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Adults Who Order Sugar-Sweetened Beverages:

Sociodemographics and Meal Patterns at Fast Food Chains

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Abstract

Introduction—Approximately 30% of adults consume sugar-sweetened beverages (SSBs) daily, many at fast food restaurants. Researchers examined fast food purchases to better understand which consumers order SSBs, particularly large SSBs.

Methods—Fast food customers in New York City and New Jersey provided receipts and participated in a survey during 2013–2014 (N=11,614). Logistic regression analyses predicted three outcomes: ordering no beverage or a non-SSB, a small/medium SSB, or a large SSB. Among respondents who ordered a beverage (*n*=3,775), additional analyses predicted number of beverage calories and odds of ordering an SSB. Covariates included demographic and behavioral factors.

Results—Respondents aged 18–29 years were 88% more likely to order a large SSB than a non-SSB or no beverage, as compared with respondents aged ≥50 years (*p*<0.001). Among respondents who purchased a beverage, respondents ordered more beverage calories with a large combination meal (+85.13 kcal, *p*=0.001) or if the restaurant had a large cup size >30 ounces (+36.07 kcal, *p*=0.001). Hispanic and Asian respondents were less likely to order a large SSB (AOR=0.49 and 0.52, respectively, both *p* = 0.026) than non-Hispanic white respondents. Odds of ordering a large SSB were higher for respondents who ate in the restaurant (AOR=1.66, *p*<0.001) or stated that they chose beverage based on price (AOR=2.02, *p*<0.001).

Conclusions—Young adults and customers of restaurants with a larger cup size were more likely to purchase SSBs, and their beverage calories increased with meal size. Increased understanding of these factors is an important step toward limiting unhealthy SSB consumption.

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Introduction

Public policy efforts to reduce obesity, diabetes, and other chronic diseases are expanding. Perhaps most notably, in 2012, the New York City Board of Health passed an anti-obesity proposal to limit the sale of sugar-sweetened beverage (SSBs).¹ Although eventually defeated by the New York State Court of Appeals,² the regulation would have required that beverages with >25 kcal per 8 ounces be sold in containers ≤16 ounces, unless they were 100% juice or >50% milk. The proposal included both pre-bottled and fountain beverages (self-service and otherwise) for approximately 24,000 food establishments under the jurisdiction of the New York City Department of Health and Mental Hygiene.

Such policies stem on news that U.S. obesity rates have tripled in children and doubled in adults over the past 30 years, with more than one third of adults and 17% of children obese.^{3–6} The subsequent rates of health problems are staggering, with diabetes incidence more than doubling in the same time period.⁷ In an analysis of data from the National Health and Nutrition Examination Survey, researchers found that adults consumed on average 151 kcal from SSBs in 2009–2010, with SSBs contributing to about 7% of daily energy intake.⁸ An analysis of U.S. Department of Agriculture data suggests that this consumption more than doubled from 64.4 kcal per adult in 1977–1978,⁹ and that SSB consumption was frequent (consumed at least one time daily) by 26.3% of U.S. adults.¹⁰ Consumption is higher among male consumers, young adults aged 18–34 years, low-income populations, and racial/ethnic minorities.^{10–12} Consumption of SSBs is also higher in smokers, individuals with minimal fruit and vegetable consumption, and individuals who frequent fast food establishments.^{13–16}

Consumption of SSBs is falling, but remains high. Currently, one third of U.S. adults report drinking at least one SSB per day.¹⁷ Specific to New York City, 23.3% of adults reported consumption of at least one SSB per day in 2013, compared with 35.9% in 2007.¹⁸ A dietary recall study suggested that, on average, New York City adults who consumed SSBs had a 572 kcal–greater daily intake than residents who did not drink SSBs.¹⁹ Additionally, an analysis of 2005 New York City Community Health Survey data showed that New Yorkers with sedentary behaviors were more likely to be frequent soda drinkers.²⁰ Numerous studies point to an association between high-caloric/low-nutrition food intake and SSB consumption, supporting the notion of a connection between sugary drink intake and unhealthy food choice patterns.^{14,15,21,22} However, little is known about factors influencing the size (number of fluid ounces) of consumed SSBs, or whether factors differ at locations where SSB consumption is routine, such as at fast food restaurants.

