

Supplemental Information

SENSITIVITY ANALYSES

Projected Analyses to Address COVID-19 Pandemic Interruptions

Data collection in the last cohort of 8 schools was interrupted by pandemic-related school closures in March 2020, although baseline assessments, water station installation, schoolwide promotion and most classroom lessons were completed. Study participants in these schools ($n = 567$) did not return to school for over 1 year with resultant sample size reductions documented on clinicaltrials.gov.³⁰

To assess the impact of statistical power reductions, we conducted sensitivity analyses to predict changes in P values and confidence intervals (CI) had all schools completed the study.⁵¹ Test statistics and CI widths were scaled approximately according to the square root of the sample size. To

project P values, test statistics were increased by 1.202 (square root of 26 planned divided by 18 actual schools). Degrees of freedom for t -statistics (where appropriate) were increased by 1.444 (26 of 18 schools). CI widths were reduced by 1.202 and derived by adding or subtracting from the midpoint of the original CI the half-length of the projected CI. As odds ratios are on the log scale, CI limits were log-transformed then exponentiated to obtain the new values. Projected CI estimates for food and beverage calories, and the frequency of beverage intake, which were also computed on the log scale, were similarly derived. Given the complexity of these models, it was challenging to conduct these analyses with multiple imputation. Instead, we are relying on the assumption that mixed effects regression will protect against bias because of missing data when fit using maximum likelihood methods.⁶⁰

SUPPLEMENTAL TABLE 4 Projected Changes in Full Sample of 26 Study Schools: Intervention Effects on Primary and Secondary Weight Status Outcomes

Variable	Intervention Versus Control Adjusted Mean Difference/OR (95% CI) ^a	P
Primary outcomes: overweight and obesity prevalence		
Overweight prevalence		
Baseline	Reference	Reference
7-mo	OR 0.7 (0.2–2.3)	.61
15-mo	OR 0.1 (0.03–0.5)	.004
Obesity prevalence		
Baseline	Reference	Reference
7-mo	OR 0.4 (0.09–1.5)	.16
15-mo	OR 1.0 (0.2–5.0)	.97
Secondary outcomes		
BMI%		
Baseline to 7-mo	0.2 (–0.4 to 0.9)	.49
Baseline to 15-mo	–0.5 (–1.3 to 0.4)	.31
BMI		
Baseline to 7-mo	0.04 (–0.05 to 0.1)	.37
Baseline to 15-mo	–0.02 (–0.1 to 0.1)	.76
BMI z-score		
Baseline to 7-mo	0.001 (–0.02 to 0.02)	.90
Baseline to 15-mo	–0.02 (–0.05 to 0.01)	.26

^a Mixed effects logistic (% overweight, % obese) or linear (BMI percentile, raw, z-score) regression models used to examine intervention impacts on changes in BMI status of students from baseline to follow-up 1 (7 mo), and baseline to follow-up 2 (15 mo), accounting for school, class, and student intercepts. Models also included random effects for student change over time (ie, random slopes), and adjusted for intervention status, time point, cohort year, student age, sex, and race and ethnicity, physical activity, and screen time.

SUPPLEMENTAL TABLE 5 Projected Changes in Full Sample of 26 Study Schools: Intervention Effects on Key Secondary Dietary Outcomes		
Variable	Intervention Versus Control Adjusted Change Over Time, % (95% CI) ^a	P
Beverage intake frequency		
Water, times/d		
Baseline to 7-mo	23.2 (14.8–32.3)	<.001
Baseline to 15-mo	14.7 (6.1–23.9)	<.001
SSB, times/d		
Baseline to 7-mo	–8.0 (–14.5 to –1.0)	.025
Baseline to 15-mo	–2.8 (–10.3 to 5.2)	.48
Dietary recall		
Total kcals		
Baseline to 7-mo	1.4 (–4.2 to 7.2)	.64
Food kcals		
Baseline to 7-mo	3.7 (–2.7 to 10.6)	.26
Beverage kcals		
Baseline to 7-mo	–10.6 (–26.3 to 8.5)	.26
SSB kcals		
Baseline to 7-mo	–17.5 (–34.8 to 4.5)	.11
Water grams		
Baseline to 7-mo	9.1 (–16.3 to 42.1)	.52
N/A, not applicable.		
^a Mixed effects linear regression models used to examine intervention impacts on changes in outcomes from baseline to follow-up 1 (7-mo only for dietary recall) and baseline to follow-up 2 (15 mo), accounting for school, class, and student effects intercepts. Models also included random effects for student change over time (ie, random slopes), and adjusted for intervention status, time point, cohort year, student age, sex, and race and ethnicity.		

Weight Status Turnover Analyses

We also conducted descriptive analyses to examine the proportion of students moving across different

weight status categories (eg, normal weight, over-weight) from baseline to 7-months follow-up and baseline to 15-months follow-up.

SUPPLEMENTAL TABLE 6 Change in Weight Status Category from Baseline to 7-mo Among Students in the Water First Study										
Study Status	Intervention, n (%)					Control, n (%)				
	Under-wt 7-mo	Normal 7-mo	Over-wt 7-mo	Obesity 7-mo	Severe Obesity 7-mo	Under-wt 7-mo	Normal 7-mo	Over-wt 7-mo	Obesity 7-mo	Severe Obesity 7-mo
Underweight baseline	8 (88.9)	1 (11.1)	0	0	0	10 (71.4)	4 (29)	0	0	0
Normal baseline	0	292 (94.5)	17 (5.5)	0	0	1 (0.4)	259 (94.2)	15 (5.5)	0	0
Overweight baseline	0	23 (20.7)	76 (68.5)	12 (10.8)	0	0	18 (16.8)	77 (72)	12 (11.1)	0
Obesity baseline	0	0	20 (14.5)	111 (80.4)	7 (5.1)	0	0	12 (12.2)	81 (82.7)	5 (5.1)
Severe obesity baseline	0	0	0	12 (16.9)	59 (83.1)	0	0	0	7 (11.7)	53 (88.3)

SUPPLEMENTAL TABLE 7 Change in Weight Status Category from Baseline to 15-mo among Students in the Water First Study										
Study Status	Intervention, n (%)					Control, n (%)				
Weight Status and Timepoint	Under-wt 15-mo	Normal Wt 15-mo	Over-wt 15-mo	Obesity 15-mo	Severe Obesity 15-mo	Under-wt 15-mo	Normal 15-mo	Over-wt 15-mo	Obesity 15-mo	Severe obesity 15-mo
Underweight baseline	7 (77.8)	2 (22.2)	0	0	0	8 (61.5)	5 (38.5)	0	0	0
Normal baseline	2 (0.8)	240 (90.6)	22 (8.3)	1 (0.4)	0	6 (2.4)	213 (85.2)	30 (12.0)	1 (0.4)	0
Overweight baseline	0	23 (24.2)	58 (61.1)	14 (14.7)	0	0	12 (12.1)	70 (70.7)	17 (17.2)	0
Obesity baseline	0	0	14 (12.2)	94 (81.7)	7 (6.1)	0	1 (1.1)	17 (18.7)	66 (72.5)	7 (7.7)
Severe obesity baseline	0	0	0	10 (15.9)	53 (84.1)	0	1 (1.8)	1 (1.8)	5 (9.1)	48 (87.3)