Summer Speaker Series for Students 2024

Getting Started!

- Update your name on Zoom, if needed
  - *Right click on your Zoom box, click "rename"*

- Type your name and institution into the chat box!

- Remember to keep yourself on mute.

- Type your questions into the chat box.

Healthy Eating Research

NOPREN
Nutrition & Obesity
POLICY RESEARCH & EVALUATION NETWORK

NOPREN HER Summer Series for Students

Schedule and Topics

- June 12: Food Policies in Schools - More than just Lunch!
- June 26: Food is Medicine: What does it mean?
  Where are we going?
- July 10: Leveraging Food Service Contracts at 4-year Public Universities to Understand Meal Plan Costs and Affordability
- July 24: Policy, Systems, and Environmental Strategies to Support Young Children's Diet and Health
- August 7: Collaborating Successfully across Sectors toward Nutrition Security
- **August 14: Student Presentations**

Session recordings available here: https://nopren.ucsf.edu/her-nopren-summer-speaker-series-students-2024

Healthy Eating Research

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Student Posters

- **Marian Winters, University of South Carolina:** Mediation of the association between sociodemographic characteristics and psychosocial well-being by food insecurity among Mexican and U.S. Mexican American adults in 2021

- **Elise Sheinberg, Harvard University:** New and recurring food insecurity during and after the COVID-19 pandemic in a nationally representative sample

- **Salma Hakam, The University of North Carolina at Chapel Hill:** From Awareness to Access: Enhancing SNAP Participation Among Middle Eastern and North African Immigrants in North Carolina

- **Man Viet Nguyen, Boston University:** Development of a conceptually equivalent Vietnamese-language translation of the US Household Food Security Survey Module for use with Vietnamese people living in the US

- **Charlotte Kerber, University of California, Davis:** Qualitative analysis of fieldnote and interview data for planning a food bank-based breast cancer screening intervention

View them here: https://nopren.ucsf.edu/her-nopren-summer-student-posters-2024

Healthy Eating Research

NOPREN
Nutrition & Obesity
POLICY RESEARCH & EVALUATION NETWORK

Session 6: Student Presentations

Today's Presenters

Moderator: Alex Ross
Fellow, Healthy Food Retail Work Group

Student Presenters:

1. Hope Craig, Friedman School of Nutrition at Tufts University

2. Anna Localio, University of Washington

3. Claire Branley, University of Massachusetts Chan Medical School

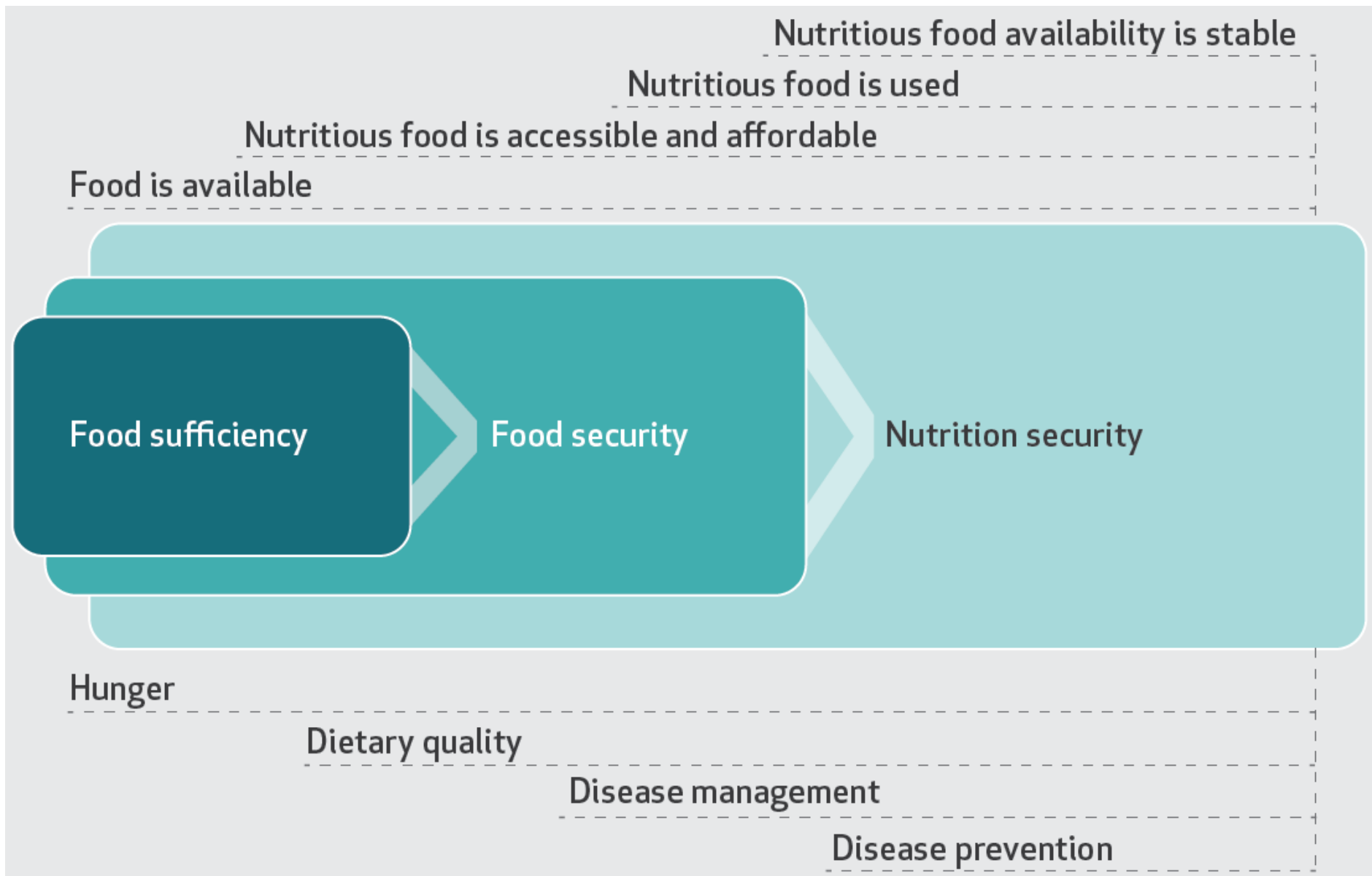**4. Shreya Raval**, Arizona State University

Development and Validation of a Nutrition Security Screener

Hope Craig, MSPH
PhD Student, Tufts Friedman School of Nutrition
Presentation to the HER NOPREN Summer Speaker Series
August 14, 2024

Mozaffarian (2023) *Health Affairs* adapted from Thorndike et al. (2022) *Circulation.*

Research Questions

1. What is the **prevalence of nutrition insecurity** in diverse U.S. populations?
2. How does the prevalence of nutrition insecurity **compare to the prevalence of food insecurity**, as measured by the 2-item HVS and 6-item USDA food security module?
3. How does nutrition insecurity compare to food insecurity as a **predictor of diet-related disease** and self-reported health?

2-item Nutrition Security Screener

[Preamble: The next questions are about healthy foods - foods that support your health and well-being. These foods include, for example, fruits, vegetables, whole grains, beans, nuts, yogurt, and fish. These foods can be fresh, frozen, or canned; and don't have to be organic. Less healthy foods can include foods that are highly processed, packaged, and high in salt, starch, sugar, and unhealthy fats.]

1. **Thinking about the last 12 months, how hard was it for you or your household to regularly get and eat healthy foods?** Response options include very hard, hard, somewhat hard, not very hard, or not hard at all. [Don't know, refused].

