

Contextual Approaches to Promoting Healthy Eating

Guadalupe X. “Suchi” Ayala, PhD, MPH

Professor, Graduate School of Public Health

Co-Director, Institute for Behavioral & Community Health

Food is everywhere and the unhealthy is most accessible



What we eat affects our health

Table 1 Differences in children's dietary intake, child BMI, and parent BMI by away-from-home context

Sample size (%)	Relative/neighbor/friend			Fast food/buffet/sit down		
	<1 Time/week 489 (62%)	≥1 Time/week 303 (38%)	Significance	<1 Time/week 416 (53%)	≥1 Time/week 376 (47%)	Significance
Mean number per day (s.d.)						
Sugar-sweetened beverages	0.76 (1.29)	1.04 (1.54)	≤0.01	0.71 (1.26)	1.06 (1.53)	≤0.01
Water	2.78 (1.73)	2.56 (1.71)	n.s.	2.86 (1.69)	2.52 (1.76)	≤0.001
Sweet and savory snacks	1.23 (1.77)	1.44 (1.87)	n.s.	1.08 (1.67)	1.58 (1.94)	≤0.001
Fruits and veggies	1.76 (1.78)	1.85 (1.78)	n.s.	1.84 (1.79)	1.76 (1.78)	n.s.
Child BMI			≤0.05			≤0.05
Under-to-normal	56.0% (238)	46.3% (119)		56.8% (212)	46.8% (148)	
At-risk-for overweight	15.1% (64)	19.5% (50)		14.5% (54)	19.3% (61)	
Overweight	28.9% (123)	34.2% (88)		28.7% (107)	33.9% (107)	
Adult BMI			n.s.			≤0.05
Under-to-normal	25.2% (108)	22.7% (58)		26.1% (97)	22.6% (72)	
Overweight	34.6% (148)	34.9% (89)		34.7% (129)	34.9% (111)	
Obese	33.9% (145)	34.5% (88)		34.7% (129)	32.7% (104)	
Excess obesity	6.3% (27)	7.8% (20)		4.6% (17)	9.7% (31)	

All analyses controlled for income.
n.s., not significant.

Where we started

9 episode sit-com



Family manual



Promotor(a) training manual



- Randomized controlled trial
- 370 families, including fathers in 25% of the families
- 4-month intervention
- Evaluation at baseline, 4 mos, and 12 mos

- Significant improvements in hypothesized dietary outcomes
- Strong intervention fidelity



ACS RSGPB 113653 (07/07 – 06/12)

Partnered with *Clínicas de Salud del Pueblo, Inc.*

Ayala et al., *Journal of Health Communication*, 2014

Horton et al., *Salud Publica de México*, 2013

Los Garcias at home, and in a grocery store, restaurant and the community



Lesson 1: Importance of modifying the context to support the healthy behavior.

Lesson 2: Importance of modifying behaviors within context.

Working with Latino grocery stores (*tiendas*)

Study Objective: To promote the sale/purchase and consumption of fruits and vegetables through a store (*tienda*)-based intervention.

- Study 1: NCI R21 CA120929-01 (09/06-08/09)