This study sought to better understand which demographic and behavioral factors were associated with SSB purchases at fast food restaurants, particularly large SSBs.

Methods

Researchers developed a survey to better understand what factors influence a consumer's decision to purchase SSBs, particularly large-sized SSBs. Receipts and surveys were collected from customers exiting chain fast food restaurants in New York City and Newark

and Jersey City, New Jersey (both within 15 miles of New York City) during 2013–2014 (N=11,721) and analyzed during 2015–2016. Multiple locations of the five most common chains²³ (McDonald's, Burger King, KFC, Wendy's, and Subway; 103 total locations) were surveyed on weekdays during lunchtime (11:30AM–2:30PM) and dinnertime (4:30PM–7:30PM). Open locations were identified using Reference USA, Google search, and the chains' websites. Survey sites were selected by propensity matching each restaurant's Census tract demographics (race, ethnicity, and household poverty) in New York City with those of each restaurant in New Jersey, and sampling the best matched pairs of restaurants across the two states.²⁴ Propensity matching (a statistical technique to minimize potential bias due to confounding) was performed because the survey was originally designed to evaluate a New York City Department of Health proposal (which was not implemented) to limit SSBs to a 16 ounce container at select establishments.²

Before entering the restaurant, customers were told that in exchange for \$2, they could provide research staff with their purchase receipt and answer a brief survey. In the survey, researchers asked consumers which items were purchased for their own consumption, and details about the beverages such as whether a fountain beverage lacked ice or was refilled, and whether a hot beverage contained milk or sugar. Based on survey responses and receipts, researchers estimated the number of beverage calories purchased from information available on the receipt (for example, "Medium Sprite") and online nutrition information provided by each restaurant. To adjust for beverages not containing ice (as reported by the consumer), the number of calories was increased assuming that ice would normally comprise 40% of a cup²⁵; alternate assumptions yielded similar results. To adjust for refills, the number of calories was doubled. At Subway restaurants, receipts identified beverage size but not name (for example, "20-ounce beverage"); therefore, for respondents who self-reported purchase of a regular (non-diet) beverage, the estimated number of calories was averaged across available beverages. Results were similar for sensitivity analyses conducted excluding Subway receipts.

Then, multinomial logistic regression was employed,²⁶ where the dependent variable was one of three possible outcomes: purchase of no beverage or a non-SSB at the restaurant, purchase of a small or medium SSB, or purchase of a large SSB. The categories of no beverage and non-SSB were combined because both contained zero added sugar calories. Consumers who self-reported intent to purchase a beverage elsewhere, for example, at a vending machine, were considered not to have purchased a beverage. This technique provided the relative risk (RR) of ordering an SSB as compared with not ordering an SSB, similar to an OR (RR compares probabilities, whereas ORs compare odds).²⁶ For example, an RR of 1.5 would mean that a consumer was 50% more likely to purchase a small/medium (or large) SSB relative to no SSB. Consistent with prior literature, SSBs were defined as any beverage containing added sugar (such as calorie-containing carbonated drinks, fruit-flavored drinks, energy drinks, sports drinks, and vitamin water drinks), as opposed to naturally occurring sugar such as in 100% juice or plain milk.^{8,27–30} Smoothies, shakes, and blended beverages (frappes) were classified as foods, as other literature on the topic does not include them in the definition of SSBs.^{8,30} Sweetened coffee and iced tea drinks were classified as SSBs. Covariates included time of day (lunch, dinner); state (New York, New Jersey); restaurant chain (McDonald's, Burger King, KFC, Subway, Wendy's); location (to go, eat

