

Background

- Households with low incomes and young children have been disproportionately negatively affected by COVID-19
- Emergency changes to food assistance programs, such as WIC, can buffer some of these negative impacts
- The objective was to understand how COVID-19 altered the nutritional quality of WIC participants' food purchases

Methods

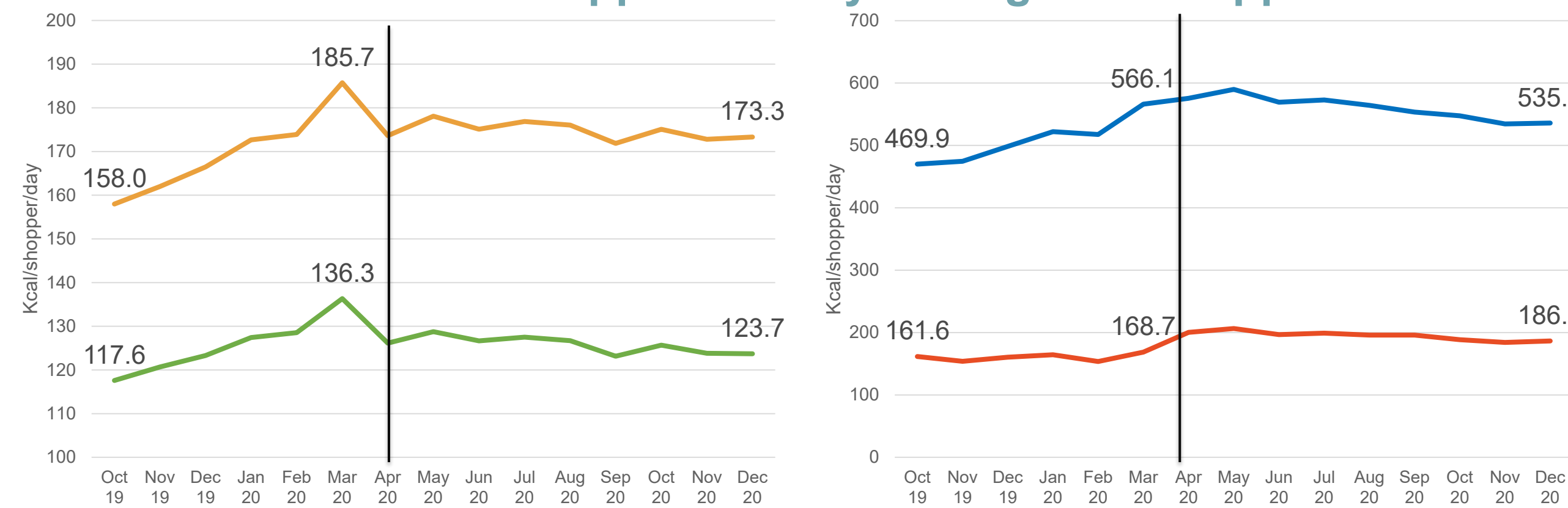
- Longitudinal food transaction data from a large grocery store chain with 496 stores in 86 of North Carolina's 100 counties
- >1.2 million shopper-month observations from 187,005 unique WIC shoppers from October 2019 to December 2020
- WIC shoppers identified by payment type
- Foods purchases grouped into nutritionally-relevant food groups (i.e., fruits, vegetables, legumes and nuts (FVLN), FVLN without salt/fat/sugar, sugar sweetened beverages, junk food)
- Fixed effects linear regression models with robust standard errors used to examine within shopper effects
- Binary indicator variable for pre/post March 2020 interacted with linear time trend
- Models were adjusted for time varying, measured characteristics
- Outcomes are calories/shopper/day and share of total calories purchased