Vida Sana occurred in North Carolina

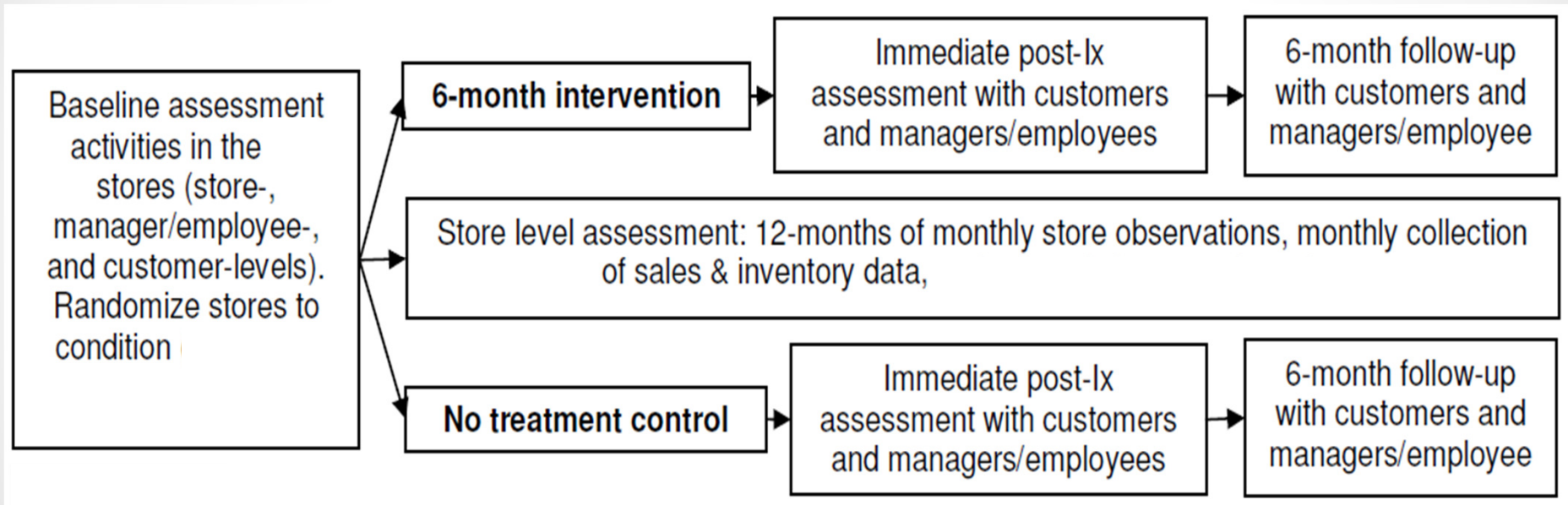


- Study 2: NCI R01 CA140326-01 (01/10 – Present)

El Valor is occurring in California



Study Design



Time period for Study 1 was shorter (4 month intervention and 10 month follow-up).

Store-directed



Infrastructure to support ready-to-eat FVs



Modifications to butcher



Modifications to prepared foods

Employee-directed

4-part training: DVD
and handbook



4 Worksite posters



9 Booster newsletters



Customer-directed

1. Point of purchase

- 8 aisle violators
- 60 shelf danglers
- 1 produce fact sheet
- 9 recipe cards
- 9 recipe posters
- 2 generic posters
- 1 Banner

2. Food demonstrations



¡Póngale **SABOR** a su Plato Total!

El **Plato Total** es una manera muy fácil de mejorar su alimentación. La imagen está basada en un plato de 9" pulgadas, y para comer saludable, se recomienda:

Descubra el ...

Plato Total

La mitad del plato con frutas y verduras.

Una cuarta parte del plato con proteínas como pollo, carne, pescado, etc. $\frac{1}{4}$

Una cuarta parte del plato con granos como pasta, tortillas, arroz, etc. $\frac{1}{4}$

Para ayudarlo a preparar su Plato Total, hemos diseñado un plan sencillo llamado **SABOR**. Cada letra significa una manera distinta de cómo preparar sus platillos más saludables.

S Sustituya productos menos saludables por productos más saludables.

A ñada frutas y verduras a sus comidas y meriendas.