in); purchase of a combination meal or “combo” (none, small/medium, large); purchased food (a series of variables such as a burger/sandwich/wrap, salad, or chips); additions (cheese on burger/sandwich); calorie labels (consumer reported seeing calorie labels, consumer reported that calorie labels influenced their purchase); demographics (age group [18–29, 30–39, 40–49, 50 years]; gender; joint race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, Asian, other); education (high school or less, some college or Associate degree, college, graduate degree); consumer’s work location (in New York City, outside New York City); and data collection round (1, 2, 3). SEs were clustered by restaurant chain.³¹

For the subset of consumers who purchased a beverage ($n=3,775$), logistic regression was employed to examine factors associated with purchase of an SSB (any size) or large SSB, and ordinary least squares regression to examine factors associated with the number of purchased beverage calories. Covariates and SE clustering were as described above, with additional controls for beverage type (SSB, diet/unsweetened non-SSB, juice/water/hot drink/other non-SSB) and the consumer’s self-report of why they chose the beverage (taste, health, part of a combination meal, price, thirst, other).

Notably, available beverage size differed by restaurant chain. For two chains, a medium beverage contained 20–21 ounces and a large beverage 30 ounces. For the other three chains, a medium beverage contained 30–32 ounces and a large beverage 40 ounces. Therefore, sensitivity analyses considered alternate outcomes of purchase of an SSB 30 ounces versus <30 ounces.

Tests were performed with two-sided $\alpha=0.05$ using Stata/MP, version 13.1. This study was approved by the IRB of New York University School of Medicine.

Results

Table 1 presents summary statistics. Of 11,614 survey respondents, 80% of respondents ordered no beverage or a non-SSB (55% no beverage, 25% non-SSB), 17% ordered a small or medium SSB, and 3% ordered a large SSB. The mean number of purchased beverage calories was 149 kcal (comprising 17% of total purchased calories), and 78% of responses were at lunchtime.

The study over-represented minorities, particularly non-Hispanic blacks (41%) and Hispanics (31%), individuals with a high school education or less (41%), and young adults (aged 18–29 years, 33%). Table 2 presents results of the multinomial logistic regression for factors influencing the type of purchased beverage. Each outcome is shown relative to ordering a non-SSB/no beverage. For example, in the second row, respondents at KFC were 51% more likely to order a small/medium SSB than a non-SSB/no beverage, as compared with respondents at McDonald’s. In general, younger respondents were more likely to order SSBs, particularly large-sized SSBs. Respondents aged 18–29, 30–39, and 40–49 years were 88%, 61%, and 67% more likely to order a large SSB than a non-SSB/no beverage, respectively, as compared with respondents aged 50 years (all $p < 0.002$). Similarly, respondents aged 18–29 and 30–39 years were 35% and 28% more likely to order a small/

medium SSB than a non-SSB/no beverage, respectively, as compared with respondents aged 50 years (all $p < 0.012$). Ordering a combination meal was associated with purchasing a beverage of the same size; a small/medium combination meal was associated with a 574% higher risk of ordering a small/medium SSB than ordering a non-SSB/no beverage, and a large combination meal was associated with a 9,617% higher risk of ordering a large SSB than ordering a non-SSB/no beverage (both $p < 0.001$). By race/ethnicity, Hispanic respondents were more likely to order a small/medium SSB (RR ratio=1.35, 95% CI=1.02, 1.78, $p=0.021$) and Asian respondents were less likely to order all sizes of SSBs (RR ratio=0.80, 95% CI=0.66, 0.96, $p=0.017$ for small/medium SSBs and 0.47, 95% CI=0.56, 0.81, $p < 0.001$ for large SSBs), each as compared with non-Hispanic white respondents. Non-Hispanic black race/ethnicity was not associated with significant differences in beverage purchases.