2. **People have different reasons for eating or not eating healthy foods. Please tell me which, if any, of the following reasons were true for you or your household in the last 12 months.** Response options: often true, sometimes true, or never true [Don't know, refused]

a. Healthy foods are too expensive

b. There aren't a lot of healthy food choices at stores where I usually shop

c. Stores or food pantries with healthy foods are too far away / hard to reach

d. I don't have a car or other transportation to reach stores or food pantries that have healthy foods

e. I don't have enough time to shop for healthy foods

f. I don't have enough time to cook healthy foods

g. My cooking equipment or storage space is not enough to prepare healthy foods

h. I don't know how to cook healthy foods

i. I don't know which foods are considered healthy foods

j. I or my family don't like the taste of healthy foods

k. Some of the foods from my culture are hard to make healthy

l. I'm not sure I qualify for food assistance programs like food stamps (aka SNAP, CalFresh, or EBT) or WIC that help me buy healthy foods

m. I have mobility challenges / physical limitations that make it difficult for me to prepare and eat healthy foods.

n. Other - please specify:_____

Methods

- 2-item NSS was refined in pilot studies and assessed against measures of food insecurity (2-item HVS or 6-item USDA module), socio-demographics, and health in 5 diverse populations.

- Descriptive analyses examine prevalence of food and nutrition security.

- Multivariate logistic modelling examines food and nutrition insecurity as predictors of health, adjusting for age, sex, income, race/ethnicity, and education.

- Data were analyzed using STATA.

Methods
Summary of included surveys

#	Survey	Sample population	n	Description
1	Food is Medicine (FIM) National Poll	National	3009	Investigates knowledge/experience with diet-related medical conditions, FIM programs within health care settings, and experience with food and nutrition insecurity.
2	Food is Medicine (FIM) California Poll	State	650	Investigates of knowledge/experience with diet-related medical conditions, FIM programs within health care settings, and experience with food and nutrition insecurity.
3	Kaiser Permanente Social Needs Survey	National	6317	Describes prevalence of social risk and need across representative sample of KP members nationally.
4	Los Angeles County Department of Public Health Survey	LA County	9372	Assesses of health needs/behaviors of County residents, evaluates current programs and initiatives, and informs public health policy planning.
5	USC Understanding America	LA County	1152	UAS is a probability-based nationally representative internet panel of U.S. adults, oversampled in LA County. Offers in-depth portrayal of the people in the U.S., their daily lives and opinions

Results

Demographics

Age	FIM National Poll (N=3009)
18-34 years	31%
35-49 years	35%
50-64 years	15%
65+ years	19%
Sex	
Female	51%
Male	49%
Non-binary	<1%

Income	FIM National Poll (N=3009)
<$25,000	27%
$25,000-$49,999	25%
$50,000-$99,999	16%
$100,000-$150,000	16%
>$150,000	15%
Education	
< High school or High school / GED	39%
Some college / vocational (trade school)	<8%
College graduate or higher	53%
Race	
White (non-Hispanic)	63%
Hispanic/Latinx	16%
Black (non-Hispanic)	14%
Asian/Pacific Island/Other (non-Hispanic)	<5%
Native American, indigenous (non-Hispanic)	<2%

Food and nutrition insecurity prevalence and correlation

| Survey	n	Food security measure	Food insecurity	Nutrition insecurity	Spearman correlation (r)	P-value
FIM National Poll	3009	2-item HVS	42%	44%	0.618	<0.001
FIM CA Poll	650	2-item HVS	37%	41%	0.610	<0.001
KP National Social Needs	6317	2-item HVS	13%	18%	0.551	<0.001
Los Angeles County Public Health Survey	9372	6-item USDA module	25%	33%	0.400	<0.001
USC Understanding America Study, L.A. County	1152	6-item USDA module	24%	25%	0.458	<0.001

FIM = Food is Medicine. HVS = Hunger Vital Signs. KP = Kaiser Permanente. USC = University of Southern California.
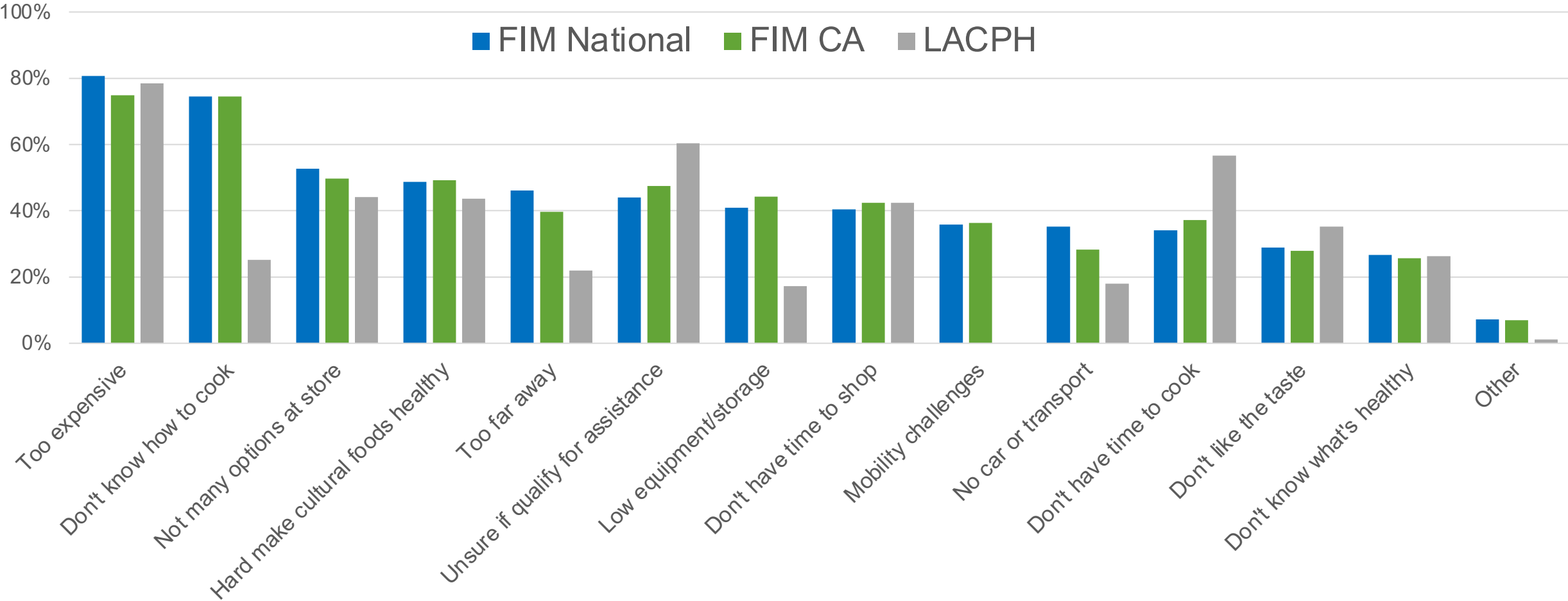
Overlap of food and nutrition insecurity
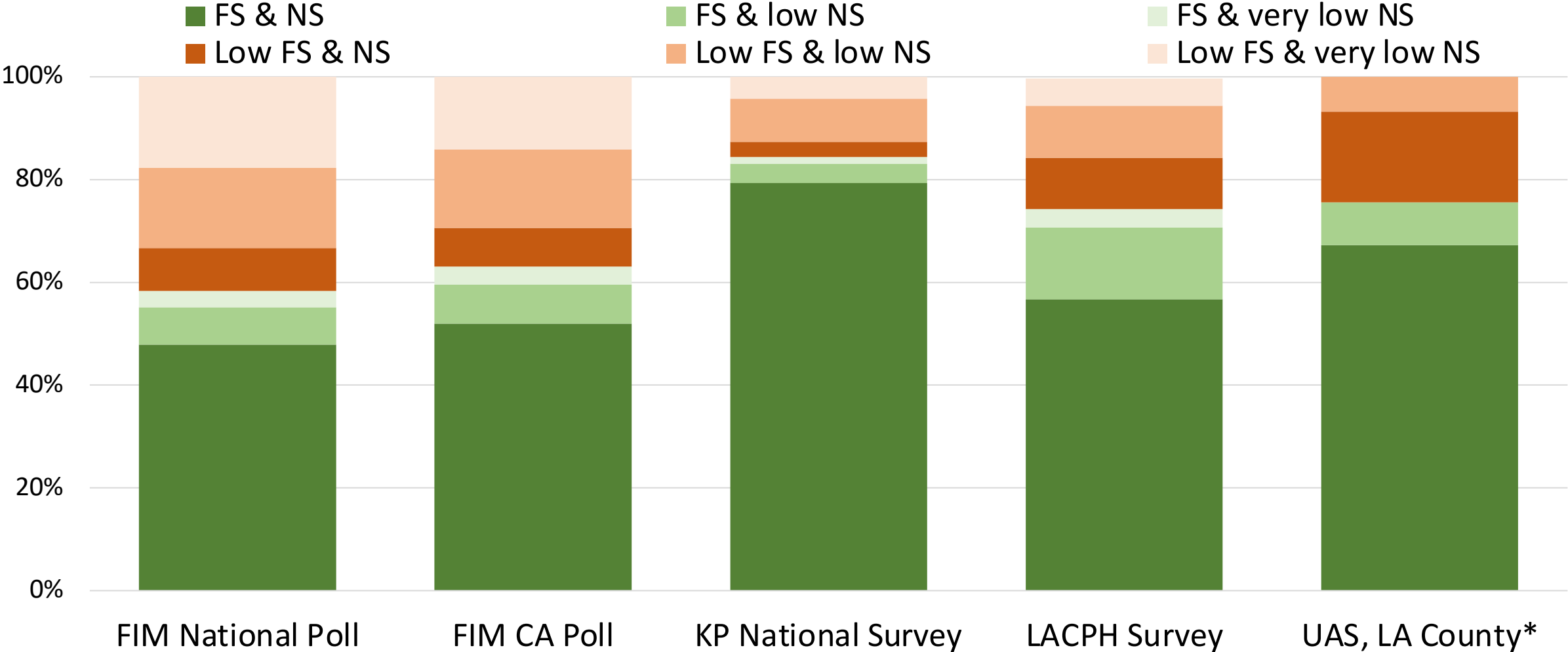
*USC survey does not distinguish between low and very low NS

