

Associations among Screen Use During Meals, Tablet Ownership, and Dietary Intake Among NYC Children

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Background

- Early childhood is a critical period for developing healthy eating habits¹ and adequate nutrition is essential to support optimal growth.²
- Most children in the U.S. are not meeting recommended dietary or screentime recommendations.³
- By two years old, 40% of children have their own tablet and more than half of children have their own tablet by four years old.⁴
- Excessive screen time is associated with an increased habit of eating in front of screens and a less healthy diet quality among young children.⁵
- Children from low-income families⁶ and immigrant communities⁷ are at greater risk for poor dietary intake.

Study Objective

To examine the associations between dietary intake, screen use, and tablet ownership among children living in a diverse, predominantly low-income and immigrant community in New York City.

Methods

- We performed a secondary analysis from the Child, Caregiver, and Community study of the Together Growing Strong Initiative
 - An observational study conducted with over 300 parent-child dyads in Sunset Park, Brooklyn.
- Sunset Park consists of Asian (25%), White (31%) and Hispanic (36%) families, with more than one-third (38%) of the population born outside of the U.S. and almost a quarter (23%) living below the poverty line.⁸

Children's Dietary Intake Outcome Variables

Parents reported children's weekly consumption of eight foods and beverages, using items from the National Health and Nutrition Examination Survey (NHANES) Dietary Screener Questionnaire.⁹

Healthy Foods

-Fruits
-Vegetables

Less Healthy Foods

-Fried Potatoes
-Snacks
-Sweets
-Sweetened Drinks
-Juice

Screen Use Predictor Variables

Whether children use a screen during a meal

Frequency of using a screen during a meal

Whether their child owns a tablet

Data Analysis

- Statistical analyses were performed using STATA version 18 software
- Descriptive statistics were calculated to summarize data across sociodemographic characteristics.
- Unadjusted and adjusted linear regressions were conducted to assess the relationship between a child's weekly food consumption and a child's screen use and tablet ownership.
- P-values *p < 0.05, **p < 0.01, ***p < 0.001; indicated statistical significance
- Adjusted analyses were controlled for race/ethnicity, immigrant status, marital status, parental educational attainment, child's gender and age (months).

