Promoting self-regulation in toddlers born preterm – a parent training program

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BACKGROUND

• Prevalence: ca. 9% of infants are born premature (< 37 weeks of gestational age) (Beck et al., 2010; IQTIG Qualitätsreport 2015, 2015; Pöschl, 2017)

• Very preterm born children have an increased risk for adverse development: self-regulation (SR), cognitive & attentional deficits (Aarnoudse-Moens et al., 2009; Anderson et al., 2011; Arpi & Ferrari, 2013; Bhutta, Cleves, Casey, Cradock & Anand, 2002; Mulder et al. 2009)
BACKGROUND

- To develop self-regulation, children largely depend on parental co-regulation (CR) strategies (Fay-Stammbach et al. 2014).

- Scaffolding & Sensitivity:
  - **Sensitive parenting** may act as a protective factor (Jaekel, Pluess, Belsky, & Wolke, 2015; Ravn et al., 2011; Treyvaud et al., 2009; Wolke, Jaekel, Hall, & Baumann, 2013).
  
- **Parental scaffolding** predicts better executive functioning, problem-solving, verbal and cognitive skills (e.g. Landry, Miller-Loncar, Smith, & Swank, 2002; Lowe, Erickson, MacLean, Schrader, & Fuller, 2013; Lowe et al., 2014).

- Parents of Preterm Children show less scaffolding behavior and sensitive interaction with their child (Choe et al., 2013, Hoffmann et al., 2006).
METHODS

- Experimental 2x3 design
- 148 parent-child-dyads:
  - 50 preterm
  - 98 full-term
- Children’s age: 24-36 month
- Randomly assigned to:
  (a) Scaffolding Training
  (b) Scaffolding & Sensitivity Training
  (c) Control group (Stressmanagement)

MEASURES

- Pre-/ post-test/ follow-up assessment
- Multimethod approach (parent & child)
  - Bayley Scales-III: cognitive scale (Reuner & Rosenkranz, 2014)
  - Video-observation of parent-child interaction during problem-solving (Gärtner et al., under review)
  - Self-regulation tasks: Delay of gratification and Go No-Go task (Voigt et al. 2013)
  - Questionnaires: e.g. BRIEF-P, ECBQ, CBCL, PSI, ...
<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Preterm (PT)</th>
<th>n</th>
<th>Full-term (FT)</th>
<th>( \chi^2/t )</th>
<th>( p )</th>
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</thead>
<tbody>
<tr>
<td><strong>Parents’ age [years] M (SD)</strong></td>
<td>50</td>
<td>37.64 (5.61)</td>
<td>98</td>
<td>35.56 (4.52)</td>
<td>2.81</td>
<td>.006</td>
</tr>
<tr>
<td><strong>Parents’ sex [female] %</strong></td>
<td>50</td>
<td>80.0</td>
<td>98</td>
<td>85.7</td>
<td>0.80</td>
<td>.372</td>
</tr>
<tr>
<td><strong>Parents with twins %</strong></td>
<td>39</td>
<td>33.3</td>
<td>91</td>
<td>1.1</td>
<td>33.37</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Socioeconomic status M (SD)</strong></td>
<td>39</td>
<td>16.30 (3.19)</td>
<td>91</td>
<td>16.58 (3.40)</td>
<td>0.48</td>
<td>.633</td>
</tr>
<tr>
<td><strong>University-entrance diploma %</strong></td>
<td>50</td>
<td>68.0</td>
<td>97</td>
<td>90.7</td>
<td>20.19</td>
<td>&lt;.001</td>
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<tr>
<td><strong>Child’s (corrected) age [months] M (SD)</strong></td>
<td>50</td>
<td>27.35 (3.59)</td>
<td>98</td>
<td>27.44 (3.27)</td>
<td>0.16</td>
<td>.875</td>
</tr>
<tr>
<td><strong>Child’s sex [female] %</strong></td>
<td>50</td>
<td>50.0</td>
<td>98</td>
<td>39.80</td>
<td>1.41</td>
<td>.236</td>
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<tr>
<td><strong>Gestational age [weeks] M (SD)</strong></td>
<td>50</td>
<td>30.08 (3.77)</td>
<td>97</td>
<td>39.42 (1.28)</td>
<td>17.01</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Birth weight [g] M (SD)</strong></td>
<td>50</td>
<td>1408.9 (676.93)</td>
<td>98</td>
<td>3391.93 (467.81)</td>
<td>18.58</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Child’s cognitive performance at 24 months of age (Bayley-III) M (SD)</strong></td>
<td>48</td>
<td>93.65 (16.91)</td>
<td>98</td>
<td>99.69 (13.66)</td>
<td>2.32</td>
<td>.022</td>
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</tbody>
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INTERVENTION
## INTERVENTION

<table>
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<tr>
<th>Sessions (à 180 min.)</th>
<th>Combined training: Parental scaffolding and sensitivity</th>
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<tbody>
<tr>
<td><strong>Session 1</strong></td>
<td>• Development of self-regulation&lt;br&gt;• Co-and self-regulation: parental scaffolding and sensitive parenting&lt;br&gt;• Zone of proximal development (Vygotsky)&lt;br&gt;• Child competence and development</td>
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<td><strong>Session 2</strong></td>
<td>• Play and self-regulation&lt;br&gt;• Scaffolding means: Questions &amp; hints&lt;br&gt;• Reading the child’s signals</td>
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<td><strong>Session 3</strong></td>
<td>• Emotions and emotion-regulation in early childhood&lt;br&gt;• Mirroring and labelling emotions&lt;br&gt;• Scaffolding means: Instructions, feedback, explanations and transfer</td>
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<td><strong>Session 4</strong></td>
<td>• Setting boundaries sensitively vs. transferring responsibility&lt;br&gt;• Handling anxiety&lt;br&gt;• Summary and reflection on the learned strategies</td>
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RESULTS

T-Test: FT: $M = 5.18$, $SD = 0.72$, $n = 93$ / PT: $M = 5.15$, $SD = 0.66$, $n = 47$

$t(138) = 0.270$   $p = 0.788$
RESULTS

Motivation to transfer

>> T-Test: FT: $M=5.10$, $SD=0.82$, n=96 / PT: $M=5.15$, $SD=0.69$, n=49
   $t(112,48)=0.377$, $p=.707$
DISCUSSION

Limitations
• Small sample of preterm children and parents
• Current data is limited to parental self-report
• Mostly highly educated parents with high SES

>> Further analyses will include observational Data on children’s self-regulation

Conclusion
• High reported acceptance and motivation to transfer for all three training conditions (for both FT and PT parents).
• Parent training to promote self regulation seem to be a promising approach
THANK YOU FOR YOUR ATTENTION!