Validation of the Child Care Ecology Inventory: Challenges of Measuring Quality in Home-Based Child Care Settings

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The Child Care Ecology Inventory (CCEI)

**Purpose of the Measure**

- To measure the quality of home-based child care settings for promoting social competence in preschool-aged children.
- To evaluate outcomes of a professional development program.
- To provide consultation “coaching” feedback to home-based child care providers (goal development & measure progress towards goals).

**Implications**

- Measure practices that are associated with children’s social outcomes.
- Measure relevant to home-based child care (social validity, utility).
- Measure is sensitive to change.
- Measures specific practices that are malleable (can be taught/learned).
Conceptual Model: Child Care Features for Promoting Positive Social Development

Child Care Environment
- Enrichment
- Organization
- Planned Activities & routines

Caregiver Practices
- Responsiveness
- Proactive
- Monitoring
- Positive Attention
- Teaching

Positive social development in preschool-age children

School readiness: Social competence
Procedures – Decisions & Issues

• Who completes the measure?
  • Objective observer?
  • Supervisor?
  • Self assessment?

• What is an appropriate scale for the measure?
  • Dichotomous: yes/no
  • Categorical: 0 = not at all in place to 3 = consistently in place

• Balance between desired detail of measure and feasibility
  • Training costs and time
  • Time to complete the assessment
CCEI data is combined from two evaluation studies (baseline)

- 198 child care homes in seven Oregon counties
- 98% of care providers were female
- 67% Caucasian, 11% Hispanic or Latino, 6% African-American, 4% Asian/Pacific Islander, 1% American Indian, 5% multi-racial, 7% unknown or other race.
- 20% had High School diploma or GED, 49% had some college, 28% had an AA degree or higher
- 60% provided child care by themselves
## Challenge:
### Variance & Reliability of Constructs

<table>
<thead>
<tr>
<th>CCEI Scale</th>
<th># Items</th>
<th>Mean</th>
<th>SD</th>
<th>Item Reliability Alpha*</th>
<th>Rater Reliability ICC**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enriched Environment</td>
<td>6</td>
<td>2.07</td>
<td>.61</td>
<td>.88</td>
<td>.65</td>
</tr>
<tr>
<td>Organized Environment</td>
<td>6</td>
<td>1.81</td>
<td>.58</td>
<td>.83</td>
<td>.55</td>
</tr>
<tr>
<td>Planned Activities/Routines</td>
<td>8</td>
<td>1.75</td>
<td>.56</td>
<td>.86</td>
<td>.61</td>
</tr>
<tr>
<td>Monitoring</td>
<td>4</td>
<td>2.04</td>
<td>.52</td>
<td>.72</td>
<td>.60</td>
</tr>
<tr>
<td>Positive Attention</td>
<td>5</td>
<td>1.85</td>
<td>.52</td>
<td>.77</td>
<td>.48</td>
</tr>
<tr>
<td>Promoting Social Skills</td>
<td>4</td>
<td>1.81</td>
<td>.71</td>
<td>.86</td>
<td>.50</td>
</tr>
<tr>
<td>Teaching Rules</td>
<td>5</td>
<td>1.75</td>
<td>.64</td>
<td>.88</td>
<td>.30</td>
</tr>
</tbody>
</table>

Those in red, range = 0-3.  
*Good internal consistency > .70.  
**ICC: .21-.40 = fair, .41-.60 = moderate, .61-.80 = substantial, > .80 = nearly perfect.
Are quality practices measured associated with child behavior?

<table>
<thead>
<tr>
<th>Home-Based Child Care Quality</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s negative behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children-Caregiver Ratio</td>
<td>.17</td>
<td>.022</td>
</tr>
<tr>
<td>Organized Environment</td>
<td>-.21</td>
<td>.015</td>
</tr>
<tr>
<td>Teaching Rules</td>
<td>-.13</td>
<td>.124</td>
</tr>
<tr>
<td>( F(4,169) = 4.86, p &lt; .001, )  ( \text{adjusted} \ R^2 = .08 )</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Children’s Positive Behavior           |     |      |
| Planned Activities/Routine             | .33 | <.001|
| Positive Attention                     | .33 | <.001|
| \( F(4,190) = 26.17, p < .001, \)  \( \text{adjusted} \ R^2 = .34 \) |
Is the measure relevant for home based child care?

- Caregivers who had more preschool-age children and greater levels of stress because of child problem behaviors were more likely to participate in the coaching consultation which involved CCEI data-based goal setting.

- 52% of child care providers reported that the coaching was very helpful, 35% reported that it was helpful, 14% reported that it was somewhat helpful, and none reported that it was not helpful.
Is the measure sensitive to change?

**CCEI Monitoring**

Visibility, scanning all areas, circulates, proximity to children needing support/assistance.
Does the CCEI measure specific malleable practices?

- In addition to the main effects on caregiver monitoring

- Dosage effects: those who attended workshops plus the consultation and booster compared to those who did not attend the booster made greater improvements in:
  - Enriched Environment
  - Planned Activities/Routines
Challenge: understanding lack of change.

- When effects are not found, how to disentangle whether the measure is not sensitive to change or the professional development was not effective in producing changes in practices?
- Environmental practices are more difficult and costly to change.
- Specific caregiver practices vary from day to day
  - They are influenced by intrapersonal and context factors (mood, child behavior, the weather).
  - Feasibility of obtaining a representative sample
Challenges in Home-based Care:

Variety of ages

- Caregivers typically take care of children of different ages: infants, toddlers, preschoolers, and school-age.
- Quality environments and caregiving practices differ for children of differing developmental levels.
- Little research specifies quality for mixed-age groups.
- Preliminary development and testing of an Infant-CCEI has taken place.
Challenges in Home-based Care:
The child care is their home

- How to arrange the environment that works well for both. Separate spaces or integration of space? Little research on the ideal solution.
- The need to develop trust: issues of strangers (assessors) coming into their home.
- “Are you here to help me make improvements or are you here to find faults and shut me down”
Challenges in Home-based Care:
The majority provide care by themselves.

- Impacts measurement of monitoring
- May impact amount of time spent in transitions
- Likely to impact caregiver’s energy and quality of practices at the end of the day (there is no such thing as “break time”).
- Allows for more flexible hours that matches parents needs, yet can impede caregivers’ ability to make progress on their data-based goals.
Home-based child care providers appreciate your attention to these complex issues.

Thank-you!
References


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