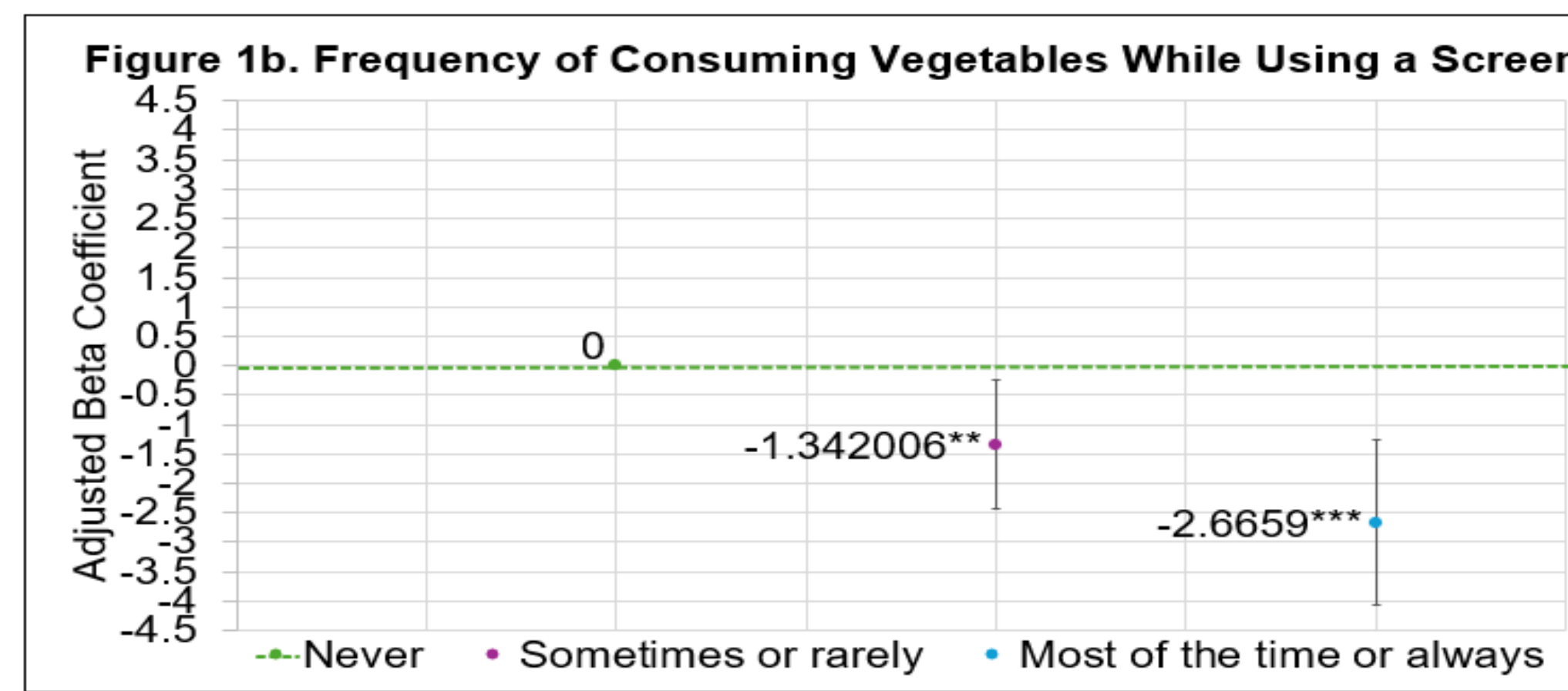
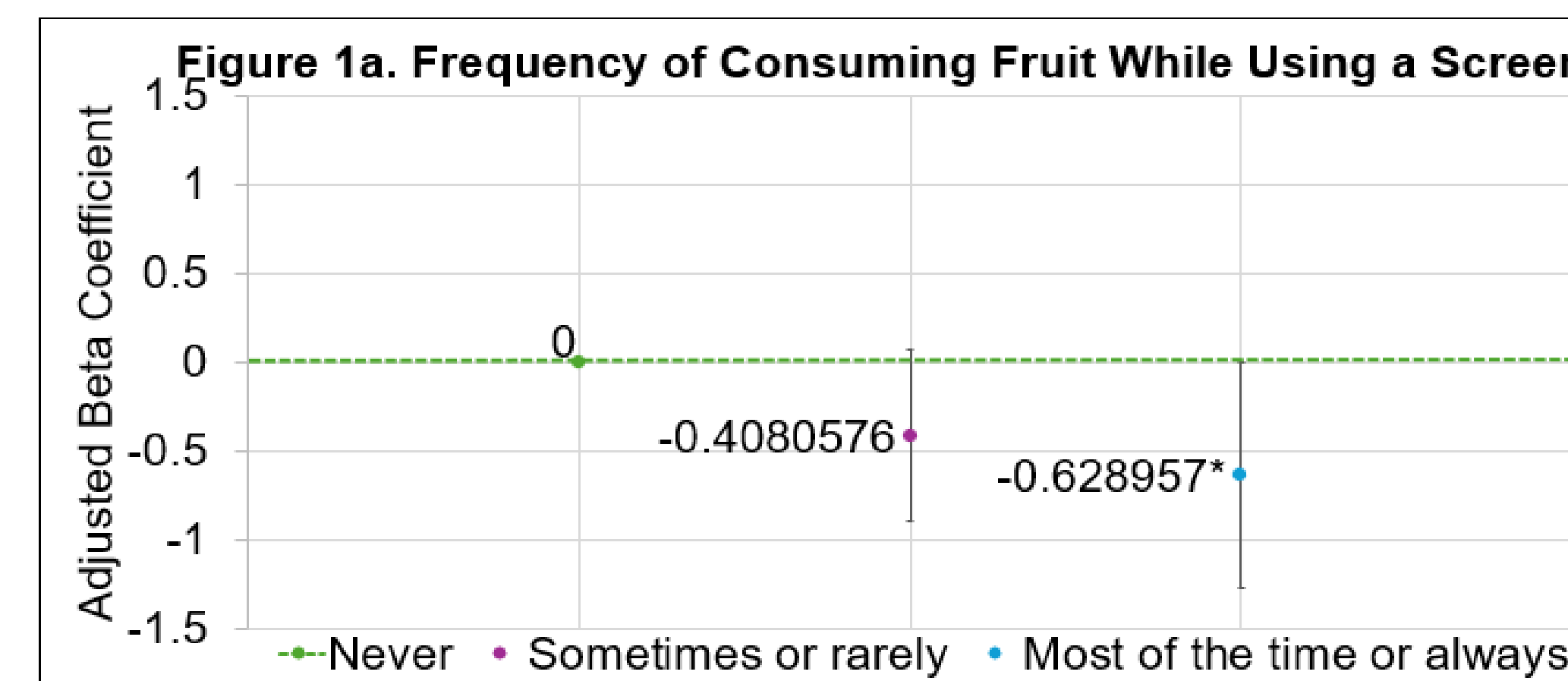
Results

- Most participants were Asian (68%), spoke Chinese (66%), born outside the U.S. (96%), had a high school diploma (73%), and married (68%).
- Screen use during meals and children's tablet ownership are associated with less healthful dietary intake, a lower weekly consumption of healthy foods and an increased weekly consumption of less healthy foods.
- Increasing levels of screen time correspond to higher weekly consumption of less healthy foods and lower weekly consumption of healthy foods.
- Children who owned a tablet had increased odds of using a screen during a meal; further compounding concerns regarding nutritional quality.

