

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).

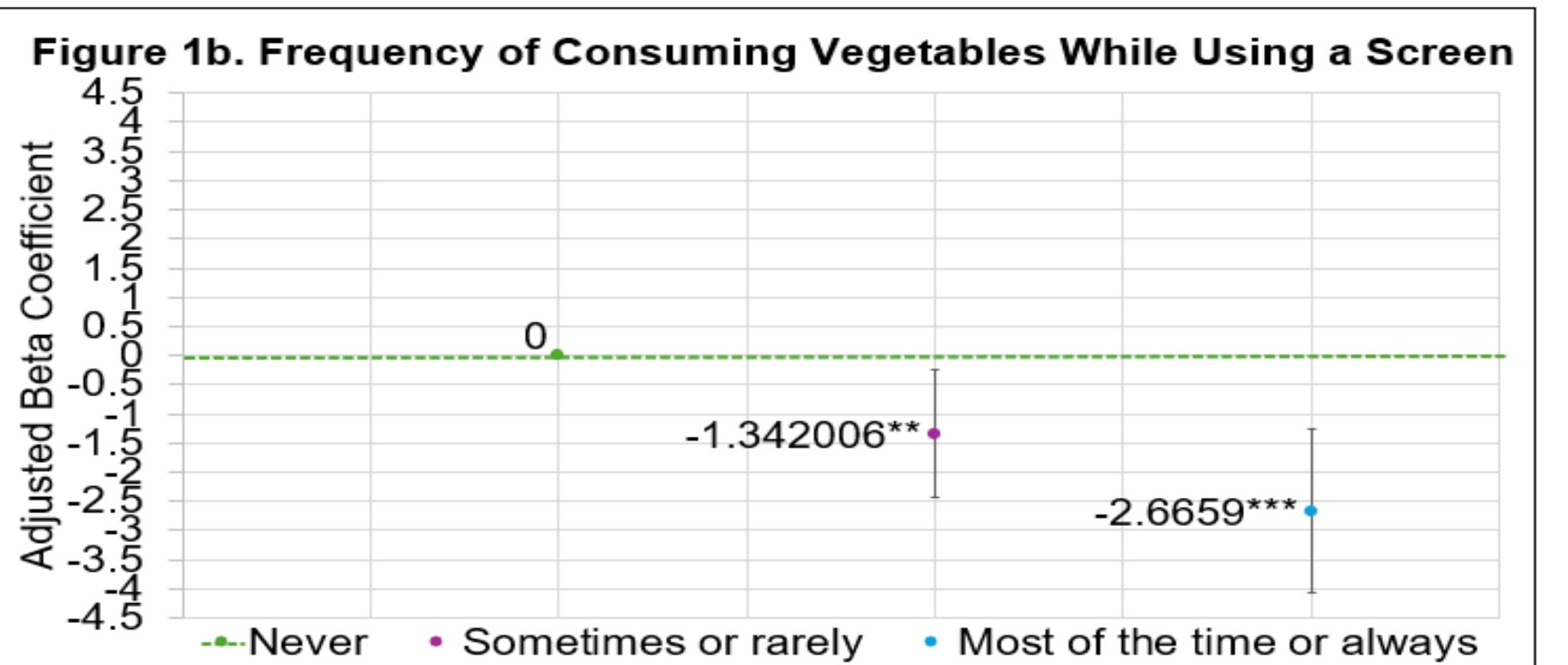
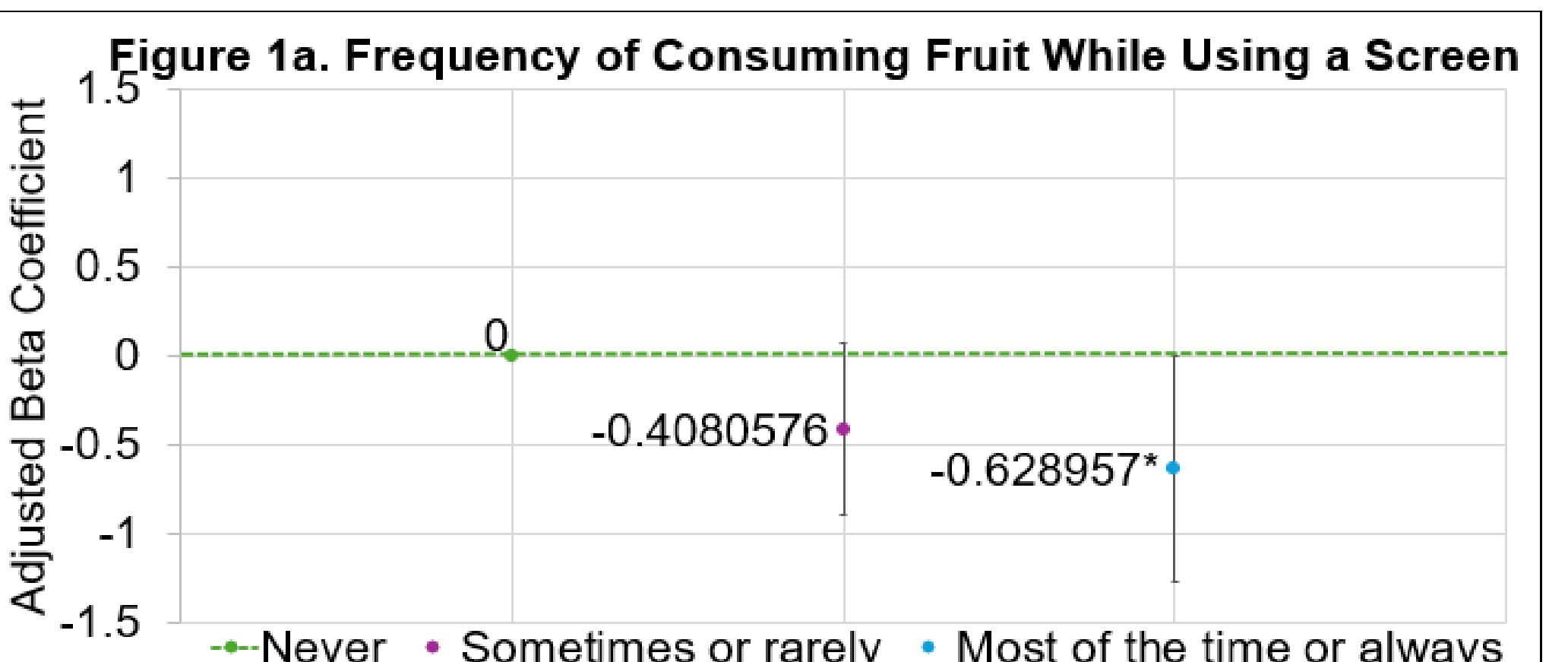