Table 3 shows regression results for the 3,775 respondents who purchased a beverage. Respondents ordered more beverage calories if they also ordered a large combination meal (+85.13 kcal, 95% CI=55.30, 114.97, $p=0.001$), if the restaurant had a large cup size >30 ounces (mean coefficient across the three restaurants with large cup sizes >30 ounces [Burger King, Subway, and Wendy's]: +36.07 kcal, 95% CI=25.44, 46.71, $p=0.001$, as compared with restaurants with smaller cup sizes), or if a purchase was consumed at the restaurant (+8.75 kcal, 95% CI=3.05, 14.46, $p=0.013$, as compared with to go) (Column 1). Respondents who ordered a salad had lower odds of ordering an SSB of any size (AOR=0.46, 95% CI=0.33, 0.66, $p < 0.001$) (Column 2). The adjusted odds of ordering a large SSB were higher for respondents who ate in the restaurant (AOR=1.66, 95% CI=1.31, 2.09, $p < 0.001$, as compared with to go) or stated that they chose their beverage based on price (AOR=2.02, 95% CI=1.62, 2.52, $p < 0.001$), and lower for respondents who ordered a burger/sandwich/wrap (AOR=0.68, 95% CI=0.61, 0.76, $p < 0.001$) (Column 3). Education was not significantly associated with SSB size or number of calories (all $p > 0.12$), nor was self-report of whether a consumer saw calorie labels.

Discussion

This study examined the factors associated with consumer purchase of SSBs at fast food restaurants. Younger respondents, particularly those aged 18–29 and 30–39 years, individuals purchasing combination meals, and those who ate in the restaurant were more likely to order SSBs, whereas Hispanic and Asian respondents were less likely to order large SSBs. Non-Hispanic black race/ethnicity and education were not significant.

According to the University of Connecticut's Rudd Center for Food Policy & Obesity,³³ 149 past or present public policy bills have been introduced on SSBs, with a \$0.01 tax per fluid ounce recently implemented in Berkeley, California.³⁴ The current study can contribute to the evidence base to better understand which individuals purchase SSBs in fast food restaurants, so that public policy may better be directed toward the impact on these groups of consumers. Results suggest that policies or interventions could be targeted toward particular people or purchases to have the biggest impact. For example, combination meals were associated with greater SSB purchases (particularly large SSBs), so policies to decouple these purchases might be considered. SSBs were more often purchased for meals consumed

at the restaurant, suggesting that public health campaigns might pay more attention to eat-in than to-go purchases. Similarly, campaigns or other efforts to reduce consumption of SSBs may be most effective when targeted at people aged <40 years, particularly those aged 18–29 years (similar to some prior work^{10,17}). On the other hand, policy may be less useful when targeted toward Hispanics or Asians, because of their lower likelihood to purchase large SSBs. This result partially contrasts prior work suggesting that male consumers, non-Hispanic blacks, and Hispanics are more likely to consume SSBs daily (without regard to beverage size).^{10,13} Finally, visiting a restaurant with a large cup size >30 ounces was associated with ordering 36 more beverage calories (Table 3). Further research on beverage cup size may be useful for policymakers. All told, this study lays a solid foundation, where one did not readily exist, on how best to target policies and programs to address SSB purchasing at fast food restaurants.

Limitations

The study's findings are subject to several important limitations. First, survey findings were based on a consumer's self-report, and therefore may have misestimated the amount of ice or refills or why a consumer purchased a beverage. Second, it was unknown whether consumers who purchased a large SSB intended to consume the beverage at one sitting or gradually throughout the remainder of the day. Third, it was unknown whether consumers who purchased an SSB consumed all of it, and in particular, whether consumers who purchased a large SSB were less likely to consume all of it than consumers who purchased a small/medium SSB. Fourth, the study was limited to fast food restaurants in urban areas. Factors influencing beverage purchases may differ in rural¹⁴ and suburban³⁵ geographies and in other types of restaurants. For example, individuals whose primary mode of transportation is driving (rather than walking) may be more likely to buy a beverage at the fast food restaurant, as compared with this study's population, but not enough work has been conducted in rural/suburban areas to know this definitively. Fifth, customers were told upon entering the restaurants that they could receive an incentive for providing their receipt after the purchase, which may have influenced their behavior in the restaurant. Sixth, point of purchase survey response rate was not tracked, but similar studies have reported 60% participation.³²