Overlap of food and nutrition insecurity

Legend:
- ■ FS & NS
- ■ Low FS & NS
- ▣ FS & low NS
- ■ Low FS & low NS
- ▣ FS & very low NS
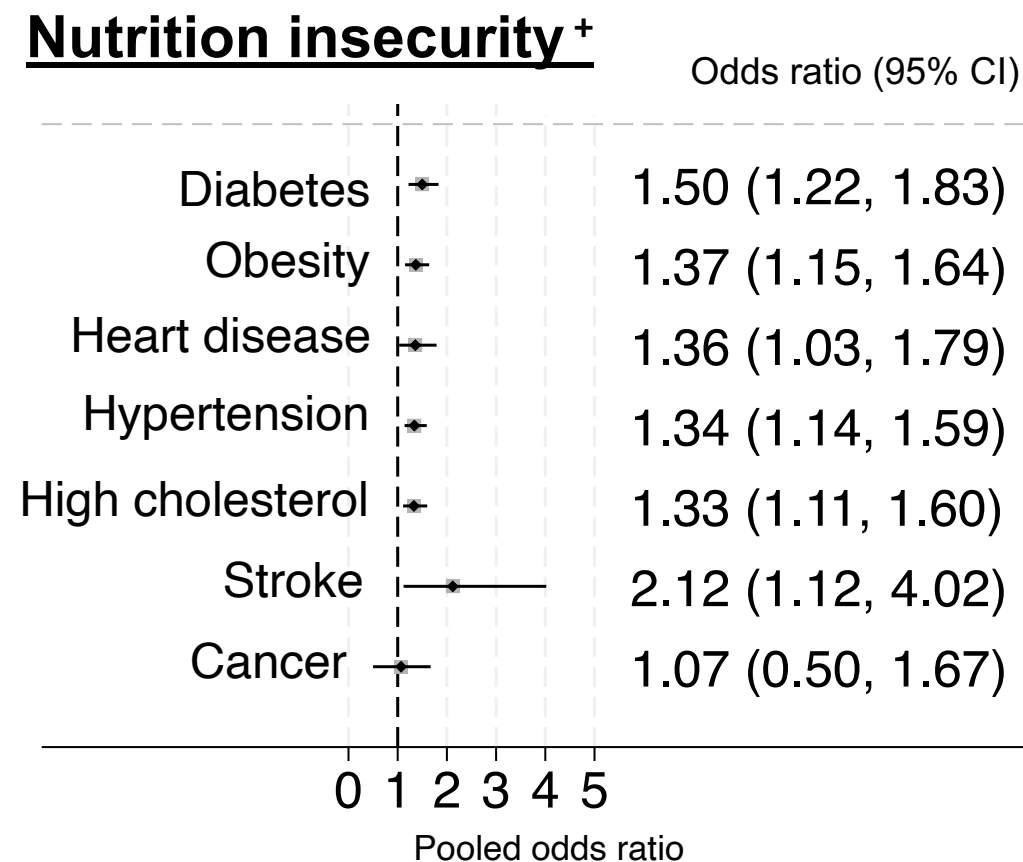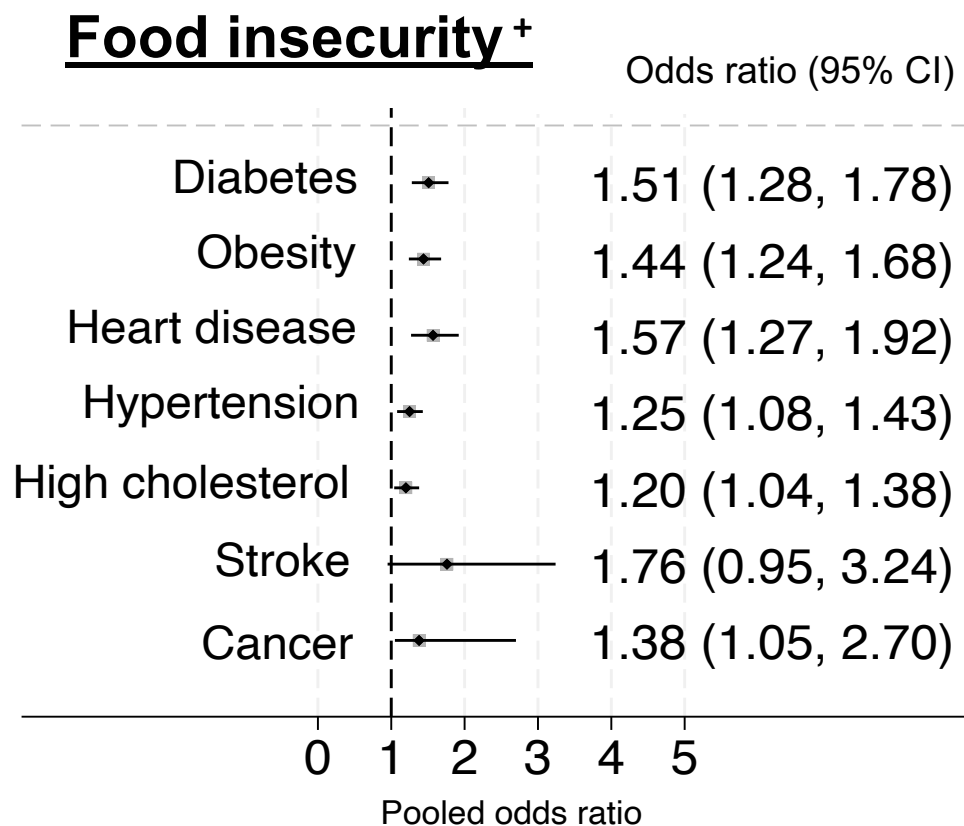- ▢ Low FS & very low NS
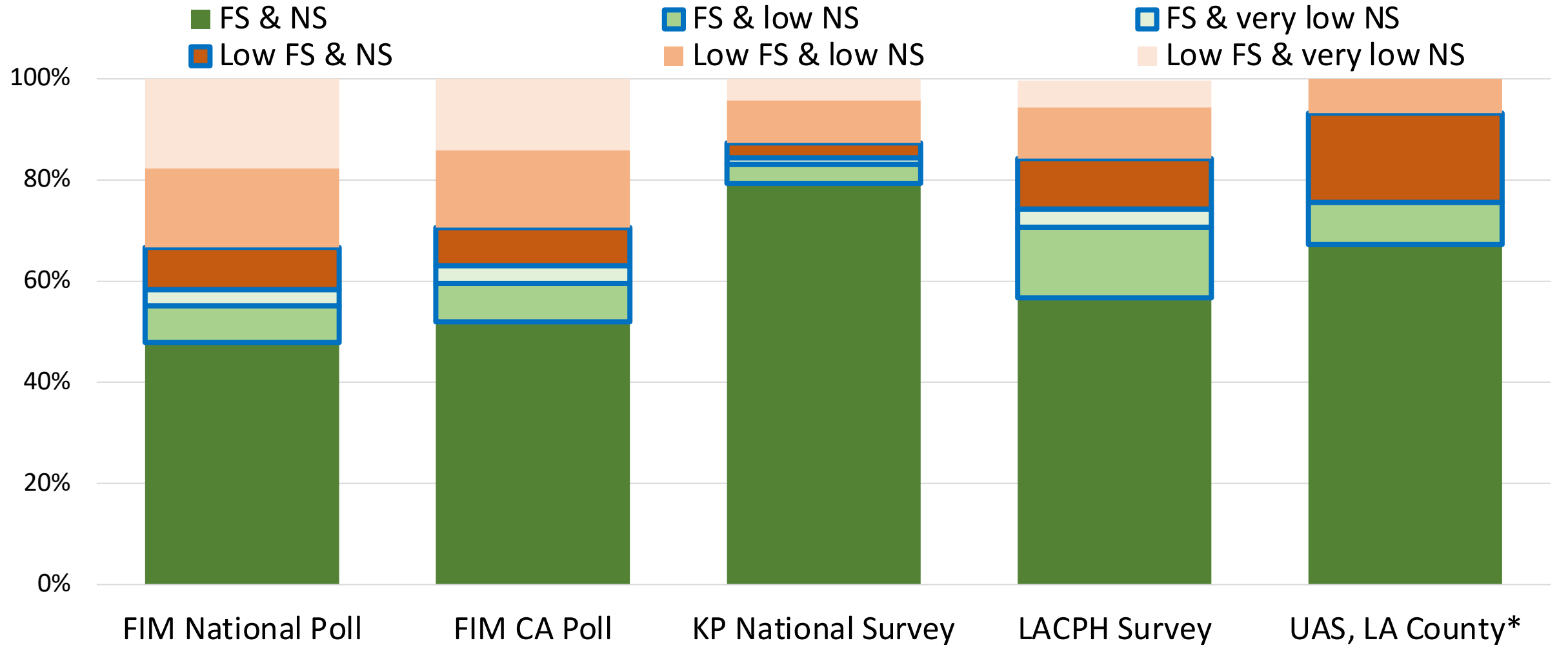
*USC survey does not distinguish between low and very low NS

