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## ATTITUDES and BELIEFS

### The word outside and the pictures in our heads: contingent framing effects of labels on health policy preferences by political ideology

Roh & Niederdeppe Health Commun. 2016 Jan 22:1-9.

*This study suggests it may be advantageous to tailor the term used to describe sugary drinks to the political preferences of the audience when communicating about sugary drink policy.*

**A**dvocates, policy-makers, and the media often use the terms “soda” and “sugar-sweetened beverage” interchangeably when discussing sugar reduction policy. For advocates working on these issues, it is critical to understand how these word choices may bring different ideas to mind and impact level of support for policy approaches.

Roh and Niederdeppe find word choice matters. The terms “soda” and “sugar-sweetened beverage” are linked with different concepts, and “sugar-sweetened beverage” may be ideologically less divisive than “soda.” “Sugary drink” was not included in the study.

The authors searched online for images associated with both terms and found that the term soda returned images with more brand-related concepts, whereas the term sugar-sweetened beverage returned more images with health-related concepts (e.g., calories, health data).

The authors then hypothesized that the brand-related concepts associated with soda would solicit more support for public policy from liberals who have a less favorable view of the soda industry, but less support from conservatives who may be less inclined to regulate industry.

US adults (n=1,000) completed a phone-based survey that included an open-end thought-listing task and a closed-ended question about what comes to mind in response to the words soda or sugar-sweetened beverage. Participants also reported level of support for four policies to reduce sugary drink consumption, and where they fell on the scale ranging from strongly liberal to strongly conservative.

The term soda brought to mind more brand-related concepts and the term sugar-sweetened beverage brought to mind more health-related concepts. Strong liberals had higher support for a soda tax when the policy initiative used the term soda instead of sugar-sweetened beverage. Strong conservatives were equally likely to support a soda tax regardless of word choice.

**Limitations:** Participation in the phone survey had a low response rate, 25.3%, and participants did not see the policy options in random order. ■

## Increasing public support for food-industry related, obesity prevention policies: The role of a taste-engineering frame and contextualized values.

Ortiz SE, Zimmerman FJ, and Adler GJ Jr. Soc Sci Med. 2016 Mar 8;156:142-153.

*This study suggests that support for policies to prevent obesity may increase 30-40 percent when subjects are primed with messages that emphasize how food and beverage companies engineer taste preferences and encourage over-consumption. Authors indicate that such framing may help counter opponents' attempt to frame obesity as a matter of personal responsibility.*

**A**rguments from industry and other opponents that obesity is a matter of personal responsibility can undermine support for obesity prevention policies. Public health advocates know environmental factors play a role in obesity, but have had difficulty overcoming the “personal responsibility” frame. Ortiz et al. investigated whether support for anti-obesity policies grows when adults are primed with messages about how the industry encourages over-consumption of unhealthy foods through product processing, placement, and advertising techniques (taste-engineering frame). The authors also assessed whether subjects were more responsive to policy proposals when they were prefaced by statements about the importance of informing consumers about the content of, and health risks associated with, food products.

Adults (n=2,580) were selected at random from an online research panel to complete an online survey in October 2014. The following data were collected: socio-demographic information, political affiliation and ideology, level of support for four policies, beliefs about obesity, and moral disposition. Participants were randomly assigned to one of six study arms - five treatment groups and one control. One group was exposed to the taste-engineering frame; another to statements about the importance of informing consumers about food content; another to statements about informing consumers of food safety risks; and others

to combinations of these. Participants in each group were exposed to messages related to the frame and then asked about their support for four obesity prevention policies.

The taste-engineering frame alone, the combination of messages about the importance of content and safety information, and the combination of all three significantly increased support for four food and beverage policies. Respondents exposed to these messages were 30-40% more likely to report a high level of support for the policies compared with those not exposed to any messages. Relative to controls, participants who were exposed to a combination of all three frames were more likely to attribute more responsibility for obesity to the government, the food industry, and schools. ■

**Limitations:** The survey experiment was conducted over the Internet, the study was unable to control for the amount of time a respondent was exposed to the treatment. The research panel is a non-probability sample and respondents had higher education and income than the general population.

