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 inperson 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

ID:

Your name and your answers will be kept private.

	You may skip any questions you do not want to answer. There are no right or wrong answers.										
Mark only one answer box x for each question or statement unless it says to mark more than one answer.											
	If you have any questions about this survey, send an e-mail to projects@phfe.org or call 626-856-6650.										
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	TE v		-		are abou	_	•				st child on WIC.
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		clude access							e a WIC	Class C	niner
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		Yes, but I	have no	ot taken	a WIC cla	ss onli	ne bef	ore			
		Yes, and I									
2.	Wh	at year we	ere vou	born?							
			•	_		•					
3.	Wh	at vear wa	s vour	child bo	rn? (Ansv	ver only	v for v	our olde	st child	curren	tly on WIC)
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	_	2010				2011				_	2013
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١.	Wh	at month v	was he	she bo	rn?						
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		1	2	3	4	5	6	7	8	9	10



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





California - PHFE WIC Program

Think about this morning...



Did your children have something to eat this morning?

1) Yes

C 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)

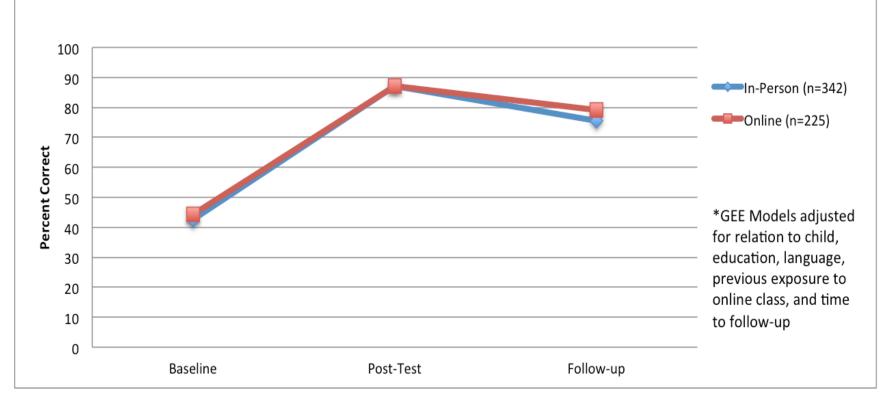
Characteristics (n=590)	In-person (n=359)	Online (n=231)	P-value
Age (n=580) (mean years, SD)	31.85 (7.06)	32.01 (6.27)	0.77
Child Age (n=587) (mean years, SD)	2.35 (1.09)	2.52 (1.11)	80.0
Race (n=587) (n,%) White Hispanic African American Asian Other	15 (4.21) 295 (82.87) 14 (3.93) 24 (6.74) 8 (2.25)	15 (6.49) 190 (82.25) 9 (3.90) 12 (5.19) 5 (2.16)	0.74
Education (n=585) (n,%) Not high school graduate High school graduate and above	128 (35.96) 228 (64.04)	59 (25.97) 171 (74.03)	0.01
Relation to child (n=589) (n,%) Mother Non-mother	342 (95.53) 16 (4.47)	228 (98.70) 3 (1.30)	0.04
Language (n=590) (n,%) English Spanish	175 (48.75) 184 (51.25)	152 (65.80) 79 (34.20)	<0.0001
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)* 100 90 In-Person (n=342) 80 Online (n=225) 70 Percent Correct *GEE Models adjusted P=0.03 for relation to child. 30 education, language, P<0.0001 20 previous exposure to online class, and time to 10 follow-up 0 Baseline Post-Test Follow-up

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-pe	rson (n=356	Online (n=23						
	Baseline	Follow-up	P-value	Baseline	Follow-up	P-value			
Reasons for skipping breakfast in past 30 days									
	Mea (SD			Me (Sl					
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)			On	line (n=23 ²					
	Baseline	Follow -up	P-value	Baseline	Follow- up	P-value	In-person vs Online change score	In- person vs Online p-value		
Parent										
	Mean days/week (SD)			ays/week D)		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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