

Self-Report of Sugar-Sweetened Beverage and Fast Food Consumption by Annual Household Income

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The proportion of Rhode Island adults who are obese or overweight has increased drastically in the past 15 years.¹ Both consumption of **sugar-sweetened beverages (SSB)** and consumption of **fast food (FF)** are associated with obesity.²⁻⁵ This report presents Rhode Island survey data on SSB and FF consumption, by income level.

METHODS

In 2007, the **Behavioral Risk Factor Surveillance System (BRFSS)** used a multistage sampling design based on random-digit-dialing methods to select a representative sample of the non-institutionalized civilian population aged ≥ 18 years in Rhode Island. Details on the design, sampling procedures, and measures used in BRFSS have been described previously.⁶

The 2007 BRFSS questionnaire included standardized core questions as well as additional questions asked only in Rhode Island. The survey asks for income: "What is your annual household income from all sources?" Of the additional questions, some focused on obesity-related risk factors, including consumption of SSB and FF. These questions were asked in an open-ended fashion; e.g., "Yesterday, how many glasses, bottles or cans of soda (such as Coke or Sprite) or other sweetened drinks (such as fruit punch or Sunny Delight) did you drink? Do not include diet or sugar free drinks." Interviewers were allowed to add if necessary, "That would be a large glass or a 12 oz. can or bottle. The average juice pack is 6 oz or $\frac{1}{2}$ a can," and were allowed to supply "This includes drinks such as Hawaiian punch, Hi-C, Snapple, Gatorade, other sports drinks, milk with added sugar, and sugar sweetened milk, e.g. coffee milk." Fast food was asked, "In the past week, how many times did you eat fast food or pizza at work, at home, at fast-food restaurants, carryout or drive thru, or somewhere else?" Interviewers were allowed to read if necessary, "Such as food you get at McDonald's, Burger King, Taco Bell, KFC, or Pizza Hut," and further if strongly needed, "foods from American-style fast food restaurants."

STATISTICAL ANALYSES

The sample of 12 months was combined to one sample, and weighted to the respondent's probability of selection and to the age- and sex-specific population or age-, sex-, and race-specific population data using the 2007 census projections reported by the Census Bureau for Rhode Island. Detailed weighting and analytic methodologies have been documented previously.⁷

Income was coded as $< \$25K$, $\$25K-34,999$, $\$35K-49,999$, $\$50K-74,999$ and $\geq \$75,000$. Reported SSB consumption was coded as one or more servings per day, and FF as

one or more times per week. SSB and FF consumption were assessed with income status by chi square using SAS^{®1} and SUDAAN^{®2} to adjust for weights. Responses coded as "do not know" or "refused" were excluded from the analyses.

RESULTS

Higher reported SSB consumption was associated with lower income status. Thirty-five percent of respondents in the $\$25,000$ or less group reported consuming SSB in the previous day. FF also differed by income, but was highest in the middle income groups ($\$35,000-75,000$) where over 60% of respondents reported FF consumption more than once a week. Lower FF consumption was reported in the highest and lowest income groups.

DISCUSSION

BRFSS data for SSB and FF consumption reveal differences in the consumption of both based on income levels. A larger proportion of adults who are in the lowest income bracket are consuming one or more SSB per day, while a larger proportion of adults who are in the middle income bracket are consuming FF one or more times per week. Higher SSB consumption among low-income populations is consistent with prior results from two smaller studies.^{10,11} More frequent FF consumption among high-income populations has also been shown in the literature, but the highest consumption among those with middle income has not been previously reported to our knowledge.¹²⁻¹⁴

The consumption of SSB can result in excess caloric intake. Studies suggest that the additional calories from SSB are not compensated for by reducing calories from other foods.^{15,16} Because more nutrient-dense beverages such as milk tend to be more expensive than SSB, lower income populations may choose SSB over healthier options for financial reasons. While efforts aimed at decreasing SSB consumption should include education, additional efforts can include strategies to make healthier options more and SSB less financially attractive to the lowest income populations. Another strategy that has been implemented to decrease SSB consumption is to limit access. In 2006, the Rhode Island General Assembly banned all beverages except water, milk and 100% juice in school vending and *a la carte* venues.

