

Both Online & In-Person Nutrition Education Improve Breakfast Knowledge, Attitudes & Behaviors of WIC Participants

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Background

- Women, Infants, and Children (WIC) program
 - 8.6 million mothers & children
 - Nutrition during pregnancy & early childhood
- WIC nutrition education
 - Integrated individual & group education
 - Emerging online tools



Background

- Access to internet rapidly increasing
- Use of technology for health behavior change shown improvements in:
 - Knowledge of infant feeding practices
 - Food safety
 - Dietary intake
 - Physical activity
 - Weight management



Objective

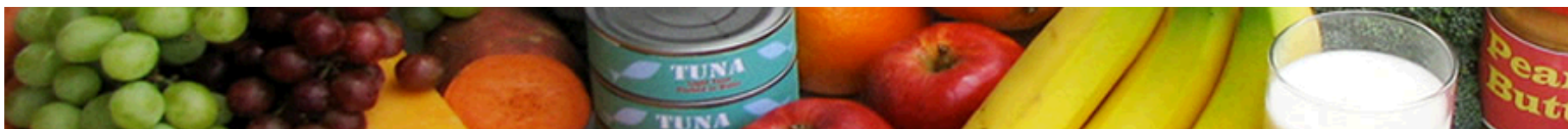
- To examine the impacts of both online and in-person group nutrition education on changes in knowledge, attitudes, and behaviors related to breakfast eating in a randomly selected sample of WIC participants

Methods

- 590 WIC participants from Los Angeles, CA PHFE WIC clinics were randomly assigned to receive:
 - In-person group education (n=359) or
 - Online education (n=231)
 - Challenges with group assignment
- Questionnaires were administered before and after education, and at a 2-4 month follow-up

Methods

- Goals of the breakfast class:
 - Importance of eating breakfast everyday
 - Using WIC foods to make healthy breakfasts
 - Setting personal goals for eating healthier breakfasts
- Additional dietary messages:
 - WIC cereals are healthy cereals
 - Limit juice
- Identical lessons taught in-person & online education



WIC ONLINE NUTRITION EDUCATION

California - PHFE WIC Program

Welcome to the “Easy Breakfasts with WIC Foods” Nutrition Education Lesson

During the next 15-30 minutes, you will learn about the importance of eating breakfast in the morning.

Today's lesson will focus on:

- Reasons to eat breakfast
- Using WIC foods to make healthy breakfasts
- Challenges to eating a healthy breakfast



Continue





WIC ONLINE NUTRITION EDUCATION

California - PHFE WIC Program

Think about this morning...



Did your children have something to eat this morning?