Table One. Linear Regression Associations between children's weekly food consumption and children's screen use and tablet ownership

Diet Outcome Variables	Adjusted Beta Coefficient (95% CI)	
	Children's screen use during meals	Children's tablet ownership
	Healthy Foods	
Fruit	-0.5 (-0.9, -0.04)*	-0.08 (-0.6, 0.4)
Vegetables	-1.8 (-2.8, -0.8)***	-1.6 (-2.6, -0.5)**
Less Healthy Foods		
Fried Potatoes	0.2 (-0.05, 0.5)	0.2 (-0.1, 0.5)
Sweets	0.7 (0.2, 1.2)*	0.5 (0.1, 1.0)
Snacks	0.3 (-0.1, 0.7)	0.2 (-0.4, 0.7)*
Sugar Sweetened Beverages	0.5 (0.1, 1.0)*	-0.05 (-0.5, 0.4)
Juice	-0.3 (-0.8, 0.2)	0.2 (-0.3, 0.8)

Healthy Foods



Less Healthy Foods

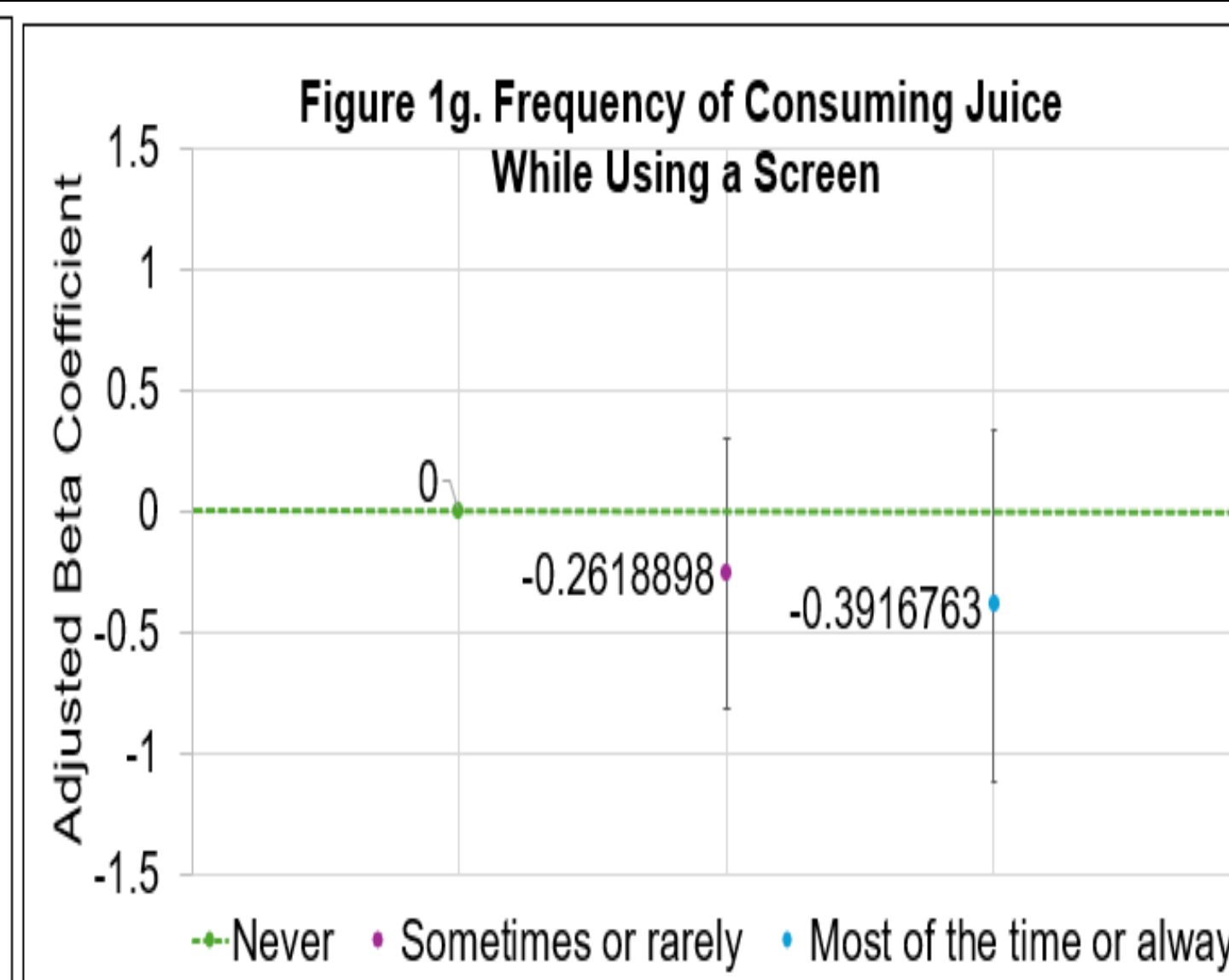
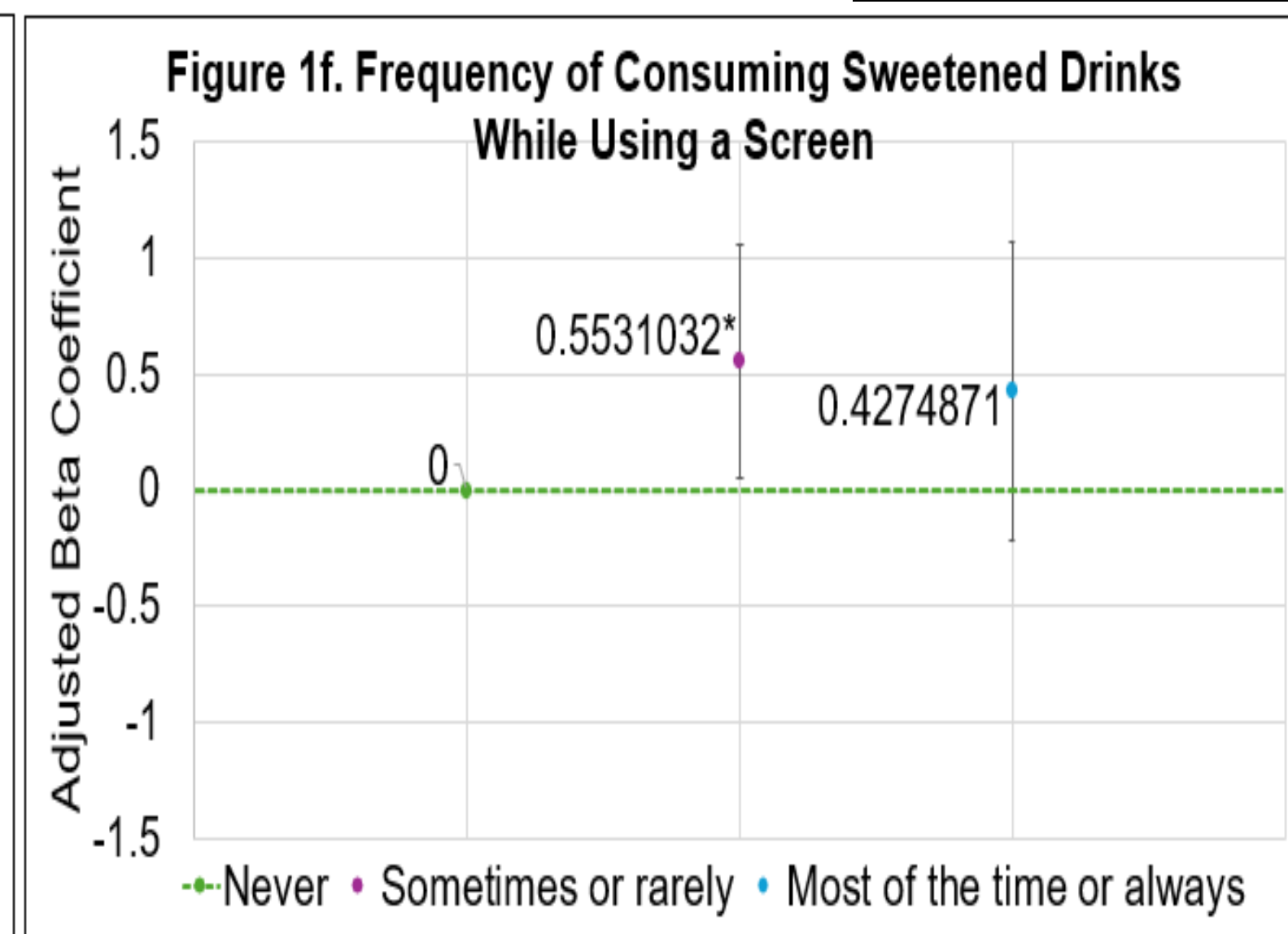