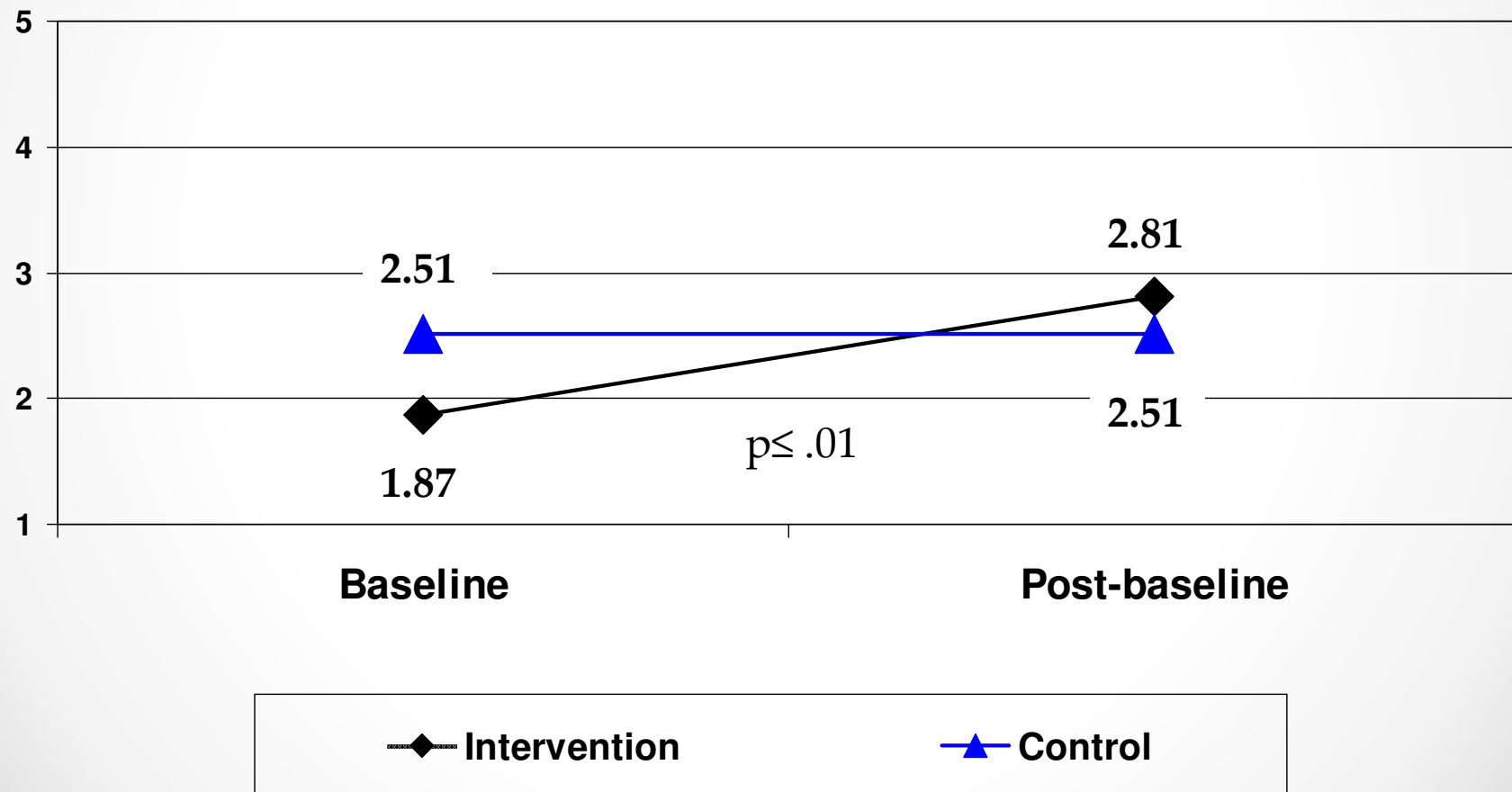
B alancee sus porciones de comidas no tan saludables con comidas más saludables.

O pte por una variedad de frutas y verduras.

