# MEASURING EATING COMPETENCE: CONGRUENCE BETWEEN TWO SATTER INVENTORIES SUPPORTS SUPPLANTING THE **ORIGINAL VERSION WITH THE LOW-INCOME ADAPTATION**

# PENNSTATE

Learning Codes: 9020 & 6030

#### Abstract

**Background:** Eating competence (EC), a bio-psychosocial cluster of eating/food attitudes and behaviors, is measured with either ecSI or ecSI/LI inventories validated for general or low-income adults, respectively. Twelve items are identical for both versions; 4 are unique to each inventory. Two versions complicate assessment of EC across studies; therefore congruence between them in middle class adults was examined.

**Methods:** Participants (n=132) were parents from 7 private preschools, mostly white, non-Hispanic (89%) with college degrees (85%). Mean age was 35.8 ± 5.3 years. Only responses from the 99 who indicated never or rarely worrying about money for food and/or no current/past history of food assistance were used.

**Results:** Linear regression revealed ecSI score (mean 32.69 ± 6.70) predicted 99.8% of the ecSI/LI score (mean 32.93 ± 6.95). Absolute differences between ecSI and ecSI/LI scores ranged from 0 (28%) to 5 (1%). Scores differed by 1 point for 44%. Only 2 were classified as EC (i.e., total score  $\geq$  32) by one inventory and not the other. Borderline scores were not vulnerable because EC for 6 of the 7 with ecSI/LI scores from 31 to 33 was congruently classified. Examination of each of the 4 unique items affirmed all as equally discrepant. Correlations between versions for total score (r = 0.98) and the 4 survey items (range = 0.32 to 0.71) were significant at ( $P \le 0.001$ ). ecSI/LI was confirmed as more sensitive than ecSI for those with a low-income marker.

**Conclusion:** ecSI/LI can supplant ecSI use in a general population. Renaming the ecSI/LI to ecSI 2.0 is suggested.

#### **Food Acceptance**

Food acceptance skills that enhance dietary variety

#### **Eating Context**

Skills and resources for managing mealtime structure, food selection, and enjoyment of food meal preparation

#### **Internal Regulation**

Internal regulation skills to address energy balance

#### **Eating Attitudes**

Attitudes about eating and

- EC is a bio-psychosocial model consisting of four components that address intrapersonal approaches to eating and food-related behaviors.
- EC is currently measured with two instruments: One for low-income (ecSI/LI), and another for middle-income audiences (ecSI).
- This study was conducted to determine if the low-income version was appropriate for use with general and middle-income audiences.

## Methods

#### Recruitment

Caregivers were recruited from seven preschools in State College, PA. Preschools were selected from locations that served both middle and low-income families.

#### **Data Collection**

Preschool contacts sent study materials home with each child aged 2-5 years. These materials included a letter to parents, informed consent, survey and instructions, and a stamped, self-addressed envelope to return materials. The survey included the items from both the ecSI and ecSI/LI surveys: 12 items are identical to both inventories; 4 are unique to each inventory.

#### Data Analysis

Data were analyzed using SPSS (version 19; IBM, Arkmonk, NY). The four items that differed between the ecSI and ecSI/LI were explored using descriptives, cross-tabs, correlations, and chi square analyses.

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#### Background

ecsi	

						Surveys
ecSI						ecSI/LI
Below are items about YOUR eating. Think about ea the letter that shows how often you think, do, or feel eating. Please choose ONE response for each item	ch one, I that w n.	and th ay abo	nen cho ut YOL	oose J <b>R</b>		Below are items about <b>YOUR</b> eating. Think about each one, and then choose the letter that shows how often you think, do, or feel that way about <b>YOUR</b> eating. Please choose ONE response for each item.
A = Always O = Often S = Sometimes R	- Karer	y N-	- Never	ſ		A = Always O = Often S = Sometimes R = Rarely N = Never
<ol> <li>I am relaxed about eating.</li> </ol>	Α	0	S	R	N	
<ol><li>I am comfortable about eating enough.</li></ol>	Α	0	S	R	Ν	1. I am relaxed about eating. A O S R
3. I have regular meals.	A	0	S	R	N	2. I am comfortable about eating enough. A O S R
<ol><li>I feel it is okay to eat food that I like.</li></ol>	A	0	s	R	N	3. I have regular meals. A O S R
5. I experiment with new food and learn to like it.	A	0	s	R	N	4. I feel it is okay to eat food that I like. A O S R
<ol><li>If the situation demands, I can "make do" by eating food I</li></ol>	A	0	s	R	N	5. I experiment with new food and learn to like it. A O S R
don't much care for. 7 Leat a wide variety of foods	Δ	0	s	R	N	<ol> <li>If the situation demands, I can "make do" by eating food I A O S R don't much care for.</li> </ol>
2. Lam comfortable with my opicyment of food and opting	^	0	•	n B	N	7. I eat a wide variety of foods. A O S R
5. Tam comonable with my enjoyment or lood and eating.		0	3	R	N	8. I am comfortable with my enjoyment of food and eating. A O S R
9. Tassume I will get enough to eat.	A	0	5	ĸ	N	9. I trust myself to eat enough for me. A O S R
10.I eat as much as I am hungry for.	Α	0	S	R	N	10 Leat as much as Lam hungry for <b>AOS</b>
11.I tune in to food and pay attention to myself when I eat.	Α	0	S	R	N	14 I turns in to food and new attention to estima
12.I make time to eat.	Α	0	S	R	Ν	11.1 tune in to food and pay attention to eating. A U S R
13.I eat until I feel satisfied.	Α	0	s	R	Ν	12.1 make time to eat. A O S R
14.I enjoy food and eating.	A	0	s	R	N	13.1 eat until I feel satisfied. A O S R
15.I think about nutrition when I choose what to eat.	А	0	S	R	N	14.1 enjoy food and eating. A O S R
16.I generally plan for feeding myself. I don't just grab	Δ	0	S	R	N	15.I consider what is good for me when I eat. A O S R
food when I get hungry.	~	v		i.		16.I plan for feeding myself. A O S R