Barriers to Nutrition Security (Often/Sometimes True)

Legend: ■ FIM National ■ FIM CA ■ LACPH

Categories (x-axis): Too expensive, Don't know how to cook, Not many options at store, Hard make cultural foods healthy, Too far away, Unsure if qualify for assistance, Low equipment/storage, Don't have time to shop, Mobility challenges, No car or transport, Don't have time to cook, Don't like the taste, Don't know what's healthy, Other

Multivariable adjusted associations of food and nutrition insecurity with prevalent health conditions

Food insecurity [+]

Odds ratio (95% CI)

	Odds ratio (95% CI)
Diabetes	1.51 (1.28, 1.78)
Obesity	1.44 (1.24, 1.68)
Heart disease	1.57 (1.27, 1.92)
Hypertension	1.25 (1.08, 1.43)
High cholesterol	1.20 (1.04, 1.38)
Stroke	1.76 (0.95, 3.24)
Cancer	1.38 (1.05, 2.70)

Pooled odds ratio

Nutrition insecurity [+]

Odds ratio (95% CI)

	Odds ratio (95% CI)
Diabetes	1.50 (1.22, 1.83)
Obesity	1.37 (1.15, 1.64)
Heart disease	1.36 (1.03, 1.79)
Hypertension	1.34 (1.14, 1.59)
High cholesterol	1.33 (1.11, 1.60)
Stroke	2.12 (1.12, 4.02)
Cancer	1.07 (0.50, 1.67)

Pooled odds ratio

[+] Multivariable model adjusted for age, sex, income, race/ethnicity, education and jointly adjusted for food and nutrition insecurity. Pooled results from FIM National, FIM CA, and LACPH Surveys.

Multivariable adjusted associations of food and nutrition insecurity with prevalent health conditions

Food insecurity [+]

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Cancer	1.38 (1.05, 2.70)

Pooled odds ratio

Nutrition insecurity [+]