## Child and caregiver attitudes about sports drinks and weekly sports drink intake among U.S. youth

Zytnick et al. *Am J Health Promot.* 2016 Jan-Feb;30(3):e110-9.

*Advocates working to curb consumption of sugary drinks among youth should target parents and caregivers to de-normalize sports drinks, especially in communities of color.*

**A**lthough the American Academy of Pediatrics recommends children and youth avoid sports drinks (SD), one in five youth 12-17 report weekly consumption of them. Understanding the factors that influence youth consumption of these drinks is important for designing interventions to reduce consumption. Zytnick and colleagues found half of youth and one in five parents and other caregivers believed sports drinks are “good, healthy drinks for children”. Children of caregivers with such favorable attitudes were more likely to drink them, 41 percent versus 14 percent of those whose caregivers did not have those attitudes.

Authors analyzed data from 815 parent-child pair respondents in the 2011 Styles online panel survey (children were 12-17 years old).

The odds of caregivers believing sports drinks are healthy for children were more than two times higher among non-Hispanic blacks and almost twice as high among Hispanics compared with whites.

One-third of caregivers believed children need sports drinks for hydration. The odds of caregivers believing this were nearly five times higher among non-Hispanic blacks and more than twice as high among Hispanics compared with whites. Children were more likely to drink these beverages if their caregivers believed they were necessary for hydration, 37 percent versus 11 percent of children of caregivers who did not. Youth attitudes were not associated with consumption of these beverages. ■

**Limitations:** Data are from a convenience sample from an online panel survey with a low response rate, therefore findings may not be generalizable. Data were self-reported and therefore vulnerable to social desirability and recall bias.

## Parents' beliefs about the healthfulness of sugary drink options: opportunities to address misperceptions.

Munsell et al. Public Health Nutr. 2016 Jan;19(1):46-54.

*Education campaigns may need to focus on the sugar content of non-soda sugary drinks to address misperceptions about fruit drinks, sports drinks, and flavored waters, especially among communities of color. It may be useful to target certain brands in education and counter-marketing efforts, and not just sugary drinks or types generally.*

**T**wo-thirds of youth (2-19 years old) report daily consumption of sugary drinks; more than half of that occurs at home. Messages on the packaging of fruit drinks, sports drinks, and flavored waters imply these beverages offer nutritional benefits such as vitamins and other healthy nutrients. Parents may provide children with these drinks because of misperceptions about their healthfulness. Munsell and colleagues find that the vast majority (96%) of parents purchased or provided sugary drinks for their children and many believed that some sugary drinks are healthy options for children, particularly flavored waters, fruit drinks, and sports drinks.

US parents (n=982) with at least one child (2-17 years old) reported what categories and brands of beverages they purchased for their child and rated the healthfulness of these beverages via an online survey in 2011.

Fruit drinks (77%), soda (62%), and sports drinks (51%) were provided most often. Half of parents rated flavored milk and water as healthy and more than a quarter rated fruit and sports drinks as healthy. Many brands were rated as healthier than the beverage category to which they belonged. For example, more parents rated Sunny D as healthy than fruit-flavored drinks overall (43% vs. 30%) and more parents rated Sprite (11%) as healthy compared with soda overall (5%).

However, contrary to the perception of relative healthfulness, these beverages can contain as much sugar as soda. Yet four out of five parents of children under 12 provided or purchased fruity drinks for their children, and parents were six times more likely to rate these beverages as healthy compared with soda. Black parents were more likely to provide fruit drinks (85% vs. 73%) and rate these drinks as healthy (36% vs. 26%) compared with white parents.