Pre/Post March 2020 Calories Per Day and Share of Calories

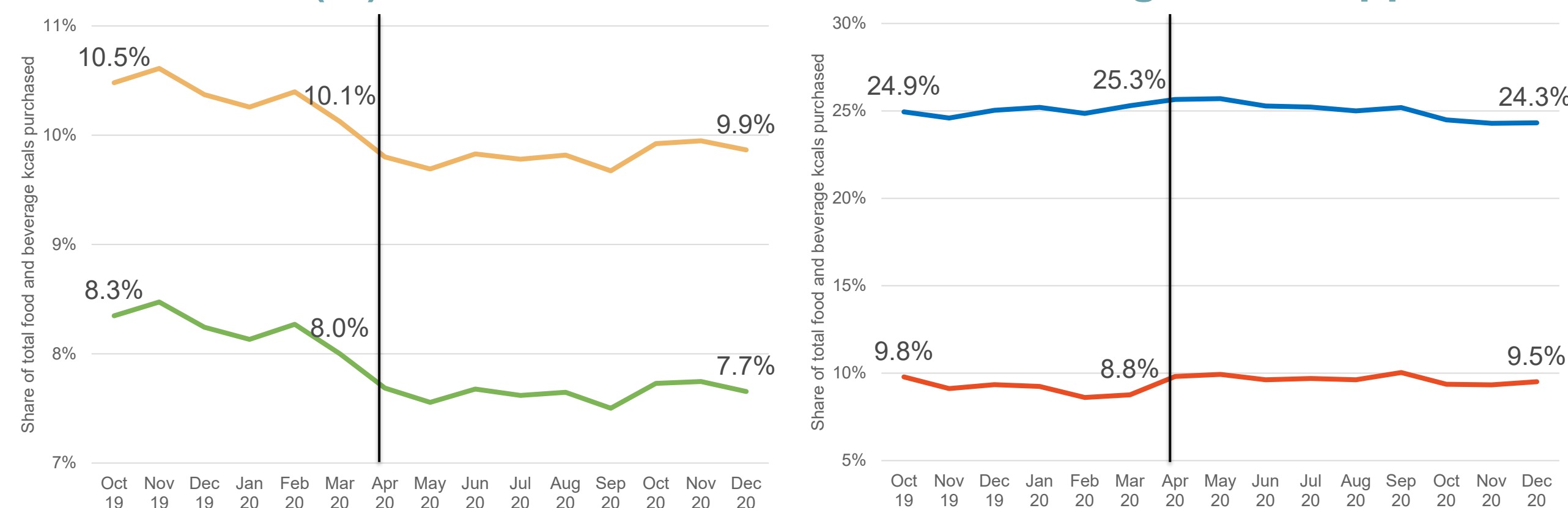
	Fruits, vegetables, legumes and nuts (FVLN)		FVLN without added salt, sugar, fat		Sugar sweetened beverages		Junk Food	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Kcal/shopper/day								
Mean	179.9	187.1*	132.6	134.3*	171.6	209.0*	542.9	603.0*
Slope	4.8	-0.5	3.2	-0.6	1.4	-3.1	17.8	-7.7
Share (%) of total kcal purchased								
Mean	10.3	9.7*	8.1	7.5*	9.1	9.6*	25.1	25.1
Slope	-0.09	0.03	-0.09	0.03	-0.14	-0.09	0.12	-0.23

Estimates from fixed effects regression models including only WIC shoppers (n 1,252,236) shopper month observations, comparing October 2019-March 2020 (pre) to April 2020-December 2020 (post). Models were adjusted for SNAP use, number of shopping trips per month, number of stores visited per month, and percent of transactions that involved coupons. SE's are adjusted for clustering at the shopper level. Slope is change in mean kcal/shopper/day or share (%) of total kcal purchased each month. *Pre/post differences are statistically significant at an alpha of 0.05.

Calories Per Shopper Per Day among WIC Shoppers*



Share (%) of Total Calories Purchased among WIC Shoppers*



■ All fruits, vegetables, legumes, and nuts (FVLN)
 ■ FVLN with no salt/fat/sugar
 ■ Junk foods (i.e., desserts, candy, salty snacks)
 ■ Sugar sweetened beverages (SSB)

*Estimates are monthly means from fixed effects regression models using shopper-month observations (n 1,252,236) from WIC shoppers

Results

Since March 2020,

- Absolute calories purchased by WIC shoppers increased for all food groups examined
- Share of calories from FVLN and FVLN without added salt/sugar/fat decreased
- Share of calories from SSBs increased and junk foods remained relatively stable

Implications

- During COVID-19, foods procured from restaurants, daycare, and school have likely decreased as food from grocery stores has increased
- Data presented are limited to grocery store purchases from one retailer
- Future emergency food assistance program changes, like the cash value benefit increase in WIC, should support nutrient-dense options

Acknowledgements

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