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Pooled odds ratio
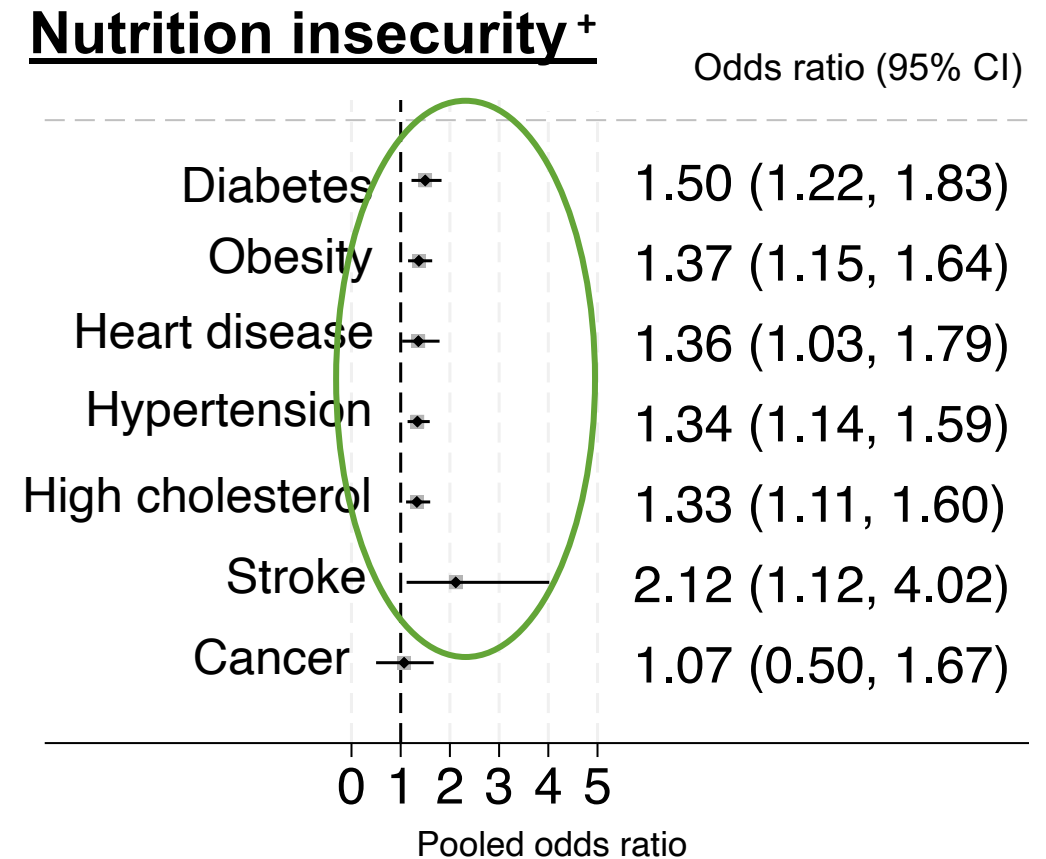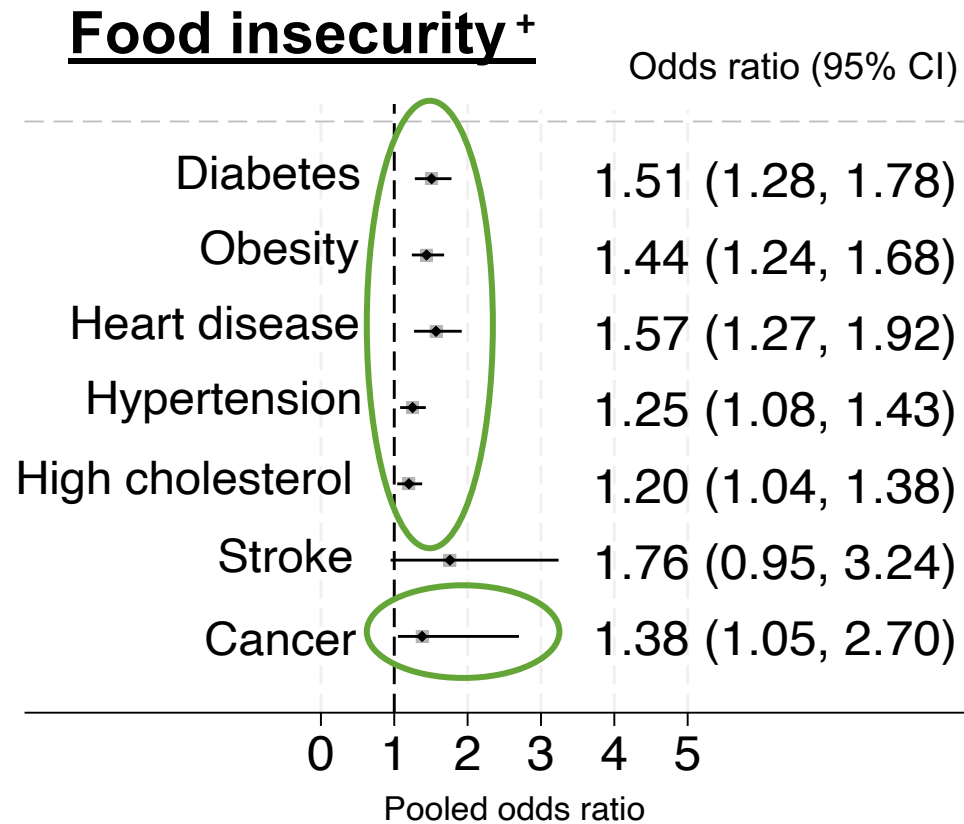
[+] Multivariable model adjusted for age, sex, income, race/ethnicity, education and jointly adjusted for food and nutrition insecurity. Pooled results from FIM National, FIM CA, and LACPH Surveys.

Association of food and nutrition insecurity and self-reported physical and mental health

KP Social Needs Survey (N=6317)	Food insecurity[+]		Nutrition insecurity[+]	
Self-reported physical health	OR	95% CI	OR	95% CI
Very Good/Excellent (n=2877)	1.00 (Ref)	---	1.00 (Ref)	---
Good (n=2358)	1.37	(0.92, 2.04)	1.75*	(1.25, 2.45)
Poor / Fair (n=1017)	1.67*	(1.03, 2.72)	3.14**	(2.07, 4.75)
Self-reported mental health				
Very Good/Excellent (n=3524)	1.00 (Ref)	---	1.00 (Ref)	---
Good (n=1796)	1.23	(0.83, 1.81)	2.04**	(1.47, 2.85)
Poor/Fair (n=943)	2.54**	(1.66, 3.91)	2.30**	(1.58, 3.33)

[+] Multivariable model adjusted for age, sex, income, race/ethnicity, education and jointly adjusted for food and nutrition insecurity.

Association of food and nutrition insecurity and self-reported physical and mental health

KP Social Needs Survey (N=6317)	Food insecurity[+]		Nutrition insecurity[+]	
Self-reported physical health	OR	95% CI	OR	95% CI
Very Good/Excellent (n=2877)	1.00 (Ref)	---	1.00 (Ref)	---
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Self-reported mental health				
Very Good/Excellent (n=3524)	1.00 (Ref)	---	1.00 (Ref)	---
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[+] Multivariable model adjusted for age, sex, income, race/ethnicity, education and jointly adjusted for food and nutrition insecurity.

Many thanks to our collaborators:

Food is Medicine Institute, Friedman School of Nutrition, Tufts

Julia Reedy Sharib

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Thank you!

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Extra Slides

Nutrition Security Screener

*[Preamble] The next questions are about healthy foods - ==**foods that support your health and well-being**==. These foods include, for example, fruits, vegetables, whole grains, beans, nuts, yogurt, and fish. These foods can be fresh, frozen, or canned; and don't have to be organic. Less healthy foods can include foods that are highly processed, packaged, and high in salt, starch, sugar, and unhealthy fats.*

1. Thinking about the last 12 months, ==**how hard**== was it for you or your household to ==**regularly get and eat healthy foods**==?
   a. Very hard
   b. Hard
   c. Somewhat hard
   d. Not very hard
   e. Not hard at all

2. People have different ==**reasons for eating or not eating healthy foods**==. Please tell me which, if any, were true for you / your household in the last 12mo. *Often true, sometimes true, or never true.*
   a. Healthy foods are too expensive
   b. There aren't a lot of healthy food choices at the stores where I usually shop
   c. Stores or food pantries with healthy foods are too far away or hard to reach
   d. I don't have a car or other transportation to reach stores or food pantries that have healthy foods
   e. I don't have enough time to shop for healthy foods
   f. I don't have enough time to cook healthy foods
   g. My cooking equipment or storage space is not enough to prepare healthy foods
   h. I don't know how to cook healthy foods
   i. I don't know which foods are considered healthy foods
   j. I or my family don't like the taste of healthy foods
   k. Some of the foods from my culture are hard to make healthy
   l. I'm not sure I qualify for food assistance programs like food stamp that help me buy healthy foods
   m. I have mobility challenges or physical limitations making it difficult to prepare/eat healthy foods.
   n. Other - please specify:_____

Food Security Screener

2-item Hunger Vital Sign (HVS) tool

	Never true (1)	Sometimes true (2)	Often true (3)	Prefer not to answer (4)
Within the past 12 months we worried whether our food would run out before we got money to buy more. (1)	○	○	○	○
Within the past 12 months the food we bought just didn't last and we didn't have money to get more. (2)	○	○	○	○

Food Security Survey Module

These <u>next questions are about the food eaten in your household in the last 12 months, since (current month) of last year and <mark>whether you were able to afford the food you need</mark></u>.