- 1) Yes
- 2) No

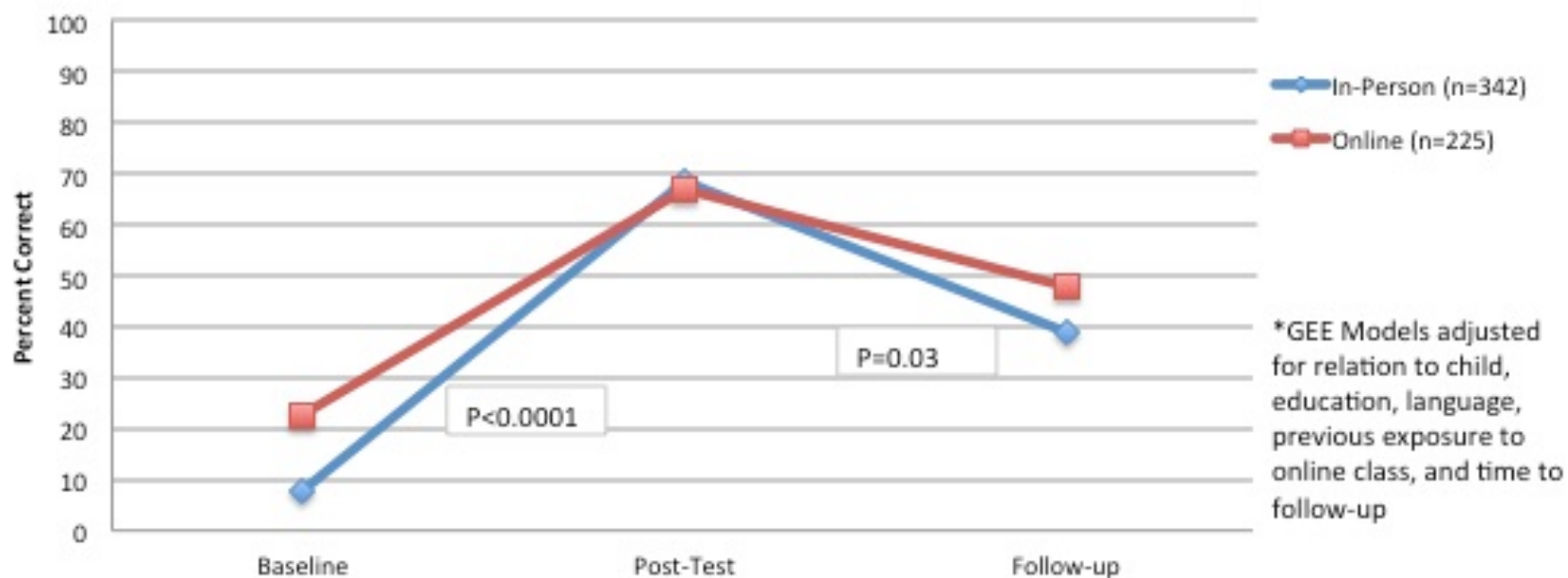


Table 1. Comparison of demographic characteristics for in-person and online education groups of adults with 1- to 5-year olds recruited from Women Infants and Children (WIC)

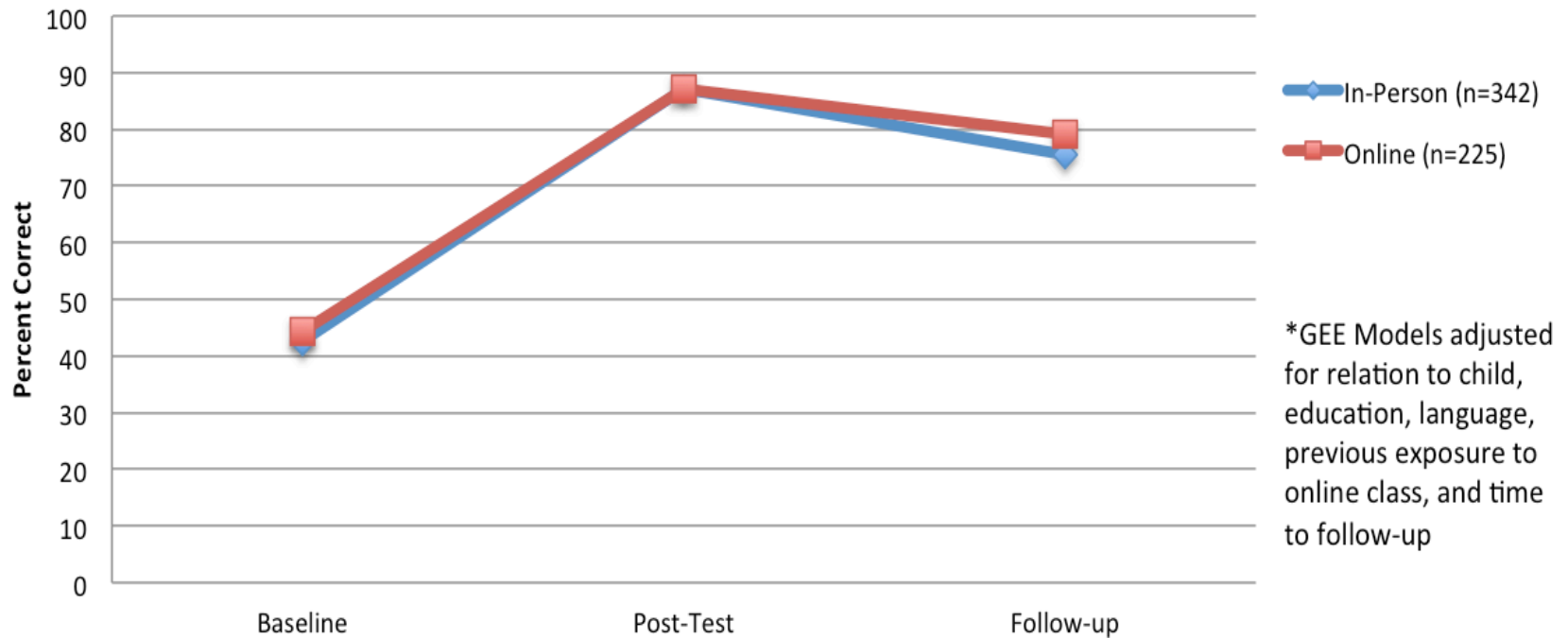
Characteristics (n=590)	In-person (n=359)	Online (n=231)	P-value
Age (n=580) (mean years, SD)	31.85 (7.06)	32.01 (6.27)	0.77
Child Age (n=587) (mean years, SD)	2.35 (1.09)	2.52 (1.11)	0.08
Race (n=587) (n,%)			0.74
White	15 (4.21)	15 (6.49)	
Hispanic	295 (82.87)	190 (82.25)	
African American	14 (3.93)	9 (3.90)	
Asian	24 (6.74)	12 (5.19)	
Other	8 (2.25)	5 (2.16)	
Education (n=585) (n,%)			0.01
Not high school graduate	128 (35.96)	59 (25.97)	
High school graduate and above	228 (64.04)	171 (74.03)	
Relation to child (n=589) (n,%)			0.04
Mother	342 (95.53)	228 (98.70)	
Non-mother	16 (4.47)	3 (1.30)	
Language (n=590) (n,%)			<0.0001
English	175 (48.75)	152 (65.80)	
Spanish	184 (51.25)	79 (34.20)	
Time to Follow-up (n= 590) (mean days, SD)	105.90 (12.47)	93.52 (16.03)	<0.0001
Previous Exposure to Online Class (n=589), (n, % yes)	42 (11.73)	52 (22.51)	0.0005