Results

- 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
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)**
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

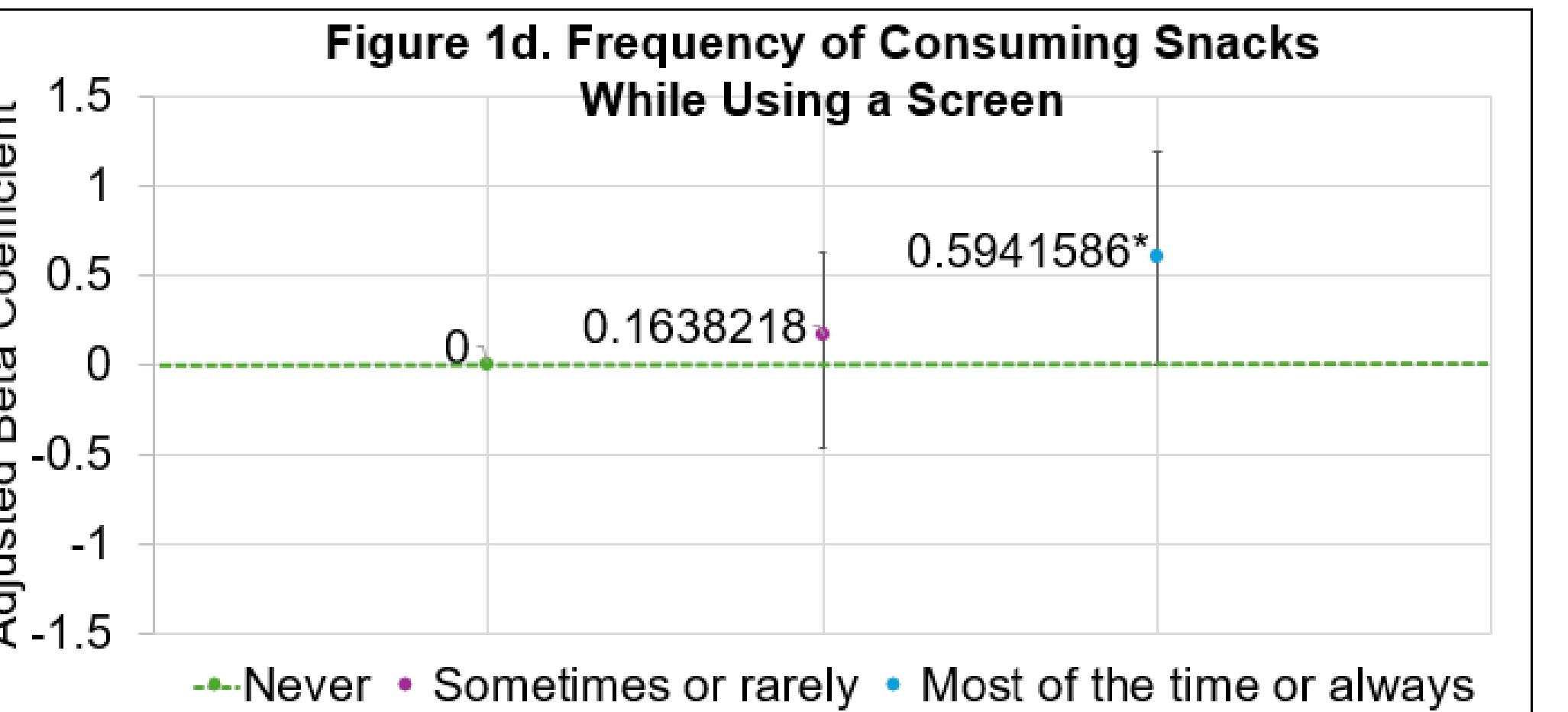
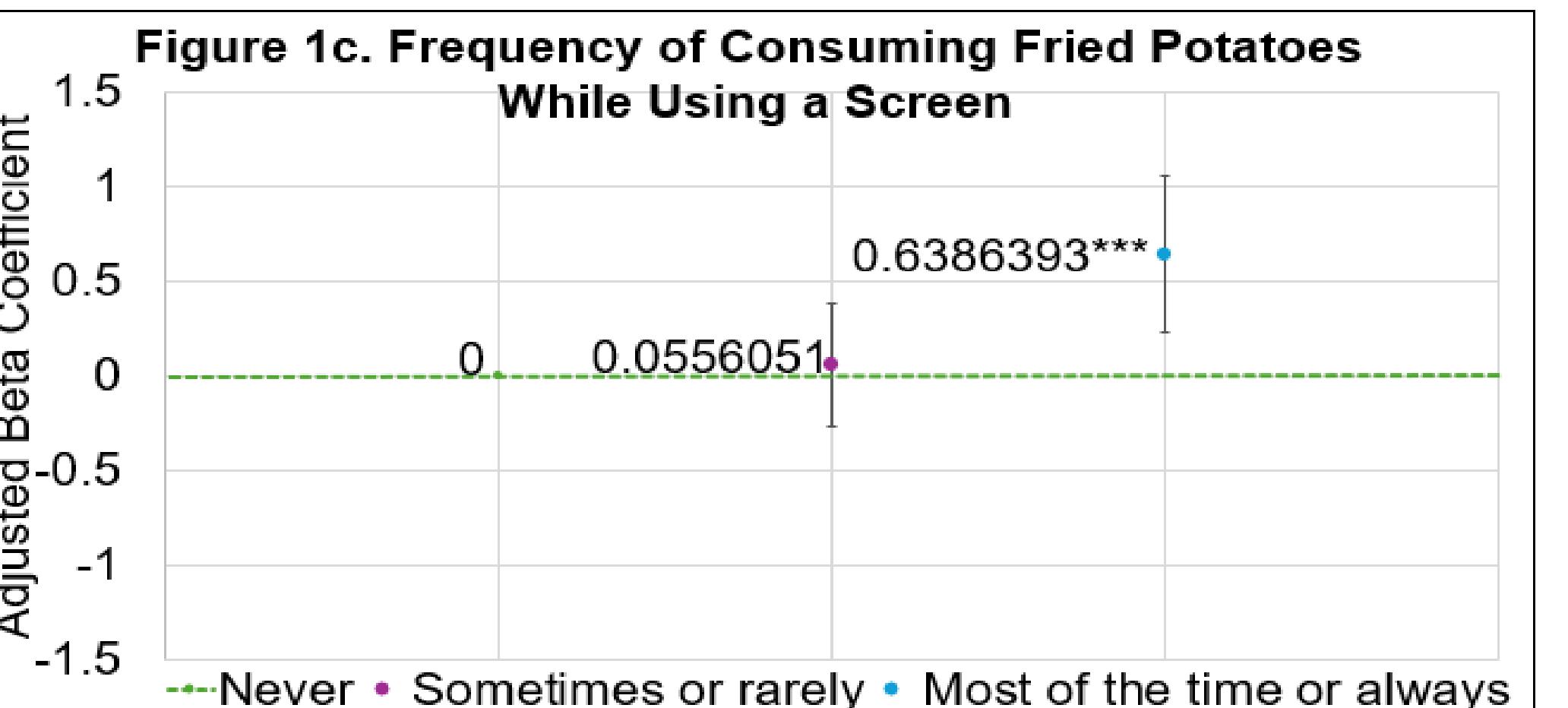