Perceptions of the healthfulness of soda did not correspond with purchasing behavior. Only 5 percent labeled soda as healthy, but two-thirds purchased it for their children. ■

**Limitations:** Sample was highly diverse but not representative of US parents. Data were self-reported and vulnerable to social desirability and recall bias.

Research Watch reviews the evidence on the health effects of sugar and the effectiveness of policy and other interventions to curb consumption to inform sugar reduction activities across the US.

Healthy Food America acts on scientific evidence to drive change in food policy and industry practice, giving people greater control over their health and reducing diet-related illnesses, such as obesity, diabetes, and heart disease.

*This publication was prepared by Dan Taber and Petra Vallila-Buchman.*

## HEALTH IMPACTS

### The impact of a tax on sugar-sweetened beverages on health and health care costs: a modeling study

Veerman et al. PLOS ONE. 2016 Apr 13; 11(4): e0151460.

*In addition to preventing disease, a sugary drink tax may improve quality of life and reduce health care costs. This Australian study simulated the 25-year impact of a 20% sugary drink tax and found substantial increases in disability-adjusted life years (DALYs), and reductions in health care costs, from even small reductions in body mass index (BMI).*

To generate support for sugary drink taxes, policymakers and advocates need evidence on the long-term impact of taxes. This Australia-based study modeled the 25-year impact of a national 20% sugary drink tax on BMI, obesity-related diseases, DALYs, and health care expenditures. It expanded upon previous sugary drink tax modeling research by using recent Australia-specific data, using Australia-specific price elasticity, and estimating the long-term economic impact of the tax.

The authors projected that the tax would reduce average BMI by 0.10 units in men and 0.06 in women. These changes may appear modest, but even minor changes in BMI translated into substantial changes in disease, disability, and costs. After 25 years, the tax would result in 16,000 fewer cases of diabetes, 4,400 fewer cases of heart disease, and 1,100 fewer cases of stroke. Health-adjusted life years would increase by 112,000 in men and 56,000 in women, for Australian adults who were alive in 2010.

Legislation and monitoring of the tax were projected to cost AUD27.6 million. Tax revenue, conversely, would exceed AUD400 million – more than 14 times the cost of implementation – even after accounting for the decline in consumption. Lifetime health care expenditures would also decline by AUD609 million. ■

**Limitations:** As with any simulation study, the projections were based on available data and several assumptions. The authors assumed, for example, that the tax was fully passed on to consumers. They also did not account for how people might compensate for higher sugary drink prices, such as consuming more high-sugar foods. The study also did not consider how effects may differ by socioeconomic groups.

### Sugary drink consumption associated with arthritis

DeChristopher et al. analyzed 2003-2006 NHANES data and found that young adults (20-30y) who reported regular consumption of soda, fruit drinks, or apple juice (greater than or equal to 5 times a week) had three times the odds of arthritis compared to less frequent consumers (less than or equal to 1-3 times a month). Arthritis is the leading cause of disability in the US – 1 in 5 adults have the disease.

DeChristopher LR, Uribarri J, Tucker KL. Intake of high-fructose corn syrup sweetened soft drinks, fruit drinks and apple juice is associated with prevalent arthritis in US adults, aged 20-30 years. *Nutr Diabetes*. 2016 6, e199.

## SSB taxes and diet quality in US preschoolers: estimated changes in the 2010 Healthy Eating Index

Ford et al. *Pediatr Obes*. 2016 Apr 5.

*Research on sugary drink taxes tends to focus on adolescents and adults, but this study questions whether a tax would affect diet in ways that are passed through to younger children. This study projected that a 20% sugary drink tax would reduce consumption of calories in 2-5 year-olds in the US, but the impact on diet quality would be small.*

**H**ealth experts increasingly believe that food policy initiatives need to target children at a young age (5 and under), but policy research rarely focuses on this age group. Tax studies, in particular, often focus on older children or adults because taxes are clearly designed to target people who purchase sugary drinks.

