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No Impact of the Columbus, Ohio, Default Beverage Policy on Children's Meal Beverage Offerings Four-Months Post-Implementation

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Key Findings

- **This study found no overall change in default beverage offerings in children's meals in Columbus relative to comparison sites following the introduction of the Columbus Default Beverage Policy.**
- **Despite finding no overall change, study results revealed a reduction in default offerings of non-compliant flavored milks in Columbus relative to restaurants in comparison sites not subject to the policy.**

Introduction

Consumption of sugar-sweetened beverages (SSBs) is associated with increased risk for childhood obesity and other adverse health conditions such as diabetes and dental caries.[1-3] Nutritional guidance recommends no more than 10% of total energy be derived from added sugars,[1] yet, 65% of United States (U.S.) children exceed these limits.[4] SSBs are a leading source of added sugars consumption among children,[1,4] particularly as children age.[5] SSBs are readily available across several settings, including being commonly offered to children in fast-food restaurants, providing an opportunity for policy intervention.[6,7]

One-fifth of U.S. household food budgets are spent on fast food,[8] which includes products high in sodium, calories, and sugars.[9,10] On a given day, one-third of youth consume fast food,[11] consumption of which is associated with greater intake of total fat, saturated fat, sugars, and SSBs.[12] Further, recent evidence showed that dining in a sales-leading fast-food chain, ordering a combination meal, and ordering from the children's menu are all positively associated with purchasing SSBs.[13] While one study found a reduction in soda offerings on restaurant menus, it also found that soda was being replaced by other types of SSBs (e.g., flavored milks), resulting in a stable presence of sugary drinks.[14] Across restaurant-offered SSBs, one study noted beverages newly introduced to the menu have been increasing in sugar content,[15] a finding supported by a comparison of 2012 and 2014 restaurant menu offerings.[10]

Voluntary initiatives such as Kids LiveWell[16] and Choose Health LA Restaurants[17] aim to provide healthier children's offerings in restaurants; however, the evidence for effectiveness is limited and study findings are inconsistent. While initiative goals and primary outcomes vary, studies found promising changes to improve nutritional quality,[18] include produce and unsweetened beverage offerings,[18,19] as well as reduce entrée calories in children's meals.[14] However, unpropitiously, side offering calories increased,[14] cashiers continued to offer unhealthy children's meal beverages,[19] and SSBs remained staple children's menu offerings.[19] Evidence for restaurants offering healthy default beverages in compliance with healthy default beverage policies (i.e., standards for improving the nutritional quality of children's meal beverages) is sparse and varied. For example, post-implementation, one study found compliant onsite menu boards and noncompliant cashier offerings,[6] and one study reported noncompliant online menus but only assessed restaurants serving low-income neighborhoods.[20] Aside from policy compliance, one study interviewed restaurant managers post-implementation revealing less than 30% of managers in one site and no managers in the other site were familiar with the required restaurant changes to children's meals.[6]

In 2020, Columbus, Ohio (OH), City Council members approved the Columbus Default Beverage Policy, which became effective June 17, 2021.[21] Provisions require restaurants with beverages included in the sale of children's meals (i.e., combination of food and/or beverage items marketed to children and sold for a single price) provide a default beverage (i.e., offering automatically included in the meal) that falls into one of the following healthy beverage categories: unsweetened water, no- or low-fat milk (≤150 calories per serving), or 100% fruit juice or reconstituted juice with no added sweeteners (≤8 fluid ounces per serving). This research brief examines restaurant menu default beverages offered with children's meals and ordinance compliance across online platforms from 10 restaurant chains in Columbus, OH, and comparison sites pre- and post-implementation.

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Methods

This study assessed the impact of the Columbus Default Beverage Policy on children's meal default beverage offerings using online audit data collected in June and October 2021, two-weeks pre- and four-months post-implementation. A total of 54 Columbus (intervention site) and 57 Akron, Cincinnati, Athens, and Findlay, OH (comparison sites), fast-food restaurants with data available at both time points were included in the analyses.