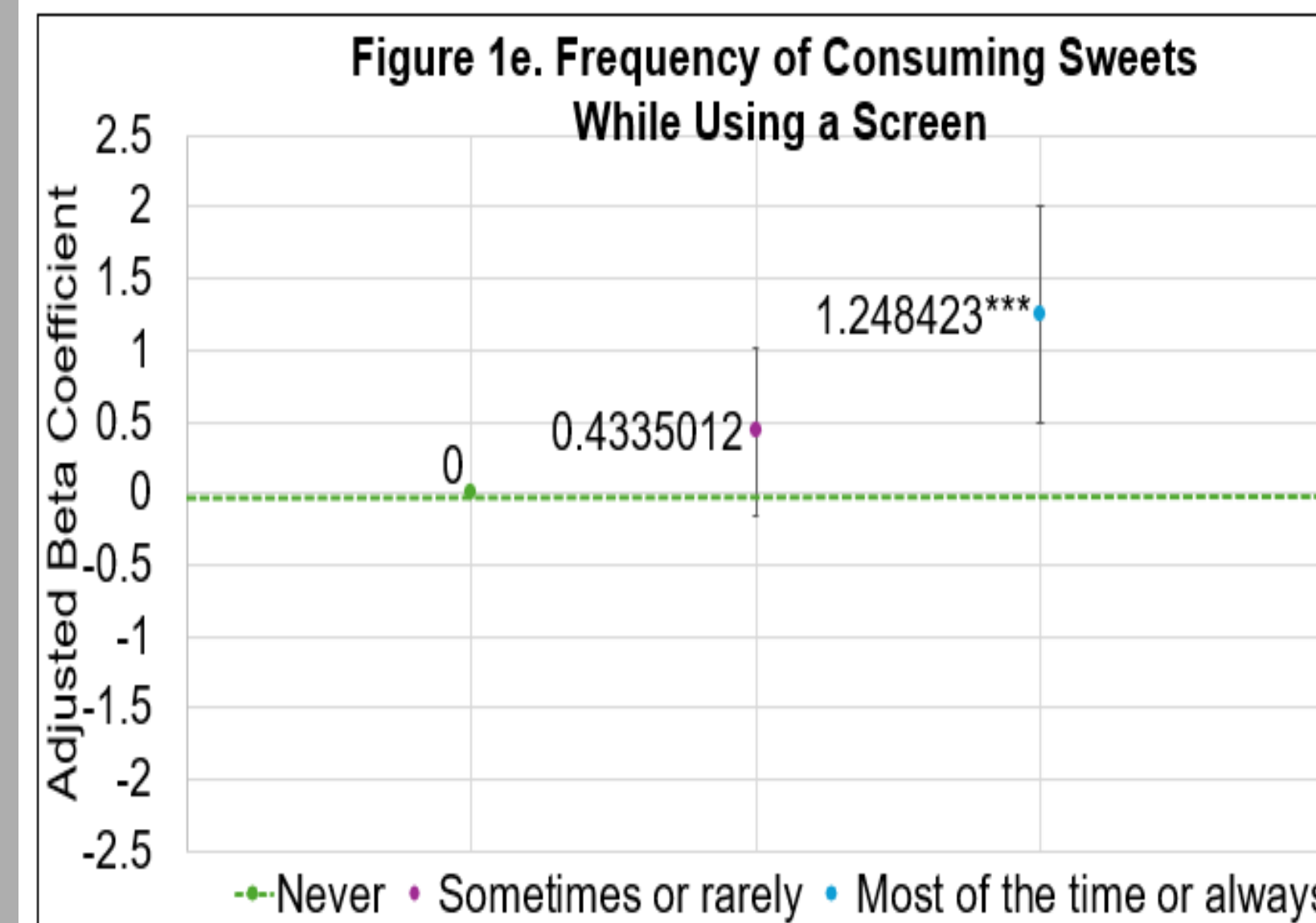
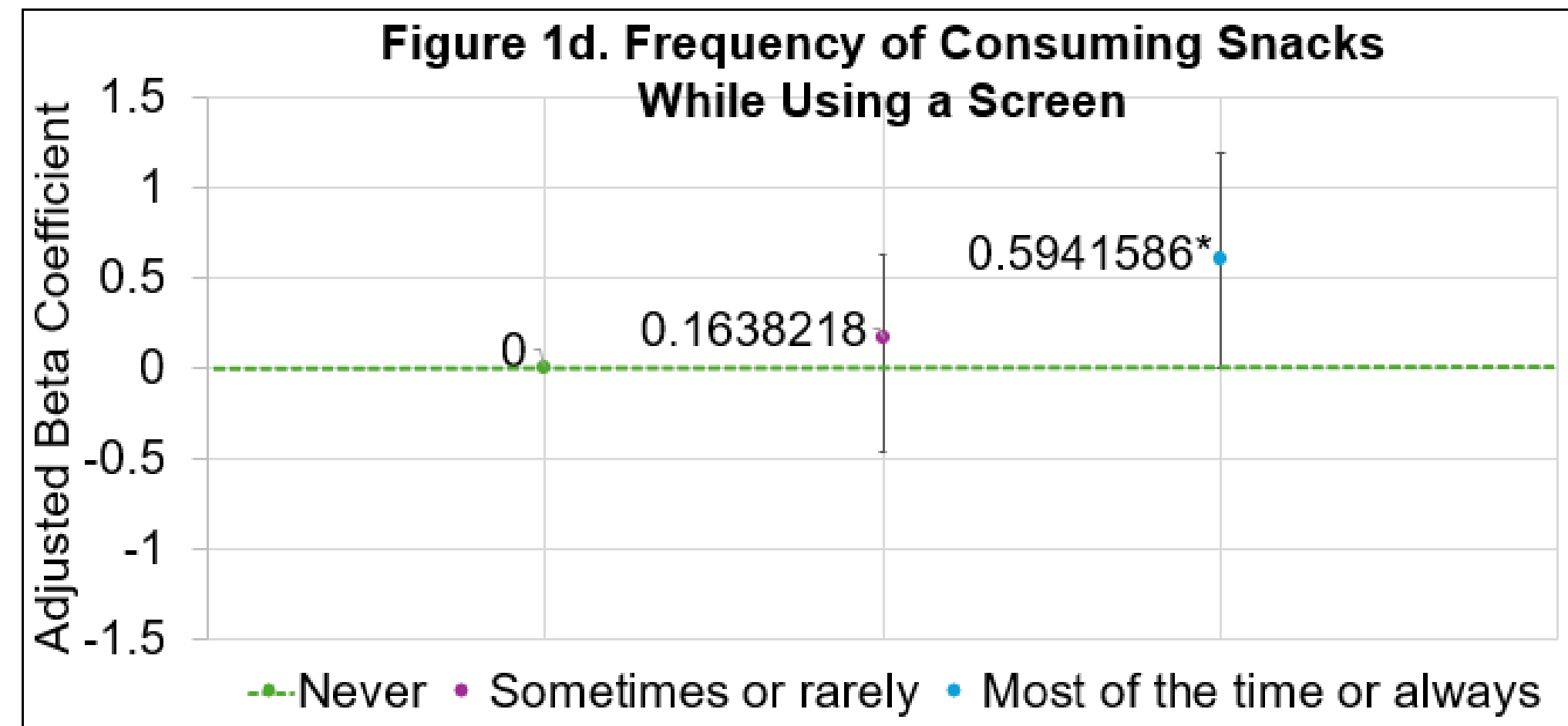
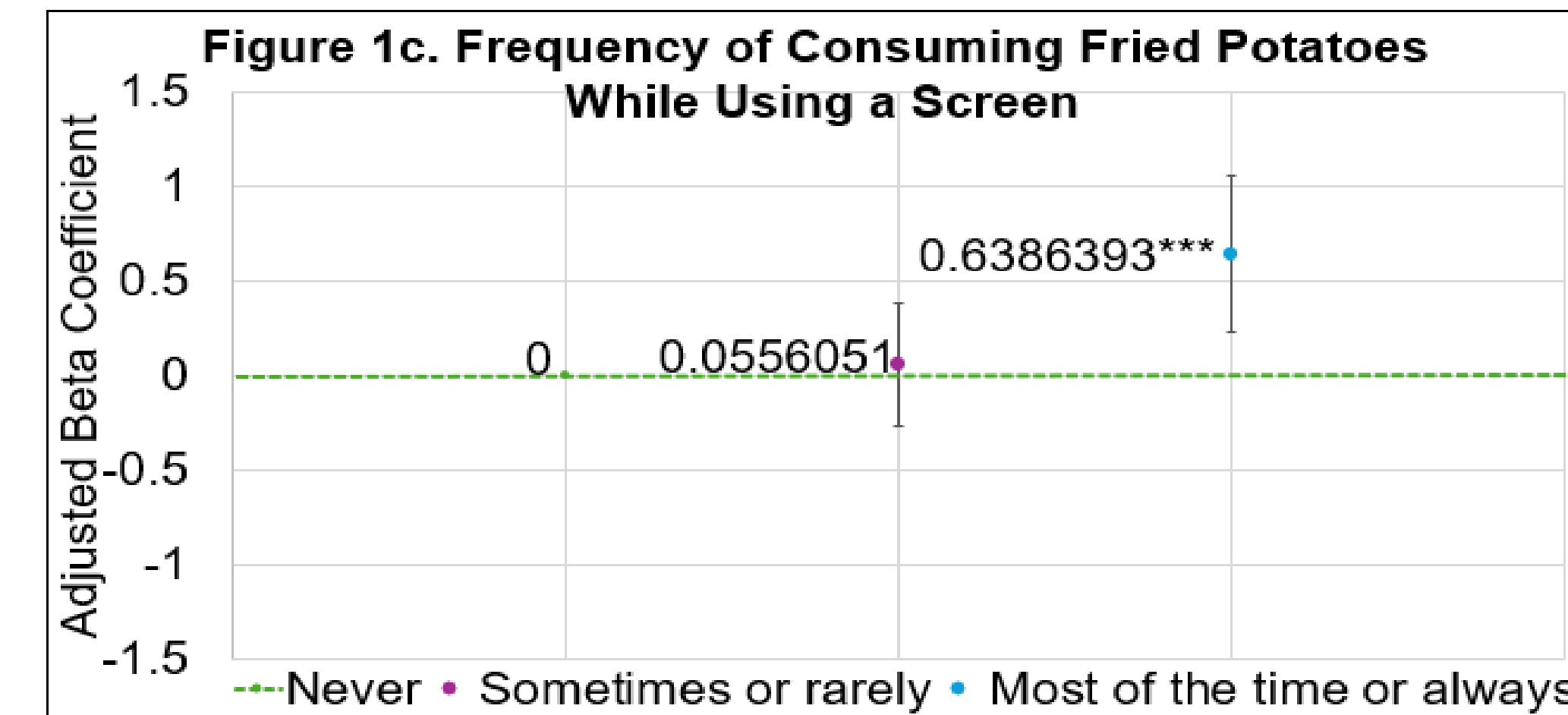
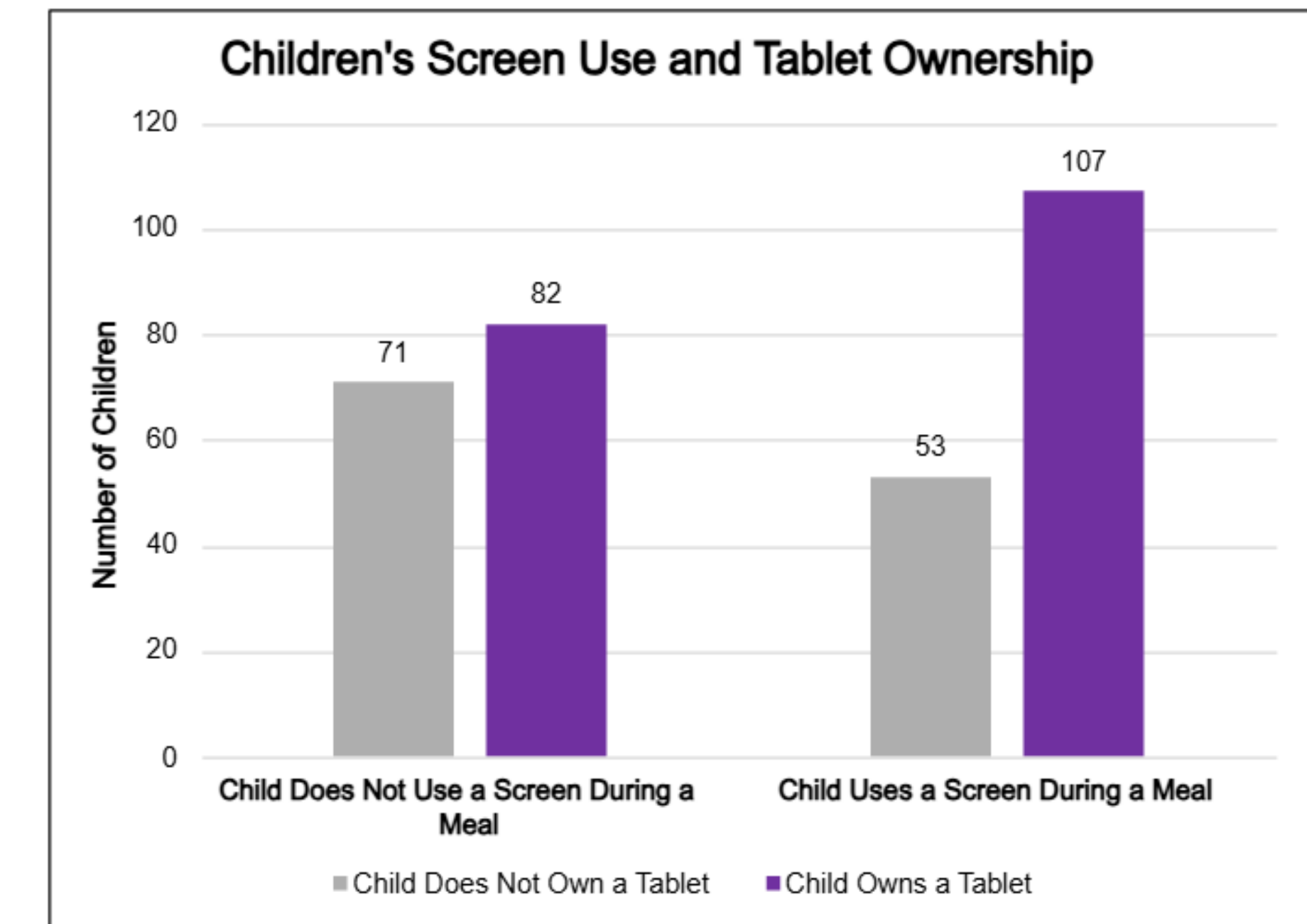