Figure 1e-f

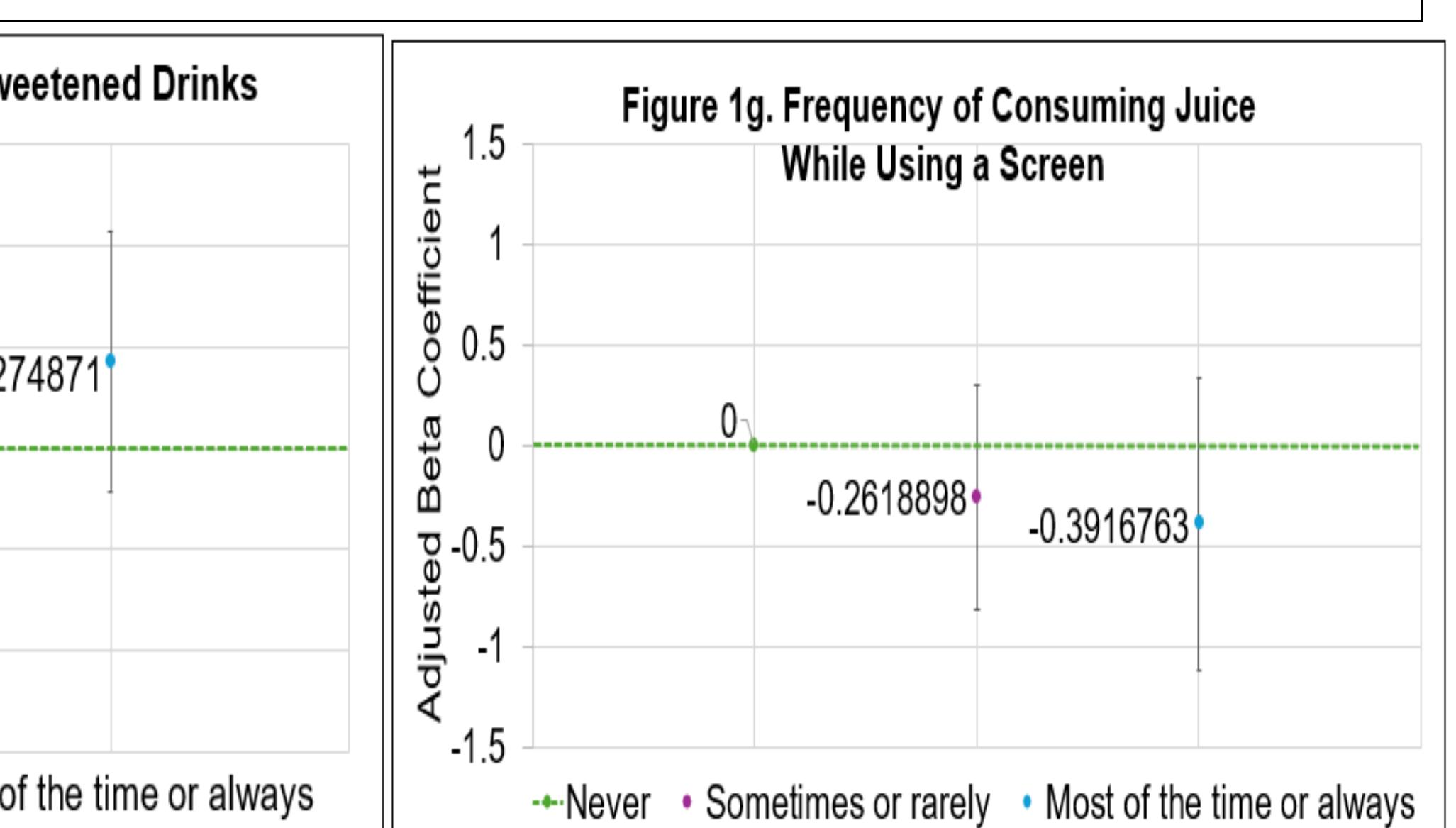
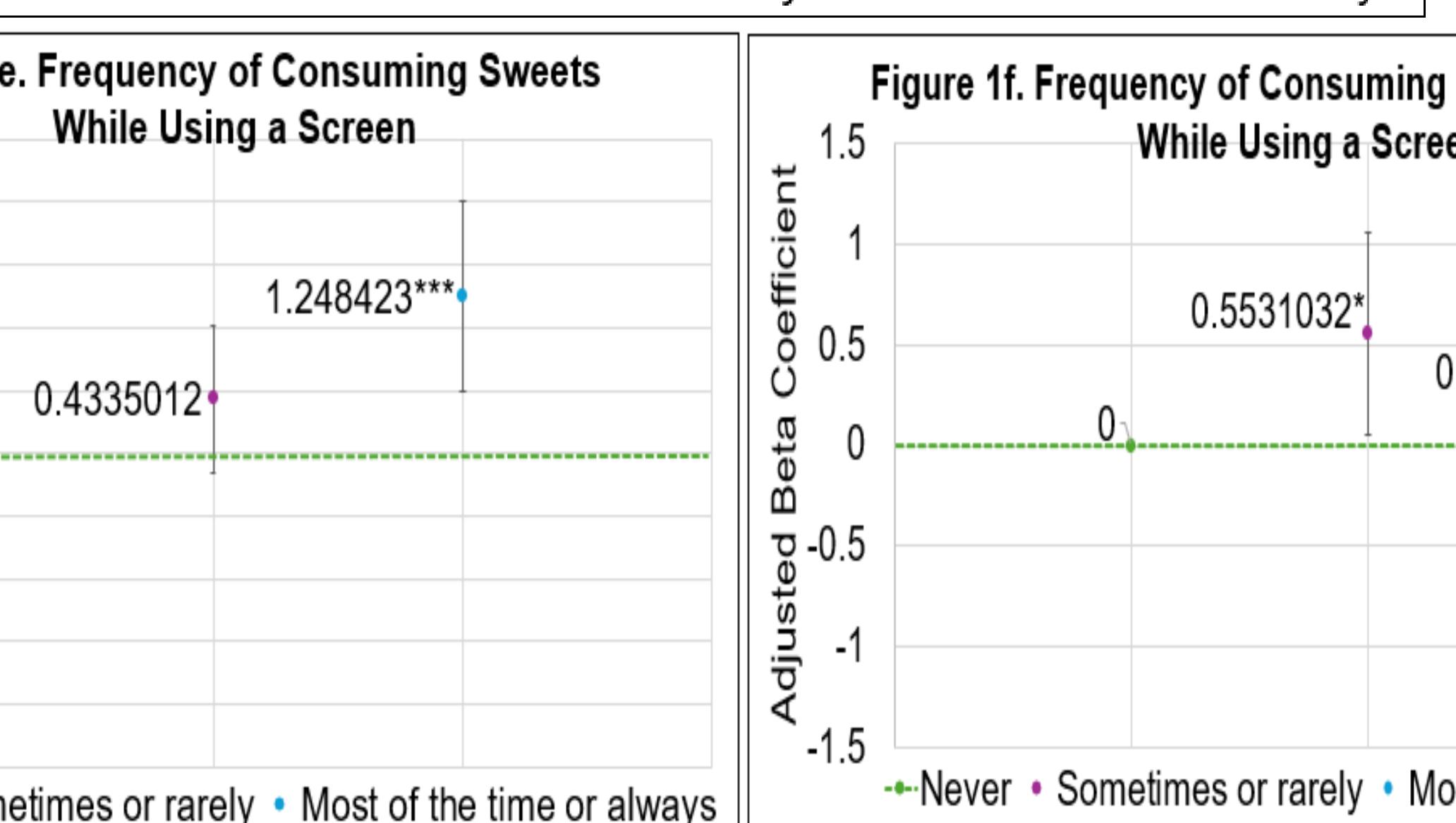


Figure 1g

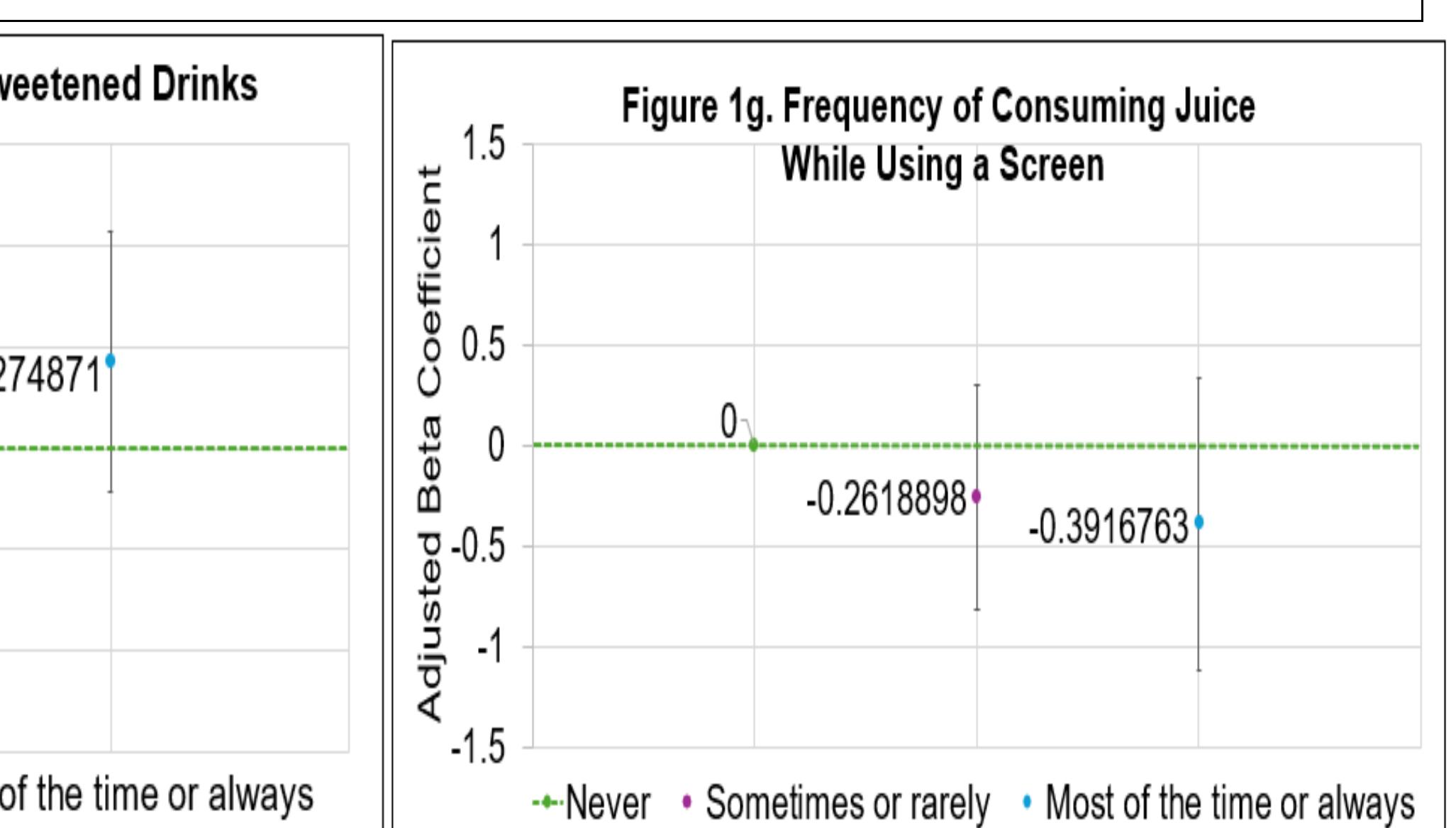