HH3. I'm going to read you several statements that people have made about their food situation. For these statements, please tell me whether the statement was <u>often</u> true, <u>sometimes</u> true, or <u>never</u> true for (you/your household) in the last 12 months—that is, since last (name of current month).

The first statement is, "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more." Was that <u>often</u>, <u>sometimes</u>, or <u>never</u> true for (you/your household) in the last 12 months?

- [ ] Often true
- [ ] Sometimes true
- [ ] Never true
- [ ] DK or Refused

HH4. "(I/we) couldn't afford to eat balanced meals." Was that <u>often</u>, <u>sometimes</u>, or <u>never</u> true for (you/your household) in the last 12 months?

- [ ] Often true
- [ ] Sometimes true
- [ ] Never true
- [ ] DK or Refused

AD1. In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?

- [ ] Yes
- [ ] No (Skip AD1a)
- [ ] DK (Skip AD1a)

AD1a. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- [ ] Almost every month
- [ ] Some months but not every month
- [ ] Only 1 or 2 months
- [ ] DK

AD2. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?

- [ ] Yes
- [ ] No
- [ ] DK

AD3. In the last 12 months, were you every hungry but didn't eat because there wasn't enough money for food?

- [ ] Yes
- [ ] No
- [ ] DK

Background / Rationale

- Food and nutrition insecurity are **major public health problems** in the U.S.

- Current measures of food security have important limitations in the context of FIM interventions, including lack of assessment of **food quality**.

- This nutrition security construct was designed to **complement measures of food security**. Nutrition security screening tools can enhance efforts to address food insecurity.

- **Valid measures are needed** as an important element in the process of advancing knowledge to improve nutrition and health.

Evaluating the Impact of a Universal Free School Meals Policy on High Blood Pressure in Children

Anna Localio, MPH
University of Washington

Public Health Problem:
Pediatric High Blood Pressure

- Systolic or diastolic blood pressure ≥ 90th percentile for age, sex, and height
  - Threshold for deleterious health outcomes

- Tracks into adulthood; causes cardiovascular disease and stroke
- Major Causes:
  - High BMI
  - Low diet quality
  - Insufficient physical activity

Flynn et al. 2017, 2022
Azegami et al. 2021

Potential Policy Solution:
Community Eligibility Provision (CEP)

- Authorized by the 2010 Healthy, Hunger-Free Kids Act
- Became available to eligible schools nationwide in school year 2014-15
- Allows schools in low-income areas to provide free breakfast and lunch to all students
- Increases participation in school meals which are healthier than alternatives
- Linked to improvements in food security and academic, behavioral, and health outcomes
- Reaches over 40,000 schools, 20 million children

Cohen et al. 2021
Au et al. 2018
Localio et al. 2024
FRAC 2023

Research Question

What is the association of school CEP participation with prevalence of high blood pressure in children?

Methodology: Study Sample

- Open cohort of children and adolescents ages 4-18 who received care from community health organizations nationwide within the OCHIN network

- Patient medical records matched to neighborhood schools based on address

- School CEP participation data obtained directly from state departments of education and National Center for Education Statistics

- Followed patient-matched schools longitudinally from 2013 through 2019

Methodology:
Variables

- **Exposure:**
  - School CEP participation

- **Outcome:**
  - School-level prevalence of a high blood pressure measurement

- **Covariates:**
  - **Time-varying:**
    - Mean patient age
    - Percent of patients with public health insurance
    - Percent Hispanic, White, and Black patients
    - State Medicaid Expansion status
  - **Time invariant:**
    - Model controlled for all time-invariant school-level confounders

Methodology: Statistical Analysis

Callaway & Sant'Anna Difference-in-Differences Estimator

- Estimates a separate treatment effect for each cohort and year
- Estimates can be aggregated by cohort or years relative to policy adoption
- Control group: both never and not yet participating schools
- Parallel trends assumption conditional on covariates
- Doubly robust estimator: IPTW and outcome regression
- Weighted by mean number of patients per school

Results

Sample Characteristics

1,052 schools matched to > 5 patients per year between school years 2013-14 through 2018-19

67% Elementary Schools
16% Middle Schools
15% High Schools

78% Students Eligible for Free or Reduced Price Meals at Baseline

155,778 distinct patients with ≥ 1 blood pressure measurement during school year, 2013-14 through 2018-19

Mean Patients per School: **47**

48% Hispanic
22% Non-Hispanic White
16% Non-Hispanic Black

Results

Sample Characteristics
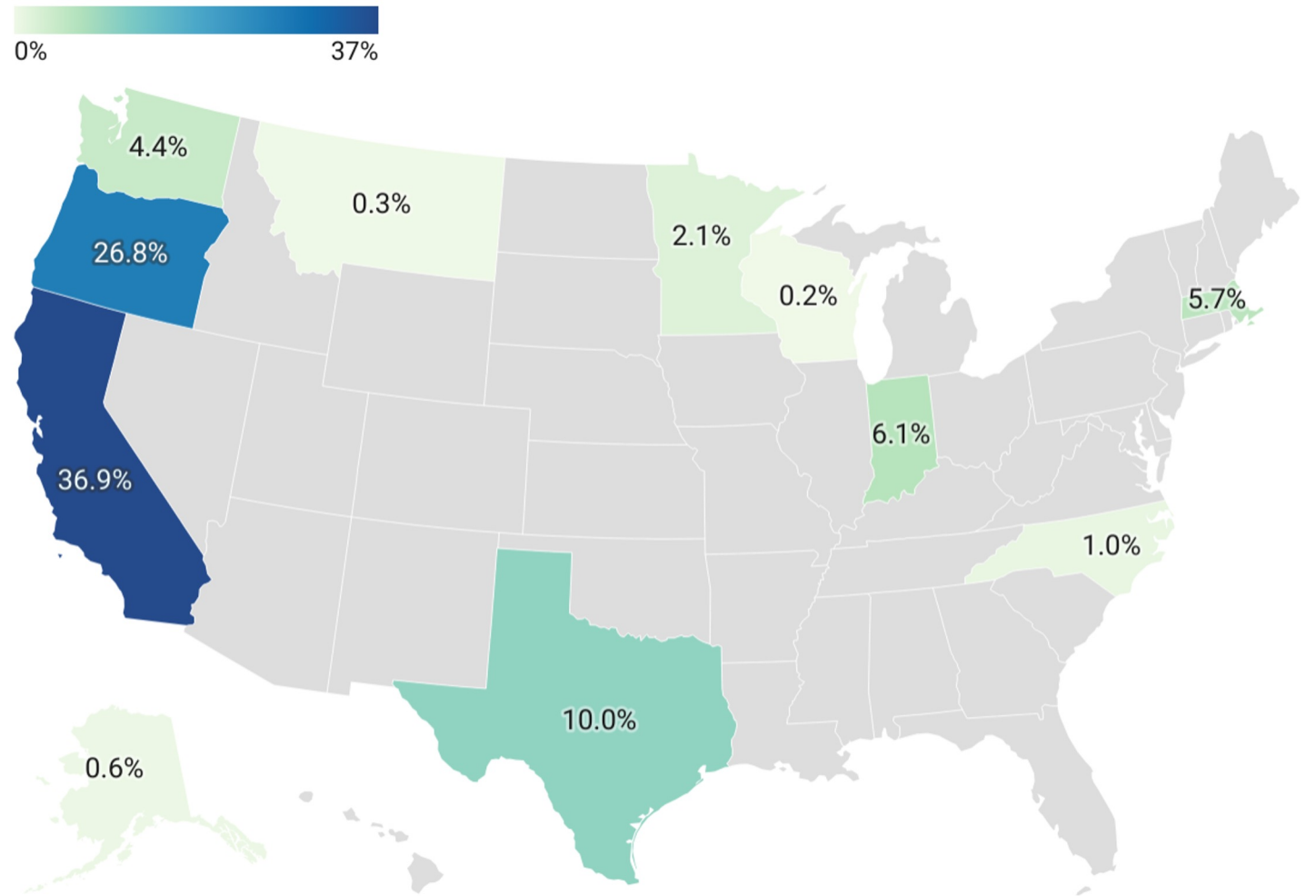
Results

Adjusted Difference-in-Differences in High Blood Pressure Prevalence

Overall Post-Policy Estimate: **-2.73 percentage points** (95% CI: -4.76, -0.70, p<.01)