Figure 1a-g. Adjusted linear regression analyses of the frequency of weekly food consumption and frequency of children using a screen during a meal. Children who never use a screen during a meal served as the reference group for this analysis (indicated by the dotted line), as compared to children who sometimes or rarely use a screen during a meal and children who use a screen during a meal most of the time or always.

Figure Two. Children's screen use and tablet ownership.



Key Takeaways

- Given the prevalence of excessive screen use among children, the associations between children's dietary intake and screens are alarming for the overall health and well-being of children in the U.S.
- Our findings may suggest a more comprehensive understanding of the associations that exist between feeding a child while using a screen and children's dietary intake, by using a more inclusive screen use definition (i.e., television, video, tablet, smartphone, etc.), in comparison to existing studies that primarily assess associations with television screen use.¹⁰
- Clinical nutrition and screen time guidelines should include information regarding the use and limitations of tablets and other devices that children utilize.
- Our study also fills a gap in the existing literature, by assessing the intersection between children's screen use and dietary intake, among a predominantly immigrant population.
- Targeting parental stress and self-efficacy are important steps to support low-income families and parental screen monitoring could limit children's screen exposure.¹¹
- Policy and practice solutions can be applied in the home environment and through policy changes in public settings (e.g., child care centers).

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References

- 1) Beckerman JP, Alike Q, Lovin E, Tamez M, Mattei J. The Development and Public Health Implications of Food Preferences in Children. *Front Nutr*. 2017;4:66. Published 2017 Dec 18. doi:10.3389/fnut.2017.00066
- 2) U.S. Department of Agriculture. Dietary Guidelines for Americans, 2020-2025. Published online December 2020. Accessed July 17, 2025. https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary_Guidelines_for_Americans-2020-2025.pdf
- 3) Hamner HC, Dooyema CA, Blanck HM, et al. Fruit, Vegetable, and Sugar-Sweetened Beverage Intake Among Young Children, by State — United States, 2021. *MMWR Morb Mortal Wkly Rep* 2023;72:165–170. DOI: <http://dx.doi.org/10.15585/mmwr.mm7207a1>.
- 4) Common Sense Media. The Common Sense Census: Media Use by Kids Zero to Eight. 2025. <https://www.common Sense Media.org/sites/default/files/research/report/2025-common-sense-census-web-2.pdf>
- 5) Gomes GMD, Souza RCV, Santos TN, Santos LC. Screen Exposure in 4-Year-Old Children: Association with Development, Daily Habits, and Ultra-Processed Food Consumption. *International Journal of Environmental Research and Public Health*. 2024;21(11). doi:10.3390/ijerph21111504
- 6) Eicher-Miller HA, Graves L, McGowan B, et al. A Scoping Review of Household Factors Contributing to Dietary Quality and Food Security in Low-Income Households with School-Age Children in the United States. *Advances in Nutrition*. 2023;14(4):914-945. doi:10.1016/j.adnut.2023.05.006
- 7) Othman SI, Fertig A, Trofholz A, Berge JM. How time in the US and race/ethnicity shape food parenting practices and child diet quality. *Appetite*. 2022;171:105870. doi:10.1016/j.appet.2021.105870
- 8) Sunset Park Neighborhood Profile [Internet]. NYU Furman Center. Accessed June 18, 2025. <https://furmancenter.org/neighborhoods/view/sunset-park#demographics>
- 9) National Institutes of Health. National Cancer Institute. Dietary Screener Questionnaire in the NHANES 2009-10: Background. Published online December 14, 2021. <https://epi.grants.cancer.gov/nhanes/dietscreen/>
- 10) O'Connor TM, Elias C, Thompson RR, et al. The association of TV viewing during dinner meals with quality of dietary intake and BMI z-scores among low income, ethnic minority preschool children. *Appetite*. 2019;140:231-238. doi:10.1016/j.appet.2019.05.023
- 11) Goncalves, W.S.F., Byrne, R., Viana, M.T. et al. Parental influences on screen time and weight status among preschool children from Brazil: a cross-sectional study. *Int J Behav Nutr Phys Act* 16, 27 (2019). <https://doi.org/10.1186/s12966-019-0788-3>