The Neonatal Eating Assessment Tool (NeoEAT): Development & Content Validation

Britt Pados1a • Suzanne Thoyre1a • Hayley Estrem1b • Jinhee Park2 • Cara McComish1c
1The University of North Carolina at Chapel Hill, 2School of Nursing, 3Center for Developmental Science, 4Speech and Hearing Science; 2Boston College, School of Nursing

BACKGROUND

◆ Feeding difficulty is common in first 6 mos.
◆ Early identification is critical for optimal development.
◆ Currently, no valid and reliable assessment tools for identification of infants in need of referral (Pados, Park, Estrem, & Awotwi, 2016).

PURPOSE

To develop and content validate a parent-report tool for the assessment of feeding in infants 0-6 months old.

METHODS

NeoEAT was developed in 4 Phases:

Phase 1 – Item Generation:
◆ Initial items were derived from 4 sources.
  ◦ Items on 21 available assessment tools
  ◦ Parent descriptions of infant feeding behaviors
    ◦ Online survey of 29 parents of infants < 7 mos about their infant’s feeding behaviors.
    ◦ Secondary analysis of interviews with 12 parents of children 6 mos – 5 yrs old with a diagnosed feeding problem; Descriptions of feeding behaviors in the first 6 months of life.
◆ Directed content analysis for common attributes of problematic feeding in first 7 months.
◆ Items generated with preface “My baby …”

Phase 2 – Content Validation with Professionals:
◆ Professionals invited to anonymous survey.
  Rank items on 4-point scale for clarity & relevance (1=low, 4=high).
◆ Content Validity Indices (CVI) calculated at scale-level & item-level for relevance and clarity.
◆ Items with CVI < .78 reviewed by team.

Phase 3 – Content Validation with Parents:
◆ Cognitive interviews with parents of infants < 7 months old (with and without feeding difficulties).
◆ Explored parent understanding of items and how decisions were made about response choices.
◆ Interviews transcribed and confirmed by second team member. Item-by-item analysis by team.

Phase 4 – Readability Testing:
◆ Readability tested using www.readability-score.com

RESULTS

Phase 1 – Item Generation
Examples of Attributes & NeoEAT Items Generated

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Item Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dehydrated and/or undernourished</td>
<td>My baby eats enough to have at least 6 wet diapers per day (24 hours).</td>
</tr>
<tr>
<td>Lack of hunger or thirst signs (parent perception).</td>
<td>My baby lets me know when he/she is hungry or thirsty.</td>
</tr>
<tr>
<td>Symptoms of aspiration (congestion when eating, chest rattle, unable to clear)</td>
<td>My baby sounds gurgly or like they need to cough or clear their throat during or after eating.</td>
</tr>
</tbody>
</table>

Phase 2 – Content Validation with Professionals:
9 Professionals completed survey
◆ 4 RNs (2 also LCs), 1 NP, 4 SLPs
◆ All current clinical practice, 3 researchers
◆ Scale-level CVI acceptable for clarity (.90) and relevance (.93)
◆ 19 items had item-level CVI < .78
◆ CVI data & qualitative data considered:
  ◦ 57 items retained, 38 revised, 31 deleted, 2 added
  ◦ Changed to breastfeeding-forward language

Phase 3 – Content Validation with Parents:
16 Parents completed the interview
◆ 7 infants with feeding difficulty, 3 with concerns, 6 feeding well
◆ Child age average 3.59 mos (0.6 – 6.67 mos)
◆ 49 items retained, 28 revised, 20 deleted, and 12 added.
◆ Based on parent feedback, 3 versions of the NeoEAT were created for different feeding methods:
  ◦ NeoEAT: Breast-feeding – 72 items
  ◦ NeoEAT: Bottle-feeding – 74 items
  ◦ NeoEAT: Breast- and Bottle-feeding - 89 items

Phase 4 – Readability Testing

<table>
<thead>
<tr>
<th>NeoEAT Version</th>
<th>Reading Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>NeoEAT: Breast-feeding</td>
<td>5.1</td>
</tr>
<tr>
<td>NeoEAT: Bottle-feeding</td>
<td>5.1</td>
</tr>
<tr>
<td>NeoEAT: Breast- and Bottle-Feeding</td>
<td>5.3</td>
</tr>
</tbody>
</table>

DISCUSSION

◆ The NeoEAT is a content validated parent-report assessment of feeding in infants less than 7 months old.
◆ Can be used with both breast- and bottle-feeding infants.
◆ Intended for use by clinicians and researchers to:
  ◦ Identify infants in need of specialty assessment & treatment
  ◦ Tailor treatment strategies
  ◦ Monitor progress with feeding therapies

FUTURE DIRECTIONS

◆ Psychometric testing & norm-referencing of the NeoEAT with a large sample (~500 infants) is underway.
◆ Epidemiologic study of the prevalence of feeding difficulties in first 6 months of life.

Acknowledgements
This study was supported by the American Nurses Foundation through a grant from the Academy of Neonatal Nursing and the Foundation for Neonatal Research and Education. We would like to thank all of the families, clinicians, and researchers who have supported and encouraged our efforts.