KNOWLEDGE

Figure 1. How much sugar can WIC cereals have per serving? Knowledge after taking the WIC breakfast class by in-person and online nutrition education groups (n=581)*



**Figure 2. How many oz of juice does WIC recommend per day?
Knowledge after taking the WIC breakfast class by in-person
and online nutrition education groups (n=530)***



ATTITUDES

Table 2. Breakfast-related attitudes at baseline and follow-up by in-person and online nutrition education group

	In-person (n=356)			Online (n=231)		
	Baseline	Follow-up	P-value	Baseline	Follow-up	P-value
Reasons for skipping breakfast in past 30 days						
	Mean (SD)			Mean (SD)		
Lack of time	1.88 (1.05)	1.80 (1.10)	0.22	1.77 (1.14)	1.60 (0.95)	0.02
Lack of enough food at home	1.47 (0.82)	1.40 (0.89)	0.20	1.59 (0.93)	1.26 (0.68)	<0.001
Lack of hunger	1.80 (0.99)	1.69 (1.05)	0.07	1.70 (0.96)	1.52 (0.88)	0.005
Difficulty preparing breakfast	1.17 (0.55)	1.22 (0.84)	0.37	1.26 (0.78)	1.11 (0.51)	0.007

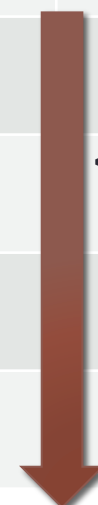


Table 3. Breakfast-related attitudes at baseline and follow-up by in-person and online nutrition education group

	In-person (n=356)			Online (n=231)		
	Baseline	Follow-up	P-value	Baseline	Follow-up	P-value
Self efficacy						
	Mean (SD)			Mean (SD)		
Give child breakfast every morning	2.97 (0.21)	2.99 (0.17)	0.10	2.94 (0.27)	2.99 (0.09)	0.01
Give child a fruit at breakfast every morning	2.79 (0.43)	2.85 (0.40)	0.03	2.76 (0.46)	2.84 (0.40)	0.04
Give child other WIC foods besides fruits and vegetables at breakfast every morning	2.87 (0.37)	2.88 (0.36)	0.50	2.83 (0.45)	2.90 (0.31)	0.03

BEHAVIORS

Table 4. Change in parent-reported breakfast behaviors over the past 7 days by in-person and online nutrition education groups

	In-person (n=341)			Online (n=231)			In-person vs Online change score	In-person vs Online p-value
	Baseline	Follow-up	P-value	Baseline	Follow-up	P-value		
Parent								
	Mean days/week (SD)			Mean days/week (SD)			Mean days/week (SD)	
Eat breakfast	5.91 (1.63)	6.01 (1.48)	0.33	6.02 (1.62)	6.37 (1.18)	0.001	-0.26 (1.73)	0.0007
Child								
Eat breakfast	6.60 (1.18)	6.62 (1.20)	0.82	5.94 (1.26)	6.81 (0.83)	<0.001	-0.85 (1.42)	0.01

Discussion

- Online nutrition education can be an effective supplement to in-person group education
- Breakfast knowledge, attitudes and behaviors improved and maintained 2-4 months later
- English and Spanish-speakers chose how to receive their education differently

Strengths & Limitations

- Strengths

- Large, multi-ethnic sample
- Rigorous evaluation
- Real world study setting

- Limitations

- Differences between online and in-person groups
- In-person instructor variability
- Generalizability

Conclusions

- In-person and online nutrition education are effective in:
 - Increasing knowledge in WIC participants
 - Reducing breakfast skipping
 - Improving other breakfast-related behaviors
- Supports potential usefulness of online education modalities for future WIC services

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Questions

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