Eating more FF is linked to eating more calories, more saturated fat, fewer fruits and vegetables, and less milk.¹⁷ Expenditures on food eaten away from home have increased drastically since 1977.¹⁸ Americans now spend almost half of their food expenditures on these foods.¹⁹ Increased demands on fami-

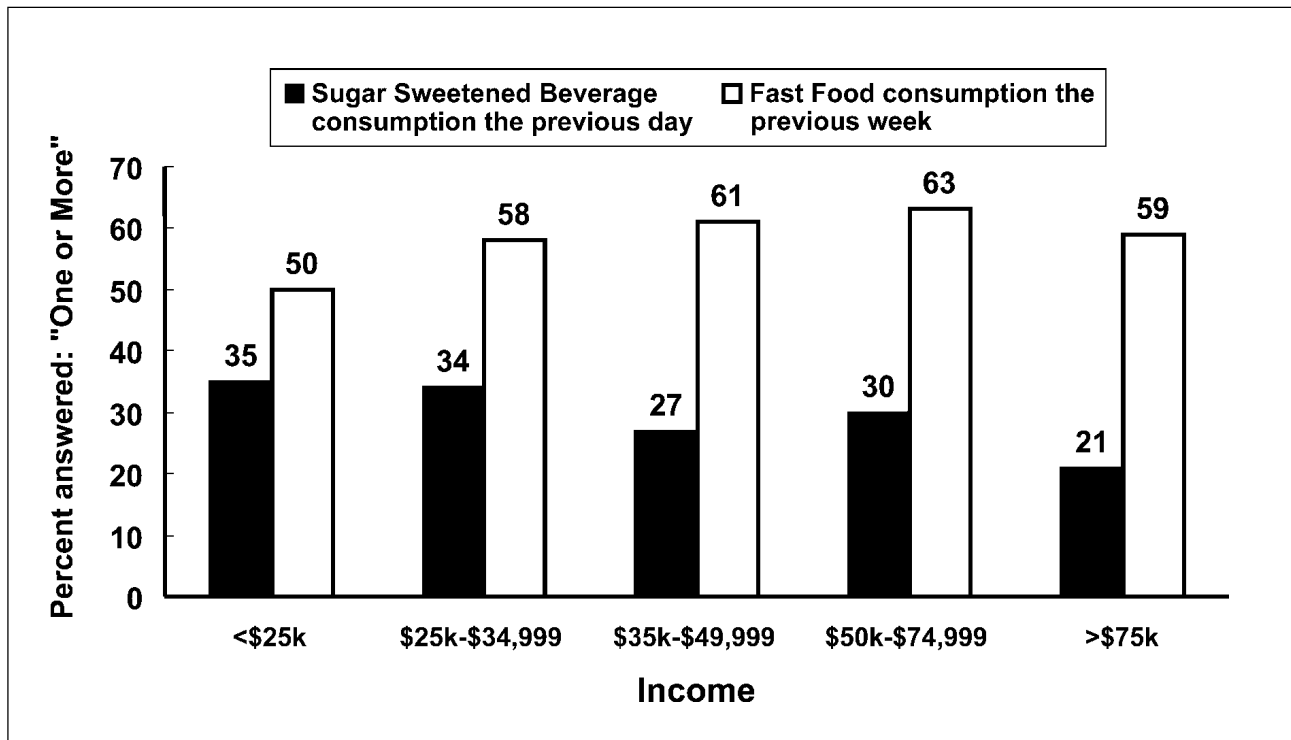


Figure 1. Self-Report of Sugar Sweetened Beverage and Fast Food Consumption, Ages 18 and Older, by Annual Household Income, Rhode Island BRFSS, 2007

lies' time are making fast food a tempting option. Strategies to decrease caloric consumption from fast food could focus on helping consumers make better choices when eating away from home. Some states now require certain restaurants to provide nutrient information at the point of purchase.

Further attention to help Rhode Islanders at highest risk of SSB and FF consumption to decrease these behaviors is appropriate to help stem the tide of overweight and obesity in Rhode Island.

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