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Introduction

- Environmental factors such as the availability, price, and promotion of food and beverage products in community food outlets play a role in dietary behaviors and obesity.
- Consumption of sugar-sweetened beverages has been shown to contribute to weight gain and obesity in both young and adult populations.

Objective

- To assess the availability, price, and promotion of a variety of sugar-sweetened and unsweetened beverages in a national sample of food stores and identify differences by community demographics.

Methods

- Community sample was defined as the catchment areas for public secondary schools participating in the University of Michigan's *Monitoring the Future* survey.
- Store sample was identified by screening outlets listed in two commercial business lists (Dun & Bradstreet and InfoUSA). This was supplemented with field-discovered food stores given potential errors in commercial business lists.
- Trained data collectors completed a 12-page observation form in each sampled and field-discovered food store during the spring/summer of 2010.
- Observation form included availability and price measures for regular and diet soda, 100% juice, sweetened juice drinks, energy drinks, isotonic sports drinks, enhanced water, and plain bottled water, and exterior advertising counts for beverages, regular soda, and energy drinks.
- To allow for price comparisons of standardized products, ≥2 priority brands and package sizes were identified for all beverage products. Only prices for the first priority brand and package size were included in these analyses. Price data were not adjusted for regional cost of living differences.
- Analyses presented here include all store types and were weighted to provide inference to food stores in communities surrounding public secondary schools throughout the U.S.

Completed Store Sample	N
Supermarkets	331
Grocery stores	569
Limited service store	2,056
TOTAL	2,956

Product Availability

- A significantly higher percentage of stores had regular soda available than had diet soda (both family- and individual-size bottles) ($p < 0.05$). There was no significant difference in the availability of diet soda by community median household income.
- 100% orange juice (both family- and individual-size), energy drinks, and enhanced waters were more frequently available in stores in high-income communities compared to stores in low- and middle-income communities.
- Bottled water was available in nearly all (>95%) stores; availability did not differ significantly by race or income.

Product Pricing

- All beverage products, aside from orange juice (half-gallon) and juice drinks, cost significantly more on average in high-income communities compared to low- and middle-income communities.
- No significant difference was found in the price of regular soda compared to diet soda.
- The average price of a Minute Maid half-gallon of orange juice was significantly higher than that for a half-gallon of Minute Maid juice drink with <50% juice (average difference \$1.30, $p < 0.0001$).
- The average price of a 20 oz regular Coke was significantly higher than for a 20 oz Dasani water (average difference \$0.14, $p < 0.0001$).

Placement and Promotion

- A significantly higher percentage of stores had sweetened beverages than had bottled water available for sale at the checkout ($p < 0.05$). Bottled water was less frequently available at the checkout in stores in Black and Hispanic communities compared to White.
- The percentage of stores with one or more ad(s) for regular soda was significantly higher in low-income communities compared to middle- and high-income communities.
- The average number of exterior advertisements for regular soda was relatively low among all stores (1.31); however, this average was significantly higher in stores in White communities compared to Black communities.

Results

Average Price of Select Beverage Products by Predominant Race of Community

Product	≥66% White	≥50% Black	≥50% Hispanic	Mixed	p
2 liter regular Coke	\$1.84	\$1.91	\$1.96	\$1.89	0.0005
20 oz regular Coke	\$1.48	\$1.39	\$1.49	\$1.48	0.0039
20 oz Dasani water	\$1.29	\$1.32	\$1.37	\$1.34	0.0023
15.2 oz Minute Maid orange juice	\$1.69	\$1.68	\$1.77	\$1.69	0.0268
15.2 oz Minute Maid juice drink	\$1.68	\$1.54	\$1.71	\$1.70	0.3428
8-8.5 oz Red Bull	\$2.21	\$2.24	\$2.22	\$2.26	0.0088

Percentage of Stores with Relevant Promotional Practices by Predominant Race of Community

Promotional Practice	≥66% White	≥50% Black	≥50% Hispanic	Mixed	p
Bottled water at the checkout	24.0	14.4	17.2	21.3	0.0361
Sweetened beverages at the checkout	32.4	23.3	23.7	30.5	0.0389
One or more beverage ad(s) outside	59.2	62.8	62.2	58.2	0.7140
One or more regular soda ad(s) outside	37.8	30.0	35.7	35.2	0.4672
One or more energy drink ad(s) outside	17.3	12.2	19.6	22.6	0.0501

Discussion & Conclusion

Prior studies have shown that food stores in lower-income urban and predominantly Black communities were less likely to carry healthier items than stores in higher-income and predominantly White urban communities. There is also some evidence of targeted marketing of unhealthy food and beverages in predominantly Black communities.

In the current study, most stores visited (≥80%) carried all of the beverages on the observation form, though family-size orange juice and juice drinks were less frequently available. Availability of some products differed significantly by the predominant race and median household income of the community, though not in a consistent direction. The average price of standardized beverage products also differed significantly by community income, with most products costing significantly more in high-income compared to middle- and low-income communities. Average prices for several products differed by race, but not in a consistent direction. Finally, sweetened beverage promotion through exterior ads differed by community income and by race; this relationship varied by the specific product advertised.

The current study illustrates some of the disparities in the availability, price, and promotion of sweetened and unsweetened beverages in U.S. food stores by community demographics and highlights opportunities for food stores to increase the promotion of healthy and decrease the promotion of unhealthy beverage products. Future research will assess differences by store type and track changes in these store characteristics over time.

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