Ford, et al. tried to bridge this gap by projecting the impact of a 20% tax of overall dietary quality of 2-5 year-old children. They used price and purchasing data from the 2009-12 Nielsen Homescan Panel to estimate how households with a young child (age 2-5) respond to differences in price, and the authors subsequently applied these elasticity estimates to consumption data for comparable beverage groups in the 2009-10 and 2011-12 National Health and Nutrition Examination Surveys (NHANES). They simulated the impact of a 20% price increase, or “tax,” on consumption of several specific dietary measures, as well as overall dietary quality, which was measured using the Healthy Eating Index (HEI).

The 20% tax led to less consumption of calories and juice (-28 and -20 kcal/day per capita, respectively.) Conversely, though, it led to higher intake of flavored milk with added sugar and 100% fruit juice (+7 and +5 kcal/day per capita, respectively.) There were several other differences in intake of specific measures (e.g., less protein), but the overall impact on dietary quality was small. Authors estimated that the HEI would decline modestly, implying a slightly less healthy diet overall.

Interestingly, the tax’s impact on calories was mostly attributable to juice drinks. Consumers were particularly responsive to price differences in juice drinks, which are the primary sugary drink among younger children. ■

**Limitations:** Elasticity estimates came from the Nielsen Homescan Panel, which relies on items with barcodes and does not include other items such as fresh meat, fresh produce, and restaurant foods and beverages. The study consumption data relied on a single 24-hour recall, which is vulnerable to self-report bias. Finally, the HEI is based on USDA Food Pattern food/beverage groups that do not perfectly match the Nielsen food/beverage groups.

## FROM THE LABORATORY

### Individual Differences Among Children in Sucrose Detection Thresholds: Relationship With Age, Gender, and Bitter Taste Genotype

Joseph et al. Nurs Res. 2016 Jan-Feb;65(1):3-12.

*Sensitivity to sweet taste varies widely among school-aged kids and may in part be genetically determined. Some children who have less sensitivity may require more sugar to perceive a sweet sensation, and so have a harder time adapting to reductions of sugar in their diet.*

**G**ene-related differences in sweet taste sensitivity have been found in adults. Some people need more sugar to get the same sweet taste. However, this phenomenon has not been well studied in children. Joseph, et al. assessed how variations in children's sweet taste thresholds varied by age, gender, taste-related genes, body composition, and consumption of added sugars in healthy children (7-14 years).

Mothers and their children (n=235 children) were recruited from local advertisements and from a list of past participants who asked to be notified of future studies. The authors measured sweet taste threshold, defined as the lowest detectable level of sucrose; five sweet- and bitter-related genes and their variants; and BMI. Waist-to-height ratio and percent body fat were measured for a subset of children (n=96). These children and their mothers provided 24-hour dietary recall information for the child.

To assess sweet taste sensitivity, children were presented with several pairs of disposable cups – one containing water and the other a sucrose solution of varying strength. Participants tasted both and pointed to the cup that had a taste. This occurred several times, with solutions of varying strength, to pinpoint the lowest detectable level of sucrose.

Like adults, children varied in their ability to detect sucrose at low concentrations. Variants of the bitter-related gene TAS2R38 were related to sweetness detection and sugar intake. Sweet-related genes were not related to these outcomes. Children with a variant of this bitter-related gene had a lower threshold for sweetness detection (i.e., were more sensitive to the taste of sucrose) than those who did not. Children with a particular TAS2R38 genotype consumed more added sugar (16% of energy intake) compared with children without this genotype (11-13%). Younger children were less sensitive than older children, and boys less sensitive than girls, in detecting sucrose. BMI was not related to sweetness detection. Increased body fat and larger waistlines relative to height were associated with greater sensitivity to sweet taste. ■

**Limitations:** Participants were not randomly selected to participate. 24-hour dietary recall is subject to bias.