Conclusions

Young adults and customers of restaurants with a larger cup size were more likely to purchase SSBs, whereas Hispanic and Asian respondents were less likely to purchase large SSBs. Additionally, individuals who ordered larger meals (such as a burger, sandwich or wrap, or a large combination meal) tended to order more beverage calories. Increased understanding of factors influencing SSB purchases is an important first step to considering potential methods to limit unhealthy SSB consumption. For example, because customers appear to be more attached to nominal beverage size (small, medium, or large) than the number of ounces, policies might encourage smaller cup sizes. Policies might also encourage de-linking of beverage size from combination meal size, such as including a small SSB regardless of meal size, or perhaps allowing customers to choose between a small SSB or larger non-SSB.

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Table 1

Characteristics of Sample Participants

Variable	All respondents Mean (SD)	Respondents who purchased a beverage Mean (SD)
N	11,614	3,775
Percent, unless otherwise specified		
Beverage		
Non-SSB or no beverage	79.87 (48.32)	39.02 (48.79)
Small or medium SSB	17.17 (37.71)	52.53 (27.82)
Large SSB	2.75 (16.34)	8.45 (27.82)
SSB <30 oz	14.47 (35.18)	83.23 (37.36)
SSB ≥30 oz ^a	5.45 (22.70)	16.77 (37.36)
Sugar adj. for refills and ice (g) ^b	—	37.93 (32.18)
Beverage calories adj. for refills and ice (kcal) ^b	—	148.71 (123.01)
Cup size adj. for refills and ice (fluid oz.) ^b	—	20.80 (7.37)
Restaurant		
McDonald's	34.77 (47.62)	54.07 (49.84)
Burger King	14.61 (35.32)	13.56 (34.24)
KFC	5.20 (22.21)	7.84 (26.89)
Subway	40.67 (49.12)	16.93 (37.50)
Wendy's	4.75 (21.27)	7.60 (26.51)
Beverage type		
Regular	—	59.63 (49.07)
Diet or unsweetened	—	5.19 (22.19)
Juice, water, hot drink, or other	—	35.18 (47.76)
Combination meal (Combo)		
No combo	81.96 (38.46)	67.31 (46.91)
Small or medium combo	17.11 (37.66)	30.17 (45.91)
Large combo	0.93 (9.60)	2.52 (15.66)
Age group		
18–29 years	33.30 (47.13)	27.55 (44.68)
30–39 years	21.20 (40.87)	20.32 (40.24)
40–49 years	18.82 (39.09)	19.71 (39.79)
50 years	26.69 (44.23)	32.42 (46.82)
Gender		
Male	53.21 (49.90)	52.56 (49.94)
Female	46.79 (49.90)	47.44 (49.94)
Race/Ethnicity		
Non-Hispanic black	40.52 (49.10)	37.56 (48.43)
Non-Hispanic white	14.57 (35.28)	13.83 (34.52)
Hispanic	31.38 (46.41)	37.88 (48.52)
Asian	6.29 (24.27)	3.63 (18.70)

Variable	All respondents Mean (SD)	Respondents who purchased a beverage Mean (SD)
Other	3.54 (18.49)	3.36 (18.03)
Missing	3.70 (18.87)	3.74 (18.96)
Education		
High school or less	41.46 (49.27)	48.21 (49.97)
Some college or AA degree	27.24 (44.52)	25.75 (43.73)
College	21.85 (41.33)	19.02 (39.25)
Graduate degree	9.21 (28.92)	6.70 (25.01)
Missing	0.23 (4.80)	0.32 (5.63)

^a Large at McDonald's and KFC; medium at Burger King, Subway, and Wendy's.

