

# Reach of PSE Sites in Relation to Dietary Behaviors and Diet Quality among Caregivers from SNAP-Ed Eligible Households



Fred Molitor, PhD



SACRAMENTO  
STATE



Celeste Doerr, PhD



CENTER FOR  
WELLNESS AND NUTRITION



# Introduction

- The CDC and USDA-FNS endorse the use of policy, systems, and environmental (PSE) change interventions as public health approaches to addressing chronic diseases, including those resulting from poor diets and obesity.
- SNAP-Ed Guidance requires states to implement PSEs in addition to traditional direct education interventions.



# Introduction

- Most evaluations of PSE interventions have been descriptive, documented lessons learned, or have used the RE-AIM framework.
- Challenge to assessing outcomes in relation to PSE interventions outside of controlled settings include accounting for non-PSE factors that may explain behavior change, and measuring levels of PSE exposure.



# Introduction

- The California Family Health Study is an annual statewide survey designed to track dietary behaviors and diet quality among persons from SNAP-Ed eligible households. The current study linked interview responses from adult caregivers participating in the 2018 CFHS to the number of PSE change interventions implemented in their neighborhoods.



# Objective

- Our study objective was to examine dietary behaviors and diet quality in relation to potential exposure to PSE change interventions.
- The goal of the study was to determine whether the empirical evidence supports the continued investment in PSE change interventions by the CDC, the USDA-FNS, and the California CalFresh Healthy Living program.



# Methods

- Households with incomes  $\leq 185\%$  of the FPL, with at least one child 5 to 17 years old, were sampled at random from within all 58 California counties.
- Households were sent pictorial food and beverage portion-size booklets and measuring cups and spoons.
- The quantity and size of each food and drink item consumed for each meal and snack over the prior 24 hours were assessed using the ASA24.



# Methods

Outcome variables, in line with California's SNAP-Ed statewide program goals and objectives, were:

1. FV
2. Water
3. SSBs
4. Added sugars
5. Diet quality (HEI-2015 scores)



# Methods

- Using PEARS data, the physical addresses of all PSEs and direct education activities were geocoded to the census tract level.
- A file was created identifying, by census tract, PSE and direct education reach: the number of PSE change interventions and the number of direct education participants.





# Methods

- These data were merged by census tract number with the survey response file based on the geo-coded addresses where the 2018 CFHS participants lived.
- The independent variable was coded as 0, 1, or  $\geq 2$  PSEs per census tract.
- Regression analyses controlled for caregivers' age and race/ethnicity, and the reach of direct education within the census tracts.



# Results

- One-fifth (21.2%) of 2,222 caregivers were male; 69.1% of the sample was Latino, 14.1% was white, and 10.8% was African American.



# Results

	0 PSE Sites	1 PSE Site	2+ PSE Sites	ANOVA Sig.	Regression Sig.
FV (cups)	2.8	2.7	3.1	No	No
Water (cups)	8.5	8.4	8.0	No	No
SSBs (cups)	2.8	1.3	1.1	Yes	Yes
Added Sugars (tsp.)	13.0	11.7	10.8	Yes	Yes
HEI-2015 score	55.8	56.5	58.4	Yes	Yes



# Discussion

- Caregivers in neighborhoods with PSEs interventions had higher HEI-2015 scores, and thus were more likely to report diets in adherence with the *2015-2020 Dietary Guidelines for Americans*.
- This finding may be due to the fact that 36% of PSE interventions focused on the USDA MyPlate recommendations, which are based on the *DGA*.



# Discussion

- Prior research has linked a lower risk of the incidence of, and death from, cardiovascular disease, and a lower risk of all-cause mortality, with increased HEI-2015 scores.
- Given that these protective effects may be benefiting caregivers from higher-reach PSE neighborhoods, and the generalizability of the results from a statewide, population-based survey, the current study offers the strongest evidence to date in support of the potential beneficial impact of PSEs.



# Limitations

- Limitations of the study include:
  - The temporal sequence is unknown.
  - Covariates other than those included in the statistical models might explain the findings.
  - Self-reported information on dietary intake.
  - Not being able to identify which PSE interventions were more effective than others, and in turn identify those that meet the criteria for “research-based” PSE interventions.



# Questions

- Fred Molitor [fred.molitor@csus.edu](mailto:fred.molitor@csus.edu)
- Celeste Doerr [celeste.doerr@wellness.phi.org](mailto:celeste.doerr@wellness.phi.org)