iffering between the ecsl and ecsl/LI are in red

### Results

Description of Participants (n=127)			
Characteristic	n (%)		
Participation in food assistance	26 (20)		
program <sup>1</sup>	20 (20)		
Race Ethnicity			
White/Non-Hispanic	117 (89)		
Asian	11 (8)		
Black/African American	2 (2)		
White/Hispanic or Latino	2 (2)		
Education Level			
High School	10 (8)		
2 Year College	9 (7)		
4 Year College	112 (86)		
Worry about money for food			
Never	83 (63)		
Rarely	32 (24)		
Sometimes	12 (9)		
Often	4 (3)		
Always	1 (1)		
Low-Income <sup>2</sup>	31(25)		

<sup>1</sup> Participation in SNAP (Supplemental Nutrition Assistance Program) or WIC (Federal Assistance Program for Women, Infants, and Children) <sup>2</sup> Low-income was defined as participation in a food assistance program, or sometimes, often or always worrying about money for food.



To examine ecSI/LI performance in middle/upper-income parents, results shown below excluded the 31 low-income participants

Comparison of eating competence status denoted by ecSI and ecSI/LI (n=96)				
	EC <sup>1</sup>	Not EC		
ecSI/LI	51(53%)	45 (47%)		
ecSI	49 (51%)	47 (4%)		
<sup>1</sup> EC defined by a ecSI/LI or ecSI score $\geq$ 32				

ecSI/LI and ecSI score differences (n=96)			
ecSI/LI - ecSI score=1			
		n (%)	
	3	5 (5%)	
ecSI Score Higher	2	6 (6%)	
	1	17 (18%)	
	0	27 (28%)	
	1	25 (26%)	
	2	9 (9%)	
ecSI Score Lower	3	5 (5%)	
	4	1 (1%)	
	5	1 (1%)	

<sup>1</sup>Mean difference 0.24 ± 1.55 points



ecSI/LI (n=96)	
Number of Congruent Item Responses	Number of Participants
0	2
1	18
2	24
3	31
4	21

• Suggest renaming ecSI/LI to ecSI 2.0.

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d ecsi	(11 (n = 96))	
EC /LI	n (%)	
	49 (51%)	
	0 (0%)	
	2 (2%)	
/	45 (47%)	

• Most participants (n=94; 98%) were identically categorized (as either EC or not) by the ecSI/LI and ecSI.

- Two people were discrepantly categorized as EC on the ecSI/LI and not the ecSI.
- Mean difference between ecSI/LI and ecSI scores for those with congruent EC categorizations (n=94) was .17 ± 1.5; for those with discrepant EC categorizations (n=2) was  $3.5 \pm 2.1$  (P=.002).

Comparison of responses to the four items differing on the ecSI and ecSI/LI (n= 96)			
ecSl Item	Congruent Responses n (%) <sup>1</sup>	ecSI/LI Item	
I assume I will get enough to eat.	60 (62.5%)	I trust myself to eat enough for me.	
I tune in to food and pay attention to myself when I eat.	58 (60.4%)	I tune in to food and pay attention to eating.	
I think about nutrition when I choose what to eat.	72 (75.0%)	I consider what is good for me when I eat.	
I generally plan for feeding myself. I don't just grab food when I get hungry.	53 (55.2%)	I plan for feeding myself.	

<sup>1</sup> Pearson correlations: r= .43, .62, .71, and .32, respectively. Item correlations all P < .001.

Of a possible 384 responses, 243 (63.2%) were congruent.

# • ecSI/LI can supplant ecSI use in a general population.

#### References

Conclusions •

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