^b Only reported for respondents who purchased a beverage.

SSB, sugar-sweetened beverage; adj., adjusted; AA, Associate

Table 2

Factors Associated With the Consumer's Decision to Purchase a Beverage

Variable	Small or medium SSB	Large SSB
	Relative risk ratio ^a (95% CI)	Relative risk ratio ^a (95% CI)
Restaurant (Reference: McDonald's)		
Burger King	0.66 (0.57, 0.75) ***	0.13 (0.12, 0.15) ***
KFC	1.51 (1.18, 1.93) ***	0.55 (0.49, 0.62)
Subway	0.20 (0.16, 0.23) ***	0.03 (0.02, 0.03) ***
Wendy's	1.82 (1.75, 1.91) ***	0.32 (0.30, 0.40) ***
Combination meal ("Combo") (Reference: None)		
Small or medium combo	6.74 (3.17, 14.34) ***	1.28 (0.80, 2.04)
Large combo	2.13 (0.30, 14.98)	97.17 (74.95, 125.99) ***
Age group (Reference: 50 years)		
18–29 years	1.35 (1.07, 1.70) *	1.88 (1.45, 2.45) ***
30–39 years	1.28 (1.13, 1.44) ***	1.61 (1.34, 1.94) ***
40–49 years	1.17 (0.95, 1.45)	1.67 (1.20, 2.33) **
Gender (Reference: Male)		
Female	1.01 (0.91, 1.12)	1.05 (0.83, 1.32)
Race/Ethnicity (Reference: Non-Hispanic white)		
Non-Hispanic black	1.14 (0.78, 1.66)	1.35 (0.90, 2.02)
Hispanic	1.35 (1.02, 1.78) *	0.67 (0.56, 0.81) ***
Asian	0.80 (0.66, 0.96) *	0.47 (0.28, 0.81) **
Other	1.13 (0.92, 1.39)	0.73 (0.53, 1.01)
Missing	1.21 (0.99, 1.47)	1.28 (0.64, 2.56)
Education (Reference: High school or less)		
Some college or AA degree	1.08 (0.93, 1.26)	1.23 (0.84, 1.80)
College	1.07 (0.90, 1.27)	1.12 (0.87, 1.43)
Graduate degree	1.07 (0.90, 1.27)	0.84 (0.55, 1.27)
Missing	1.81 (0.44, 7.41)	4.51 (1.72, 11.79) **
Log Likelihood	–5,257	
Pseudo R ²	0.22	
N	11,614	

Notes: Boldface indicates statistical significance

*
 $p < 0.05$;**
 $p < 0.01$;***
 $p < 0.001$.

Researchers evaluated the likelihood that a consumer would purchase a sugar-sweetened beverage (SSB), as compared with a non-SSB or no beverage.

^aEach outcome is shown relative to a reference outcome of a non-SSB/no beverage. For example, respondents aged 18–29 years were 35% more likely to order a small/medium SSB than a non-SSB/no beverage, as compared with respondents aged 50 years.

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Table 3 Factors Associated With the Type of Beverage and Beverage Calories Purchased^a