National sales leaders[22] were compared with restaurants prevalent in Ohio to identify sample chains. Eligible chains were classified as quick service (i.e., offering minimal or no table service and rapid food preparation), provided a beverage with the sale of a children's meal, and had locations in both the intervention and comparison sites. Chains voluntarily committing to healthier children's offerings were excluded. Ten chains were included in the sample; within each chain, up to 10 locations across each site were audited. Menus were sourced from five online ordering platforms including restaurant or corporate websites, Uber Eats, DoorDash, Grubhub, and Google Ordering. Coders captured electronic screenshots of children's meals and accompanying beverage selections based on the first available online platform (using the platform ordering above) servicing each unique restaurant (i.e., associated with specific address).

To assess policy compliance, seven overarching beverage categories were created (i.e., water, milk, juice, soda, tea, sports drinks, and frozen drinks). Within each category, beverages were further classified by sweetener type (i.e., unsweetened, and artificially or sugar-sweetened), milk fat percentage (i.e., non-, low-, reduced-, or whole-fat), and flavoring (i.e., unflavored or flavored). Additionally, because ordinance provisions restricted calories and serving sizes for milk and juice offerings, this information was recorded; when not available on the ordering platform, values were sought from chain-specific sources and manufacturer websites. Based on beverage category, sweetener type, milk fat percentage, flavoring, calories, and serving sizes, beverages were classified by type and compliance status (see Table 1 for classifications). Coders also classified beverages as default and secondary (i.e., offering obtained with additional step from consumer).

To assess changes in compliance of children's meal default beverage offerings over time in Columbus relative to the comparison sites, odds ratios and corresponding 95% confidence intervals were estimated from difference-in-differences (DID) analyses conducted using logistic regression models. Regressions were clustered on restaurant identifiers with robust standard errors. Analyses were conducted in Stata/SE 13.1.

Results

Table 1 shows overall compliance for restaurant default beverage offerings and offerings by beverage type and compliance within type. Findings reveal milk, followed by 100% juice, were the most prevalent default offerings to children. Overall, 41% of Columbus restaurants met policy provisions pre-implementation, which increased to 54% post-implementation, a trend similarly found in comparison sites (39% and 46%, respectively). The DID results show no statistically significant overall difference between Columbus and comparison restaurants in changes made to default offerings, suggesting no change in compliance attributable to the policy (OR: 1.26, 95% CI: 0.80, 2.00).

While changes in overall compliance were not found, there was a substantial reduction (OR: 0.10, 95% CI: 0.01, 0.72) in non-compliant flavored milk offerings as a children's meal default beverage in Columbus relative to comparison sites. Approximately one-fifth of restaurants offered non-compliant flavored milks by default pre-implementation, while only 2% offered them post-implementation.

Discussion

Following implementation of the Columbus Default Beverage Policy, this study found no change in compliance of beverages offered as defaults in children's meals in Columbus relative to comparison restaurants. Across both intervention and comparison sites pre- and post-implementation, policy-compliant milks and juices were offered to children as default beverages most often (89-93% and 68-80%, respectively), followed closely by non-compliant offerings such as soda (44-54%). Similar findings were reported for the prevalence of beverages included with children's meals in a study assessing impacts of the Wilmington, Delaware, healthy beverage default policy.[6]

By beverage type, across time points, there was a significant change in non-compliant flavored milk offerings, which had reduced odds of being offered as default beverages in Columbus relative to comparison sites. Further investigation revealed this change was driven by a single restaurant chain replacing non-compliant flavored default milks with compliant versions from pre- to post-implementation. While policy can motivate changes

TABLE 1 **Default beverage offerings in children's meals from Columbus, Ohio, and comparison restaurants, pre- and post-implementation of the Columbus Default Beverage Policy**

Beverages	Columbus		Comparison		Difference-in-Differences	
	Pre	Post	Pre	Post	Odds Ratio	95% Confidence Interval
Water	48%	46%	49%	51%	0.87	(0.61, 1.23)
Bottled	46%	44%	40%	42%	0.86	(0.60, 1.23)
Fountain	2%	2%	12%	14%	0.86	(0.64, 1.16)
Milk	89%	89%	93%	93%	NC	--
Compliant	89%	89%	93%	93%	NC	--
Unflavored	89%	89%	93%	93%	NC	--
Flavored	20%	39%	14%	21%	1.52	(0.75, 3.09)
Non-Compliant	20%	2%	33%	26%	0.10	(0.01, 0.72)
Unflavored	0%	0%	0%	0%	NC	--
Flavored	20%	2%	33%	26%	0.10	(0.01, 0.72)
100% Juice	80%	80%	70%	68%	1.09	(0.92, 1.28)
Compliant	80%	80%	70%	68%	1.09	(0.92, 1.28)
Non-Compliant	0%	0%	12%	12%	NC	--
Other Non-Compliant Beverages	44%	44%	54%	54%	NC	--
SSB Soda	44%	44%	54%	54%	NC	--
ASB Soda	44%	41%	54%	54%	0.86	(0.70, 1.06)
SSB Juice Drink	37%	37%	37%	25%	1.79	(1.19, 2.71)
ASB Juice Drink	19%	19%	25%	23%	1.10	(0.91, 1.33)
Remaining Non-Compliant Beverages	22%	22%	39%	39%	1.00	(0.74, 1.35)
Overall Beverage Compliance	**41%**	**54%**	**39%**	**46%**	**1.26**	**(0.80, 2.00)**