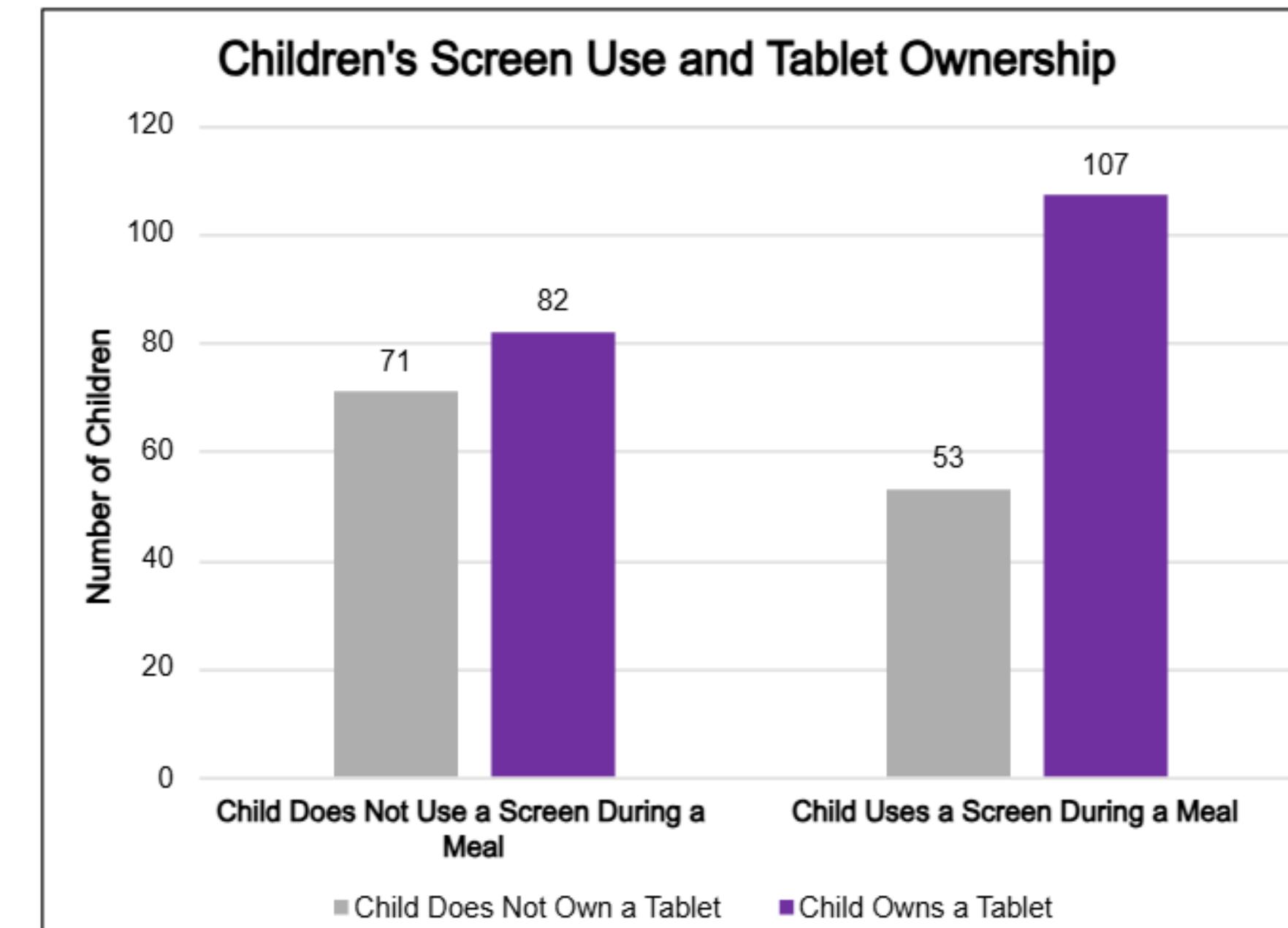


Figure 1a-g. Adjusted linear regression analyses of the frequency of weekly food consumption and frequency of children using a screen during a meal. Children who never use a screen during a meal served as the reference group for this analysis (indicated by the dotted line), as compared to children who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