower than the two percentages marked with [b] and [a].)

Responses varied depending on the term used to describe the beverages. More respondents correctly identified sodas (Coca-Cola, Pepsi, Dr. Pepper, Fanta, and 7-Up) when exposed to the "sugary drinks" term than to the other two terms. For Powerade, Gatorade, and VitaminWater, "Sugar Sweetened Beverages" elicited more correct responses. In all, "Sugar Sweetened Beverages" elicited the highest percentage of correct responses (75.2 percent). "Sugar-loaded beverages" performed much worse than the other two terms with respondents correctly identifying only 67.2 percent of the beverages.

References

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3. Centers for Disease Control and Prevention (CDC)