ASB: artificially sweetened beverage; NC: could not be computed (no variation in outcome over time); SSB: sugar-sweetened beverage.

N=54 restaurants in Columbus, Ohio, and 57 restaurants in comparison sites of Akron, Athens, Cincinnati, and Findlay, Ohio. Data were collected from a balanced sample of restaurants at baseline and follow-up. Statistics are shown on the percent of restaurants offering the given beverages by default as part of children's meals, and the percent of restaurants meeting the requirements of the Columbus, Ohio, Default Beverage Policy. Odds ratios and corresponding 95% confidence intervals are shown for difference-in-differences coefficients from logistic regression models with robust standard errors clustered on restaurant.

to default beverage offerings, several other factors (e.g., new products) can also spur substitutions. Underlying mechanisms for change represent an area for future study.

Third-party platforms operate more independently from the restaurant location than do restaurant websites, and the extent to which these platforms are subject to requirements imposed on the restaurant itself, such as the Columbus Default Beverage Policy, is not known. A California study of online platforms addressed interpretation challenges with policy language by assessing the extent to which menus adhered to the policy using four classifications ranging from lenient-to-restrictive policy application, and found 41% of menus loosely, but only 6% strictly, complied with the policy.[20]

There is limited evidence with which to compare the current study's finding that implementation of the Columbus Default Beverage Policy was not associated with restaurants offering healthy default beverages with children's meals. Only one evaluation of children's meal default beverage policies was identified that included both pre- and post-implementation data. That evaluation collected onsite audit data assessing both the Wilmington, Delaware, and California (CA) default beverage policies, with CA restaurants chosen specifically from low-income neighborhoods; however, neither evaluation included a comparison site.[6] The results revealed no changes in menu compliance in Wilmington, but compliance with default offerings on menus increased in CA with 10% of restaurants at baseline and 66% at follow-up adhering to healthy beverage criteria.[6] However, it should be noted that in our study we also found pre-post changes in the intervention site, but a null effect relative to the comparison sites, highlighting the need for a comparison to adjust for secular trends. A study of the CA policy with only post-implementation data from restaurants in low-income areas found 6% to 41% of online menus were policy-compliant depending on how restrictively policy criteria were interpreted.[20] Three studies assessed varied outcomes from voluntary initiatives; two studies found partial compliance with commitments to healthier children's meal beverages[18,19] and two reported SSBs remained staple beverages on menu boards.[14,19] Future policy evaluations are warranted to understand the nuances of policy compliance, including the ease with which restaurants may amend supply contracts, which vendor platforms are subject to the policy, mechanisms for enforcement, and how policymakers can make restaurants aware of the policy and effectively communicate necessary changes to menu offerings.