Corresponds to an **11% net decrease** from baseline

Pre-Policy Point Estimate and 95% Confidence Interval

Post-Policy Point Estimate and 95% Confidence Interval

Years Relative to Policy Adoption
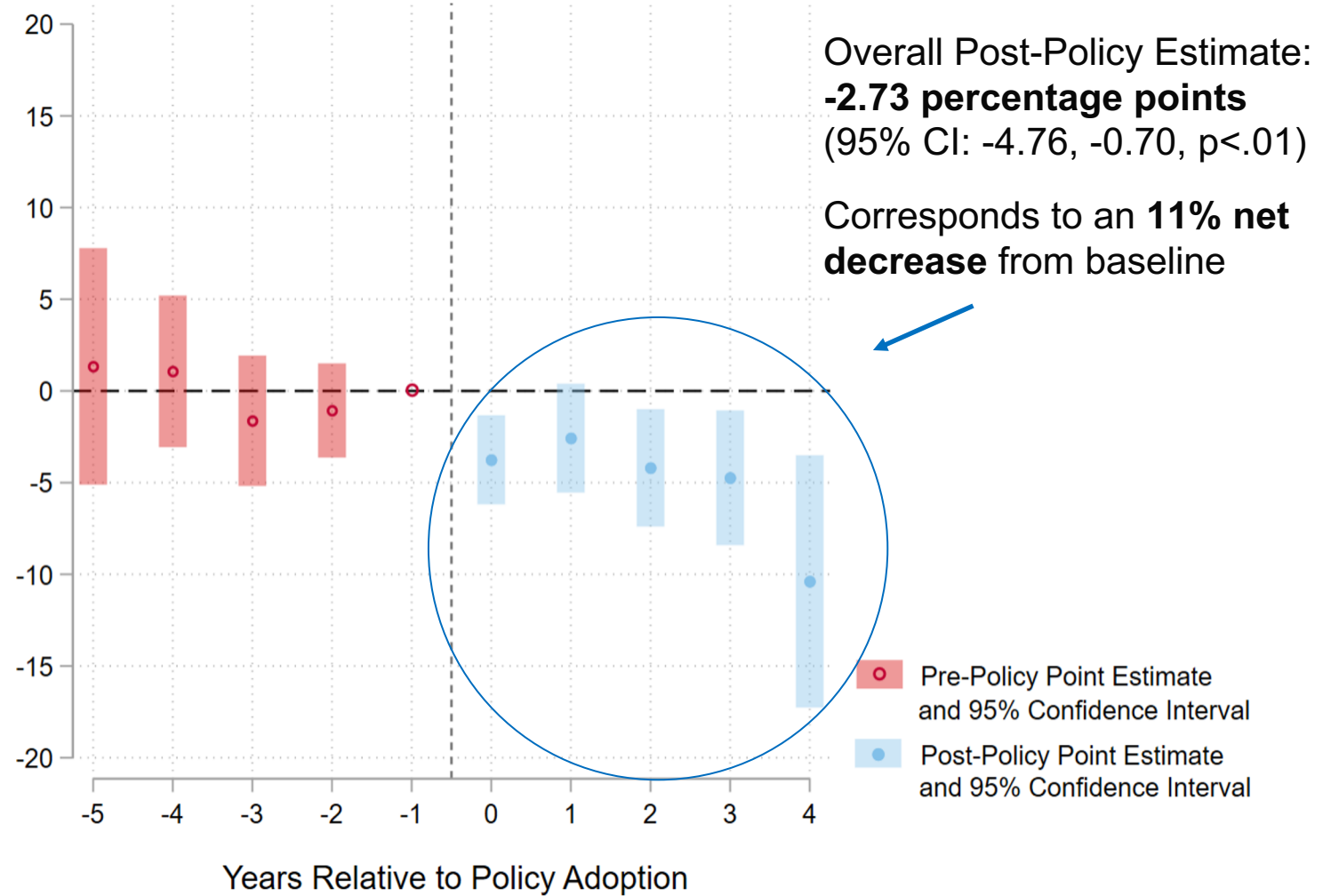
Limitations

- o Sample is not nationally representative; schools concentrated predominantly in California and Oregon
- o Limited analysis to a balanced sample of schools
  - o Decreased generalizability, increased internal validity
- o Outcome "prevalence of a high blood pressure measurement" overestimates true prevalence of persistent, elevated blood pressure
- o Potential for measurement error in matching patients to closest neighborhood based on address

Significance

o Adds to mounting evidence that CEP is linked to positive health outcomes

o Findings can be used to guide policy and funding decisions and inform future research

o Represents paradigm shift in investigating interventions to address high blood pressure

Acknowledgements

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○ UW Collaborators:
- ◦ Jessica Jones-Smith, PhD, MPH (PI)
- ◦ Paul Hebert, PhD
- ◦ Melissa Knox, PhD
- ◦ Jennifer Sonney, PhD

○ OCHIN Collaborators:
- ◦ Wyatt Bensken, PhD
- ◦ Aileen Ochoa, MPH

THANK YOU

Questions?

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References

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2. Flynn JT. What Level of Blood Pressure Is Concerning in Childhood? *Circ Res*. 2022;130(5):800-808. doi:10.1161/CIRCRESAHA.121.319819

3. Azegami T, Uchida K, Tokumara M, Mori M. Blood Pressure Tracking from Childhood to Adulthood. *Frontiers in Pediatrics.* 2021;9:785356. doi: 10.3389/fped.2021.785356

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5. Cohen JFW, Hecht AA, McLoughlin GM, Turner L, Schwartz MB. Universal School Meals and Associations with Student Participation, Attendance, Academic Performance, Diet Quality, Food Security, and Body Mass Index: A Systematic Review. *Nutrients*. 2021;13(3):911. doi:10.3390/nu13030911

6. Localio AM, Knox MA, Basu A, Lindman T, Walkinshaw LP, Jones-Smith JC. Universal Free School Meals Policy and Childhood Obesity. *Pediatrics*. Published online March 18, 2024. doi:https://doi.org/10.1542/peds.2023-063749

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Implementation of a Social Needs Screener and Uptake Patterns of a Produce Prescription Program in a Pediatric Clinic

Claire Branley
MD/PhD Student, UMass Chan Medical School

August 14th, 2024
HER NOPREN Summer Speaker Series for Students

Outline

Background
- ◦ WECARE Social Needs Screener
- ◦ Fresh Connect program

Study Objective

Methods

Results

Discussion

UMass Chan
MEDICAL SCHOOL

Social Risk/Social Need Screening

- American Academy of Pediatrics (AAP): early identification of social needs, and referrals to resources, among families with children is an effective strategy to ameliorate child poverty[1]
- Variety of screening options are available[2]
  - Social risk: adverse conditions associated with poor health; ie food insecurity
  - Social need: a social risk an individual seeks assistance with

Screener	SDOH Domains Assessed
Accountable Health Communities Tool	Disabilities, education employment, financial strain, food insecurity, housing insecurity, housing quality, interpersonal violence, social support, stress, transportation, utilities
Health Leads	Childcare access, food insecurity, healthcare/medicine access, housing insecurity, literacy, social support, transportation, utilities
Hunger Vital Sign	Food insecurity
Safe Environment for Every Kid (SEEK)	Food insecurity interpersonal violence, social support, stress
Well Child Care, Evaluation, Community Resources, Advocacy, Referral, Education (WE CARE)	Childcare access, education, employment, food insecurity, housing insecurity, utilities

