# Factors Associated with Sugar-Sweetened Beverage Consumption among Children and Adolescents in the United States by Race/Ethnicity: NHANES 2011-2016

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## INTRODUCTION

- Consumption of sugar-sweetened beverages (SSB) during youth contributes to overall poor diet quality and obesity.[1-2]
- Childhood obesity increases risk for cardiometabolic disorders later in life.[3]
- Stratified analyses of youth SSB consumption in the United States indicate that Asians consume the least, and non-Hispanic Blacks and Hispanics consume the most.[4]
- To our knowledge, no studies have investigated the potential reasons for this disparity nor how factors associated with youth SSB consumption differ among racial/ethnic subgroups.
- Understanding why Asian youth consume less SSB has implications for future interventions aimed to decrease SSB consumption in other youth.

## PURPOSE

To identify correlates of SSB intake and determine whether associations differ between Asian youth and their peers of other races/ethnicities.

## METHOD

- Data for this analysis were from the 2011-2016 cycles of the National Health and Nutrition Examination Survey (NHANES).
- Two 24-hr dietary recalls were averaged to approximate usual intake.
- Individuals had complete dietary recall and were 2-19 years old (n=7,661).
- SSB was defined as regular soda, sweetened bottled waters, sweetened fruit juices and nectars, sports and energy drinks, sweetened coffees and teas.
- Mean beverage consumption was calculated, overall and by race/ethnicity, accounting for sampling strategy and weighting
- Multivariable linear regression models were developed to assess effects of covariates on SSB intake.
- STATA v. 15.0 was used for all analyses.

## RESULTS

**Table 1.** Mean beverage intake

| Race/ethnicity | SSB intake, mean (SE) |
|---|---|
| **Mexican American** | 1.26 cups (0.06) |
| **Other Hispanic** | 1.17 cups (0.06) |
| **Non-Hispanic White** | 1.32 cups (0.06) |
| **Non-Hispanic Black** | 1.52 cups (0.07) |
| **Non-Hispanic Asian** | 0.62 cups (0.05) |
| **Other race/Multiracial** | 1.23 cups (0.17) |

Mean consumption was the **lowest** among **Asians** (M=0.62 cups/day) and **highest** among **non-Hispanic Blacks** (M=1.52 cups/day).

Consumption remained **low (<1.00/day) in Asians** using alternative definitions.

**Low water intake** and **age increased** SSB consumption across all races and ethnicities; **gender** and **parental education decreased** intake among a subset of races and ethnicities.

**Table 2.** Factors significantly associated with SSB consumption

| | | β | 95% CI | p-value |
|---|---|---|---|---|
| **Drinking <1 cup of water** | Asian American | 1.32 cups | 1.13, 1.52 | 0.001 |
| | Mexican American | 1.42 cups | 1.25, 1.60 | 0.000 |
| | Other Hispanic | 1.36 cups | 1.14, 1.58 | 0.002 |
| | Non-Hispanic White | 1.71 cups | 1.45, 1.97 | 0.000 |
| | Non-Hispanic Black | 1.46 cups | 1.29, 1.63 | 0.000 |
| | Other/Multiracial | 1.90 cups | 1.12, 2.68 | 0.024 |
| **Age** | Asian American | 0.06 cups | 0.05, 0.08 | 0.000 |
| | Mexican American | 0.09 cups | 0.07, 0.10 | 0.000 |
| | Other Hispanic | 0.08 cups | 0.06, 0.11 | 0.000 |
| | Non-Hispanic White | 0.11 cups | 0.10, 0.13 | 0.000 |
| | Non-Hispanic Black | 0.11 cups | 0.09, 0.14 | 0.000 |
| | Other/Multiracial | 0.10 cups | 0.05, 0.15 | 0.001 |
| **Female** | Mexican American | -0.26 cups | -0.43, -0.10 | 0.003 |
| | Other Hispanic | -0.33 cups | -0.56, -0.10 | 0.006 |
| | Non-Hispanic White | -0.35 cups | -0.53, -0.18 | 0.000 |
| | Non-Hispanic Black | -0.18 cups | -0.33, -0.04 | 0.014 |
| | Other/Multiracial | -0.41 cups | -0.84, 0.02 | 0.061 |
| **Parent college graduate** | Non-Hispanic White | -0.75 cups | -1.33, -0.17 | 0.013 |

## CONCLUSIONS

- SSB consumption is disproportionately low among Asians, regardless of SSB definition; current dietary recall methods may not capture culturally relevant beverages (e.g., boba tea, aloe drinks).
- Future studies should include sociocultural determinants and behaviors not measured in NHANES, e.g., acculturation, dietary norms, to investigate their impact on consumption.

## REFERENCES

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