

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



Barbara Lohse, PhD, RD; Kristen Arnold, MS

Department of Nutritional Sciences, The Pennsylvania State University, University Park, PA



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## 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 ≥ 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 ≤ 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.

## Background



- 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, Armonk, NY). The four items that differed between the ecSI and ecSI/LI were explored using descriptives, cross-tabs, correlations, and chi square analyses.

## Surveys

ecSI											
Below are items about YOUR eating. Think about each one, and then choose the letter that shows how often you think, do, or feel that way about YOUR eating. Please choose ONE response for each item.											
A = Always O = Often S = Sometimes R = Rarely N = Never											
1. I am relaxed about eating.	A	O	S	R	N	1. I am relaxed about eating.	A	O	S	R	N
2. I am comfortable about eating enough.	A	O	S	R	N	2. I am comfortable about eating enough.	A	O	S	R	N
3. I have regular meals.	A	O	S	R	N	3. I have regular meals.	A	O	S	R	N
4. I feel it is okay to eat food that I like.	A	O	S	R	N	4. I feel it is okay to eat food that I like.	A	O	S	R	N
5. I experiment with new food and learn to like it.	A	O	S	R	N	5. I experiment with new food and learn to like it.	A	O	S	R	N
6. If the situation demands, I can "make do" by eating food I don't much care for.	A	O	S	R	N	6. If the situation demands, I can "make do" by eating food I don't much care for.	A	O	S	R	N
7. I eat a wide variety of foods.	A	O	S	R	N	7. I eat a wide variety of foods.	A	O	S	R	N
8. I am comfortable with my enjoyment of food and eating.	A	O	S	R	N	8. I am comfortable with my enjoyment of food and eating.	A	O	S	R	N
9. I assume I will get enough to eat.	A	O	S	R	N	9. I assume I will get enough to eat.	A	O	S	R	N
10. I eat as much as I am hungry for.	A	O	S	R	N	10. I eat as much as I am hungry for.	A	O	S	R	N
11. I tune in to food and pay attention to myself when I eat.	A	O	S	R	N	11. I tune in to food and pay attention to myself when I eat.	A	O	S	R	N
12. I make time to eat.	A	O	S	R	N	12. I make time to eat.	A	O	S	R	N
13. I eat until I feel satisfied.	A	O	S	R	N	13. I eat until I feel satisfied.	A	O	S	R	N
14. I enjoy food and eating.	A	O	S	R	N	14. I enjoy food and eating.	A	O	S	R	N
15. I think about nutrition when I choose what to eat.	A	O	S	R	N	15. I think about nutrition when I choose what to eat.	A	O	S	R	N
16. I generally plan for feeding myself. I don't just grab food when I get hungry.	A	O	S	R	N	16. I generally plan for feeding myself. I don't just grab food when I get hungry.	A	O	S	R	N
17. I plan for feeding myself.	A	O	S	R	N	17. I plan for feeding myself.	A	O	S	R	N

\*Items differing between the ecSI and ecSI/LI are in red.

## Results

### Description of Participants (n=127)

Characteristic	n (%)
Participation in food assistance program <sup>1</sup>	26 (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 (49%)

<sup>1</sup> EC defined by a ecSI/LI or ecSI score ≥ 32

### ecSI/LI and ecSI score differences (n=96)

ecSI/LI - ecSI score <sup>1</sup>		n (%)
ecSI Score Higher	3	5 (5%)
	2	6 (6%)
	1	17 (18%)
	0	27 (28%)
	1	25 (26%)
ecSI Score Lower	2	9 (9%)
	3	5 (5%)
	4	1 (1%)
	5	1 (1%)

<sup>1</sup> Mean difference 0.24 ± 3.55 points

## Results

### EC status compared between ecSI and ecSI/LI (n = 96)

EC ecSI	Not EC ecSI	EC ecSI/LI	Not EC ecSI/LI	n (%)
✓		✓		49 (51%)
✓			✓	0 (0%)
	✓	✓		2 (2%)
	✓		✓	45 (47%)



### Number of congruent item responses for the four items differing on the ecSI and ecSI/LI (n=96)

Number of Congruent Item Responses	Number of Participants
0	2
1	18
2	24
3	31
4	21

### Comparison of responses to the four items differing on the ecSI and ecSI/LI (n = 96)

ecSI 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.

## Conclusions

- ecSI/LI can supplant ecSI use in a general population.
- Suggest renaming ecSI/LI to ecSI 2.0.

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