References

1. U.S. Department of Agriculture and U.S. Department of Health and Human Services. *Dietary Guidelines for Americans, 2020-2025.* 9th Edition; December 2020. Available from: https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary_Guidelines_for_Americans-2020-2025.pdf
2. Bleich SN, Vercammen KA. The negative impact of sugar-sweetened beverages on children's health: An update of the literature. *BMC Obesity.* 2018;5(1):1-27.
3. Malik V, Hu FB. The role of sugar-sweetened beverages in the global epidemics of obesity and chronic diseases. *Nat Rev Endocrinol.* 2022;18:205-218.
4. Bowman S, Clemens J, Friday J, Schroeder N, LaComb R. *Added sugars in American children's diet: What We Eat in America, NHANES 2015-2016.* Dietary Data Brief No. 26. Food Surveys Research Group (USDA-ARS); December 2019. Available from: https://www.ars.usda.gov/ARSUserFiles/80400530/pdf/DBrief/26_Sources%20of%20Added%20Sugars%20in%20Children's%20Diet_1516.pdf
5. Ricciuto L, Fulgoni III VL, Gaine PC, Scott MO, DiFrancesco L. Sources of added sugars intake among the U.S. population: Analysis by selected sociodemographic factors using the National Health and Nutrition Examination Survey 2011-18. *Front Nutr.* 2021;8:316.
6. Ritchie LD, Lessard L, Harpainter P, et al. Restaurant kids' meal beverage offerings before and after implementation of healthy default beverage policy statewide in California compared with citywide in Wilmington, Delaware. *Public Health Nutr.* 2021;25(3):794-804.
7. McGurk MD, Cacal SL, Vu U, et al. Baseline assessment of children's meals and healthy beverage options prior to a state-level healthy default beverage (HDB) law. *J Healthy Eat Act Living.* 2021;1(2):53-63.
8. Saksena MJ, Okrant AM, Anekwe TD, et al. *America's Eating Habits: Food Away From Home.* EIB-196. U.S. Department of Agriculture, Economic Research Service; September 2018. Available from: https://www.ers.usda.gov/webdocs/publications/90228/eib-196.pdf?v=6540.5
9. McCrory MA, Harbaugh AG, Appeadu S, Roberts SB. Fast-food offerings in the United States in 1986, 1991, and 2016 show large increases in food variety, portion size, dietary energy, and selected micronutrients. *J Acad Nutr Diet.* 2019;119(6):923-933.
10. Jarlenski MP, Wolfson JA, Bleich SN. Macronutrient composition of menu offerings in fast food restaurants in the U.S. *Am J Prev Med.* 2016;51(4):e91-e97.
11. Vikraman S, Fryar CD, Ogden CL. *Caloric intake from fast food among children and adolescents in the United States, 2011-2012.* NCHS Data Brief 213. September 2015. Available from: https://pubmed.ncbi.nlm.nih.gov/26375457/
12. Powell LM, Nguyen BT. Fast-food and full-service restaurant consumption among children and adolescents: effect on energy, beverage, and nutrient intake. *JAMA Pediatri.* 2013;167(1):14-20.
13. Moran A, Subramanian S, Rimm E, Bleich S. Characteristics associated with household purchases of sugar-sweetened beverages in US restaurants. *Obesity (Silver Spring).* 2019;27(2):339-348.
14. Moran AJ, Block JP, Goshev SG, Bleich SN, Roberto CA. Trends in nutrient content of children's menu items in U.S. chain restaurants. *Am J Prev Med.* 2017;52(3):284-291.
15. Frelier JM, Moran AJ, Vercammen KA, Jarlenski MP, Bleich SN. Trends in Calories and Nutrients of Beverages in US Chain Restaurants, 2012-2017. *Am J Prev Med.* 2019;57(2):231-240.
16. National Restaurant Association. Kids LiveWell. 2022; accessed April 20, 2022. Available from: https://restaurant.org/education-and-resources/learning-center/food-nutrition/kids-live-well/
17. County of Los Angeles Public Health. Choose Health LA Restaurants. 2022; accessed April 20, 2022. Available from: http://publichealth.lacounty.gov/chronic/restaurantshome.htm
18. Gase LN, Kaur M, Dunning L, Montes C, Kuo T. What menu changes do restaurants make after joining a voluntary restaurant recognition program? *Appetite.* 2015;89:131-135.
19. Harpainter P, Hewawitharana SC, Lee DL, et al. Voluntary Kids' Meal Beverage Standards: Are They Sufficient to Ensure Healthier Restaurant Practices and Consumer Choices? *Int J Environ Res Public Health.* 2020;17(15).
20. Thompson HR, Martin A, Strochlic R, Singh S, Woodward-Lopez G. Limited implementation of California's healthy default beverage law for children's meals sold online. *Public Health Nutr.* 2022:1-23.
21. City of Columbus, Ohio. Columbus Default Beverage Policy. Ordinance No. 2870-2020 (2020). Available from: https://library.municode.com/oh/columbus/ordinances/code_of_ordinances?nodeId=1058065
22. Nation's Restaurant News. Meet the Top 200 restaurant chains in America. 2020. Available from: https://www.nrn.com/top-200-restaurants/meet-top-200-restaurant-chains-america

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