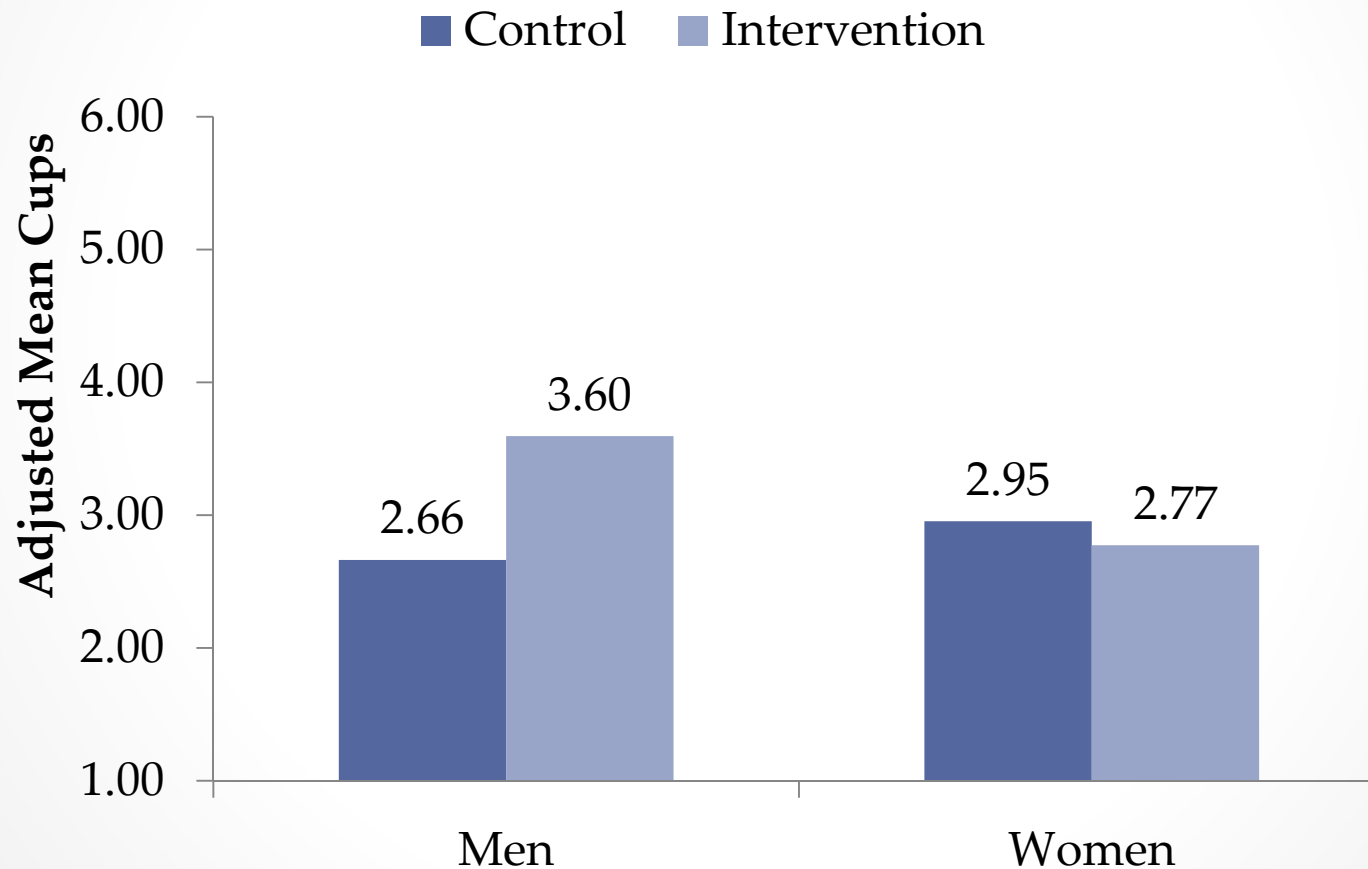
R eforme la preparación de sus comidas, por ejemplo, al usar menos grasas.

Cantidad recomendada de frutas y verduras para mujeres y hombres:		
Mujeres		
Edad	Frutas	Verduras
19-25	2 tazas	2 ½ tazas
26-50	1 ½ tazas	2 ½ tazas
51+	1 ½ tazas	2 tazas
Hombres		
Edad	Frutas	Verduras
19-25	2 tazas	3 ½ tazas
26-50	2 tazas	3 tazas
51+	2 tazas	2 ½ tazas

Study 1: Increase of 1 daily serving of fruits and vegetables



Study 2: Men in intervention condition consumed more FVs 6-mos post-baseline



Next steps?

