

# The Pediatric Eating Assessment Tool (PediEAT): A Valid and Reliable Tool To Measure Symptoms of a Feeding Problem



Suzanne Thoyre<sup>1a</sup> • Britt Pados<sup>1a</sup> • Jinhee Park<sup>2</sup> • Hayley Estrem<sup>1b</sup> • Cara McComish<sup>1c</sup> • Eric Hodges<sup>1a</sup>

<sup>1</sup>The University of North Carolina at Chapel Hill, <sup>a</sup>School of Nursing, <sup>b</sup>Center for Developmental Science, <sup>c</sup>Speech and Hearing Science; <sup>2</sup>Boston College, School of Nursing

## BACKGROUND

Feeding problems during early childhood are both prevalent and increasing.

Identifying feeding difficulties early and providing treatments that target the underlying problem are critical to the health of the child and family.

A comprehensive, valid, and reliable measure of the symptoms parents observe is an essential element of the advancement of care and research.

## PURPOSE

To present the development and psychometric strength of the Pediatric Eating Assessment Tool (PediEAT), a parent-report measure of feeding problem symptoms in children 6 months to 7 years old.

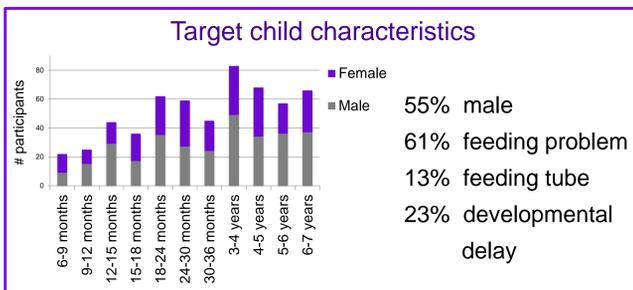
## METHODS

### PediEAT items were developed through a systematic process of content validation

- ◆ **Step 1:** Initial items were derived from parent interviews and evaluation of existing tools.
- ◆ **Step 2:** Clinical and research experts evaluated the clarity and relevance of the items using content validity indices. Items were revised, added and deleted.
- ◆ **Step 3:** Cognitive interviews with two sets of parents (with and without children with feeding problems), gave us feedback on their interpretation of the items. Items were revised, added and deleted.

### Exploratory factor analysis investigated the underlying structure of the set of 97 items

- ◆ 567 parents of children from across the U.S. and 6 countries completed the PediEAT to evaluate its structure and validity.
  - ❖ 95.2% mothers, 90.3% two-parent household
  - ❖ 16% non-white, 9.1% HS education or less
  - ❖ 16.3% <\$40,000 income/year



- ◆ 466 parents also completed a criterion measure, the Mealtime Behavior Questionnaire (MBQ).
- ◆ 2 weeks later, 97 parents repeated the PediEAT to examine stability of the PediEAT across time.
- ◆ Redundant and non-endorsed items were eliminated.
- ◆ Principle component analysis (PCA) with varimax rotation demonstrated the data best fit a 4 component structure with 78 items.
- ◆ Each component (subscales) was examined and named.

## RESULTS

### PediEAT Subscales – Strong Internal Reliability

- 1: Physiologic Symptoms (27 items)  
 $\alpha = .92$
- 2: Problematic Mealtime Behaviors (23 items)  
 $\alpha = .91$
- 3: Selective/Restrictive Eating (15 items)  
 $\alpha = .83$
- 4: Oral Processing (13 items)  
 $\alpha = .83$

### Example Items and Format of the PediEAT

PHYSIOLOGIC SYMPTOMS						
My child...	Never	Almost Never	Sometimes	Often	Almost Always	Always
1. gets watery eyes when eating	<input type="checkbox"/>					
2. gets red color around eyes or face when eating	<input type="checkbox"/>					
3. coughs during or after eating	<input type="checkbox"/>					
4. sounds gurgly or like they need to cough or clear their throat during or after eating	<input type="checkbox"/>					

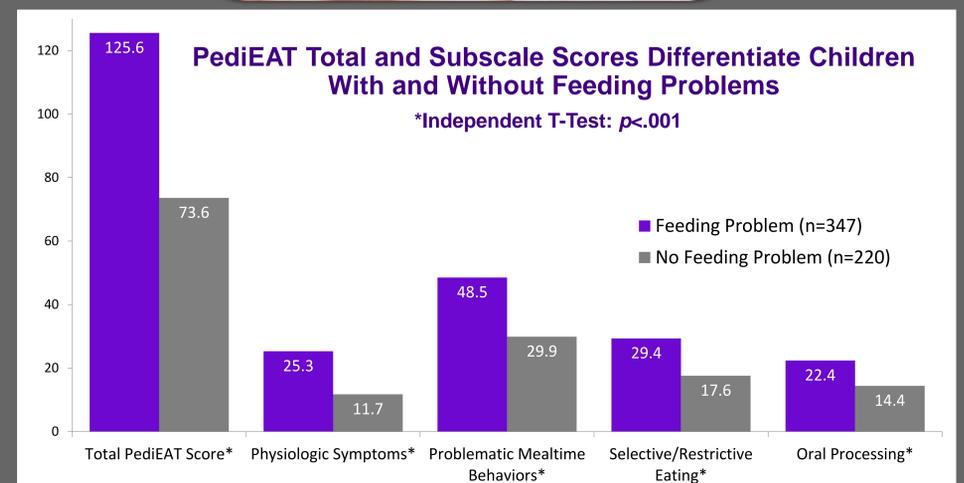
### Established Construct Validity with the MBQ

	PediEAT Total Score	Physiologic Symptoms	Problematic Mealtime Behaviors	Restrictive/Selective Eating	Oral Processing
MBQ Total Score	.774	.577	.770	.459	.496
Subscale 1: Food Refusal/ Avoidance	.586	.308	.810	.257	.261
Subscale 2: Food Manipulation	.666	.602	.389	.486	.668
Subscale 3: Mealtime Aggression/Distress	.634	.484	.615	.388	.405
Subscale 4: Choking/Gagging/ Vomiting	.631	.756	.268	.538	.434



### Strong Temporal Stability Across 2 Weeks

	Test 1 M (SD)	Test 2 M (SD)	<i>r</i>
Total PediEAT Score	107.85 (45.75)	121.30 (42.60)	.948
Physiologic Symptoms	19.89 (15.88)	19.32 (15.50)	.919
Problematic Mealtime Behaviors	42.39 (18.14)	45.25 (16.02)	.878
Selective/Restrictive Eating	24.67 (11.39)	36.56 (9.71)	.869
Oral Processing	20.90 (10.37)	20.18 (8.99)	.913



## DISCUSSION

- Strengths:
  - High representation of feeding problems among the sample
  - Strong psychometrics
  - Discriminates among children with and without feeding problems
  - Valid for a wide age range with lower bounds of 6 months
  - Physiologic Symptom subscale is unique and factored strongest
- The PediEAT joins 3 other parent-report tools developed by the Feeding Flock Research Team to advance the science of feeding.

### Next Steps:

- Age-norming the PediEAT

## CONCLUSION

The PediEAT is a valid and reliable measure of symptoms of feeding problems in young children from 6 months to 7 years.

Sufficient psychometric properties warrant use of the PediEAT in research and clinical practice to measure the severity of feeding symptoms, identify at-risk children, monitor treatment, and guide interventions.

### Acknowledgements

This study was supported by UNC School of Nursing Fox Professorship funds and SPARK (Support Pilots for Advancing Research & Knowledge) Grant. We would like to thank all of the families, clinicians, and researchers who have supported and encouraged our efforts.