Table modified from Brochier et al

WE CARE Social Needs Screener

- WE CARE=Well Child Care, Evaluation, Community Resources, Advocacy, Referral, Education
  - Created by Dr. Arvin Garg[3]
  - Originally implemented in Boston, MA and expanded to clinics nationally
- Integrated into EHR at a new urban pediatric primary care clinic in October 2021

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Produce Prescription: FreshConnect

https://www.freshconnect.org/

- About Fresh, a Boston-based company, created FreshConnect to digitalize produce prescriptions and referrals

- Benefit amounts and and length vary depending on hospital system
  - Families at the clinic were offered $80 per month for 6 months
  - The debit card purchases fresh fruits and vegetables at specific retailers only

Oct. 2021	→	Aug 2022-Aug 2023	→	July 2024

Oct. 2021
- WE CARE screening implemented
- Parent responses recorded in EHR

Aug 2022-Aug 2023
- Staggered enrollment in Fresh Connect begins
- All parents/caregivers with completed WCS offered FC regardless of response (n=1,049)
  - Must speak English, Spanish, or Portuguese

July 2024
- Analysis
- Child race/ethnicity, age, parent preferred language, and insurance status extracted from medical record
- Those with missing information removed from analysis (n=24)

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Study Objectives and Analysis

Objective
Determine the association between social needs screener responses and odds of enrollment into FC

Analysis
- Descriptive statistics of sample population were calculated
- A multivariable adjusted logistic regression was used to determine the association between WCS response and FC enrollment

Sample Demographics

WE CARE Screening Response	Sample Characteristics (n=1,025)			
	No (Ref)	Yes	Maybe Later	Left Blank
Sample, n	802	62	19	142
Child Race/ethnicity				
White, non-Hispanic	39.5	24.2	15.8	40.9
Hispanic	30.9	30.7	42.1	17.6
Black, non-Hispanic	14.7	40.3	32.6	26.1
NH Asian/Multiracial/Other	14.8	4.8	10.5	15.5
Child age (mean, SD)	8.9 (6.5)	10.2 (7.1)	8.1 (5.7)	10.6 (6.5)
Parent Preferred Language				
English	98.1	96.8	94.7	94.4
Not English	1.9	3.2	5.3	5.6
Child Insurance				
Private	46.1	22.6	15.8	34.5
Public	49.0	69.4	79.0	59.2
Uninsured	4.9	8.1	5.3	6.3
Enrolled in Fresh Connect	19.2	27.4	52.6	18.31

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Results

After adjusting for sociodemographic characteristics, indicating "yes" for wanting help with food on a social needs screener **did not increase the odds of enrollment** into produce prescription program

There was a statistically significant association between parents choosing "maybe later" on the screener and enrollment in FC

Outcome: Enrollment in Fresh Connect	Odds Ratio (OR)	95% Confidence Interval
WC Screener Response		
No	Ref.	Ref.
Yes	1.1	0.6-2.1
Maybe Later	3.2	1.2-8.3
Not Marked	0.9	0.5-1.4
Child race/ethnicity		
Non-Hispanic (NH) White	Ref.	Ref.
NH Black/African American	1.8	1.1-3.0
Hispanic	1.9	1.2-2.9
Other/Multiracial	1.1	0.6-2.0
Insurance Status		
Private	Ref.	Ref.
Public	4.3	2.8-6.6
Other/insured	3.3	1.5-6.9
Parent Language Pref.		
English	Ref.	Ref.
Not English	0.7	0.3-1.8
Child age	0.97	0.95-0.99

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Discussion

Parents accepted the pediatric produce prescription regardless of screening response
- The majority (73%) of parents who requested help with food never enrolled in FC
  - Reflection of the program
  - Few other programs have described concordance between screening and response and program enrollment[4]
- Indicating "maybe later" on the screener was significantly associated with enrollment
  - Small sample size
  - Look into time between screener and phone call for enrollment

When possible, offer food resources to all families regardless of screening response

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Evaluating School Meal Participation Post-Policy Change in Arizona.

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Background

3 Tiered System

❑ Free Meals

❑ Reduced Price Meals

❑ Paid Meals

Eligibility

❑ <130% of the federal poverty line are eligible for free meals

❑ 130-185 % of the federal poverty line are eligible for reduced-price meals

❑ Above 185% of the federal poverty line pay full price

USDA, (*The National School Lunch Program*, n.d.; *The School Breakfast Program*, n.d.)

Background

❑ Helps Alleviate Food Insecurity and Poverty

❑ Supports Good Nutrition

WHY SCHOOL MEALS ARE IMPORTANT?

❑ Improves Weight Outcomes

❑ Improve attendance, academic performances and academic achievements

(Cohen et al., 2021; Fletcher & Frisvold, 2017; Huang & Barnidge, 2016)

Background

❑ USDA authorized free school meals in response to the COVID-19 pandemic
- Free school meals ended in September 2022 and most states returned to the 3-tiered system

❑ The Arizona Department of Education implemented a policy to provide free meals to children eligible for reduce-price meals from January 2023 – June 2024.

(Child Nutrition Programs: COVID-19 Waivers by State | Food and Nutrition Service, n.d.), (Director,N 2022)

Research Question

The objective of this study is to examine the **impact** of a state-level policy that eliminated the reduced-price co-pay for families in Arizona as of January 2023 on school meal participation.

Methodology

❑ Data Sources
Meals served, student eligibility, and CEP participation data: Arizona Department of Education
School demographic data: National Center for Education Statistics

❑ Study Periods:

Time Period 1	July 22-Dec 22 (3 tiered system in place)
Time Period 2	July 23- Dec 23 (Arizona policy in place)

❑ Analysis: Compare the overall average daily participation (ADP) rate for each time period and for each of the following categories
  • Free meals
  • Reduced-price meals
  • Full-price meals

Learnings

❑ Requesting Data from state agency (ADE)

❑ Analytical variable construction from secondary data sources (NCES)

❑ Data management and data cleaning

❑ Merging and appending multiple datasets to create analytical datasets

Policy Implications

❑ To ensure continued state funding to cover co-pays for reduced price category, and for future expansion of school meals, rigorous evaluations are needed.

❑ Results from our study will provide useful and timely information for policy makers and advocates to improve access to healthy school meals in Arizona.

"With the temporary funding ending after the 2023–24 school year, the food bank worked with the state Legislature to get the $3.8 million added to the state budget"

Acknowledgment:

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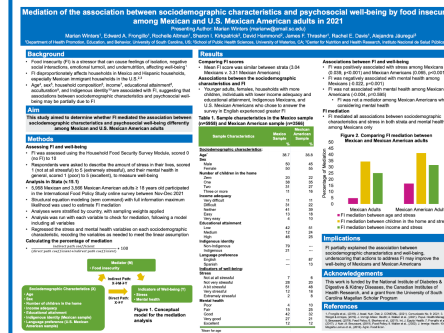
New and recurring food insecurity during and after the COVID-19 pandemic in a nationally representative sample

Marian Winters
University of South Carolina
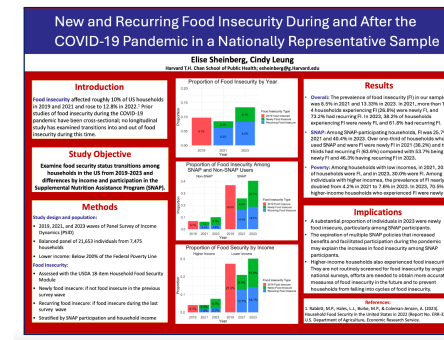
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