Variable	Outcome		
	Beverage calories (kcal)	SSB (Sugar >0 g)	SSB 30 ounces ^b
	Coefficient (95% CI)	AOR (95% CI)	AOR (95% CI)
Restaurant (Reference: McDonald's)			
Burger King	8.80** (3.93, 13.68)	1.07 (0.96, 1.20)	2.98*** (2.06, 4.30)
KFC	16.27*** (11.25, 21.28)	0.36** (0.17, 0.75)	0.24*** (0.19, 0.32)
Subway	33.45** (22.35, 44.56)	1.16 (0.87, 1.54)	1.91*** (1.44, 2.55)
Wendy's	-6.18 (-13.06, 0.70)	0.13*** (0.07, 0.23)	1.88*** (1.70, 2.08)
Location (Reference: To go)			
Eat in	8.75* (3.05, 14.46)	1.20* (1.04, 1.38)	1.20 (0.75, 1.93)
Beverage Type (Reference: Regular)			
Diet or unsweetened	-225.08*** (-249.95, -200.22)	—	—
Juice, water, hot drink, or other	-165.27*** (-207.70, -122.83)	—	—
Why consumer chose beverage (Reference: Taste)			
Price	-6.29 (-19.12, 6.54)	0.53* (0.29, 0.95)	1.98* (1.09, 3.58)
Combination meal ("Combo") (Reference: None)			
Small or medium combo	11.66 (-0.80, 24.12)	1.28 (0.73, 2.26)	0.83 (0.25, 2.77)
Large combo	85.13* (55.30, 114.97)	1.93 (0.62, 5.95)	19.02*** (14.87, 24.32)
Food ^c			
Burger, sandwich, or wrap (Reference: No) ^c	4.88* (0.22, 9.54)	0.89 (0.63, 1.25)	0.72 (0.48, 1.11)
Salad (Reference: No) ^c	-3.07 (-20.50, 14.36)	0.46*** (0.33, 0.66)	0.66 (0.18, 2.48)
Age group (Reference: 50 years)			
18–29 years	7.93 (-1.63, 17.49)	1.30 (0.99, 1.71)	1.16 (0.87, 1.54)
30–39 years	2.07 (-3.23, 7.38)	1.06 (0.75, 1.51)	1.15 (0.84, 1.59)
40–49 years	4.71 (-1.72, 11.14)	1.32 (0.88, 1.98)	0.92 (0.52, 1.62)
Gender (Reference: Male)			
Female	3.40 (-10.25, 17.05)	1.31 (0.84, 2.04)	0.85 (0.62, 1.16)

Variable	Outcome		
	Beverage calories (kcal)	SSB (Sugar >0 g)	SSB 30 ounces ^b
	Coefficient (95% CI)	AOR (95% CI)	AOR (95% CI)
Race/Ethnicity (Reference: Non-Hispanic white)			
Non-Hispanic black	4.30 (-18.41, 27.01)	1.04 (0.76, 1.43)	0.99 (0.83, 1.18)
Hispanic	-2.76 (-15.35, 9.82)	1.05 (0.76, 1.44)	0.72 (0.41, 1.29)
Asian	-11.23 (-22.97, 0.52)	0.82 (0.47, 1.41)	0.36*** (0.26, 0.50)
Other	4.64 (-30.97, 40.25)	1.16 (0.72, 1.88)	0.99 (0.49, 2.02)
Missing	-13.80 (-31.03, 3.43)	0.92 (0.60, 1.42)	0.72 (0.41, 1.26)
Education (Reference: High school or less)			
Some college or AA degree	-2.51 (-8.22, 3.21)	0.71 (0.46, 1.09)	1.17* (1.00, 1.37)
College	-1.41 (-8.82, 5.99)	0.92 (0.79, 1.08)	1.10 (0.95, 1.28)
Graduate degree	-4.18 (-15.23, 6.87)	0.87 (0.60, 1.28)	1.12 (0.57, 2.21)
Missing	8.41 (-25.58, 42.39)	0.63 (0.30, 1.35)	2.24** (1.36, 3.69)
Log Likelihood	–	–647	–1,257
R ² or Pseudo-R ²	0.59	0.72	0.25
N	3,775	3,775	3,775

Notes: Boldface indicates statistical significance

*
 $p < 0.05$;

**
 $p < 0.01$;

***
 $p < 0.001$.

^a Subset of consumers who purchased a non-generic beverage from a fast food restaurant.

^b Large at McDonald's and KFC; medium at Burger King, Subway, and Wendy's.

^c The reference category was "no" for each food item. For example, in the "salad" row, the reference category was "no salad".