Develop a better understanding of social x physical environment influences in grocery stores and restaurants.



How children and parents influence each other when grocery shopping



Child: Mom, I want chips.

Mom: No, we have chips at home.

C: No, mom, we don't have *these* chips at home. We only have the kind that dad likes.

M: Fine, what kind do you want?

C: I want the Cheetos.

M: No, you get that orange stuff everywhere. Pick something else .

C: Can I have Pringles?

M: Yeah – that's fine. Put it in the cart.



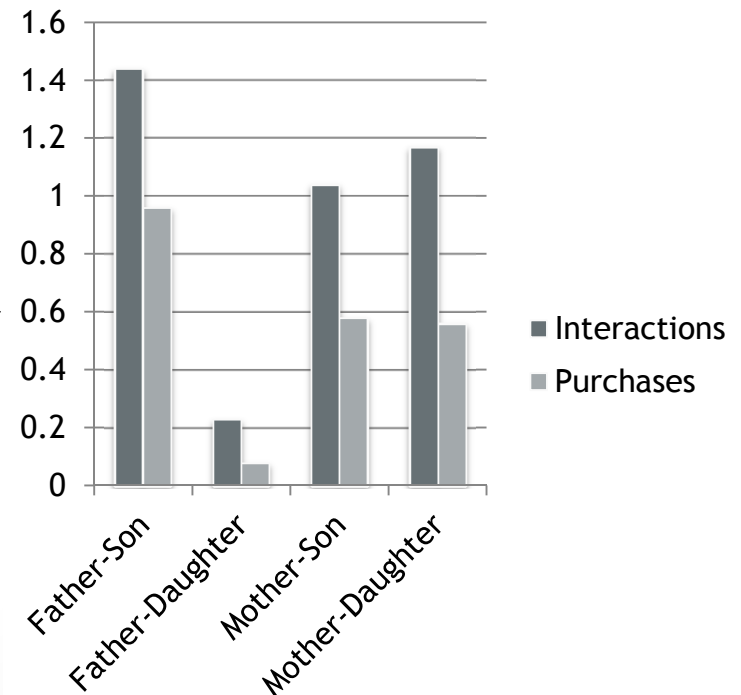
Parent and child gender and number of interactions and purchases

- **Parent-Initiated Interactions**

Fathers initiated more request interactions than mothers and products requested by fathers resulted in more purchases than those requested by mothers.

- **Child-Initiated Interactions**

Sons initiated more request interactions than daughters and products requested by sons resulted in more purchases than those requested by daughters.



Next steps

NIH R21 Eye-tracking study
(under review, Castro and Ayala PIs)



NSF in preparation
(Ayala and Castro, Pis)

Study 1: Extend previous study to include

Supermarkets, Female parent n=50	Tiendas, Female parent n=50
Supermarkets, Male parent n=50	Tiendas, Male parent n=50

Study 2:

Field experiments that
manipulate aspects of
the store (placement,
promotion).

Evaluate through eye-
tracking and sales.

Restaurant work (briefly)

Study 1

Pilot study with 3 restaurants

Objective: introduce healthy child menus into independent restaurants

Johnny's Jr. Meals\$5.25
all meals include small drink

- #1 Bean Cheese & Side of Fries w/Cheese
- #2 One Rolled Taco & Side of Fries w/Cheese
- #3 Grilled Cheese & Side of Fries w/Cheese
- #4 Chicken Strips & Side of Fries w/Cheese
- #5 Taquito & Side of Fries w/Cheese



University of California San Diego (CDCH 2011 1952 001);
Centers for Disease Control and Prevention (U18 DP003377)

Study 2

Formative phase:

- Customer (with children) dining observations
- Ordering and consumption behavior, and sources of influence

Intervention phase:

- Group randomized controlled trial
- 10 restaurants
- Impact on sales of menu items

National Institutes of Child Health and Human Development
(R21 HD071324)

Questions? Comments? Ideas?

Thank you! ¡Gracias!