Parental Occupational Executive Training (POET): A unique intervention model for improving daily functioning of young children with ADHD symptoms

Carmit Frisch PhD ¹ Emanuel Tirosh MD ³, Tsolfia Deutsh-Castel MD² & Sara Rosenblum PhD¹

¹. The laboratory of Complex Human Activity and Participation (CHAP) Department of Occupational Therapy, Faculty of Social Welfare & Health Sciences, University of Haifa, Israel ². child Development Center – Maccabi HMO, Northern district, Haifa, Israel ³. The Hannah Khoushy Child Development Center, Bnai Zion Medical Center, The Rappaport Family Faculty of Medicine, Haifa, Israel
Outline

• Background
  ✓ Attention Deficit Hyperactive Disorder (ADHD)
  ✓ Executive Functions
  ✓ Parents Training
  ✓ Parental Occupational Executive Training (POET)

• Current study
  ✓ Rational & hypotheses
  ✓ Research questions and methods
  ✓ Research findings
  ✓ Discussion
Attention Deficit Hyperactivity Disorder (ADHD)

• Incidence of 5-10%.

• A persistent pattern of inattention and/or hyperactivity-impulsiveness which decrease daily functioning & development (APA, 2013)

• For preschool aged children (4–5 years of age), evidence-based parent and/or teacher administered behavior therapy are the first line treatment (AAP, 2011)
ADHD & Executive functions

• **Executive Functions (EFs)** - a major mechanism affecting daily function and behavior of preschoolers with ADHD symptoms (Barkley, 1997; Brown, 2006)

• Well developed EFs enable **self control** (Barkley, 1997; Brown, 2006)

• Delayed EFs cause functional impairments, already at 3-4 y (Thorell, 2007)

• **Early interventions, should aim at coping with compromised EFs**
Parents Training

• **Parents Training (PTs)** programs have good efficacy (Gleason, 2013)

• Parents are the central ‘contextual factor’ in their children’s lives (Rosenbaum & Gorter, 2012)

• Published PTs for preschoolers with ADHD focus on enhancing positive family interactions, child's behaviors and consistent limit setting. (Bor, Sanders & Markie-Dadds, 2002; Jones, et al., 2008)
The POET’s Theoretical basis

1. Hybrid neuropsychological model of Executive Functions
   (Barkley, 1997): EFs’ implications on daily functions

2. Occupational Performance Coaching
   (OPC; Graham, Rodger, & Ziviani, 2009): structure of sessions

3. International Classification of Functioning Disability, and Health
   (ICF; WHO, 2001): contexts and additional skills
Intervention’s structure

• Defining intervention goals

• Analyzing three dimensions that may influence child’s daily functioning:
  ✓ Child himself: EFs, additional abilities & characteristics
  ✓ Occupation: sequence, demands, needed adaptations
  ✓ Environment: human & non-human aspects

• Developing a plan for implementation during the following week, examination, generalization
Study’s objectives & hypotheses

• **Objectives:** To investigate the POET’s feasibility and efficacy

• **Hypotheses:**
  1. At least 75% of the families will: (a) Arrive all the intervention sessions, (b) Report the implementation of the training
  2. **Following the intervention** parents will report significant improvement in:
     - **Parents:** Knowledge and abilities (2 questions)
     - **Children:** Function (COPM), EFs (BRIEF, EFORTS), ADHD symptoms (CPRS)
  3. Changes will be maintained up to the 1st & 2nd follow-ups
  4. No significant changes will occur during the waiting phase
Study’s methods

• **Population:** Parents of 72 children aged 4-7y, with ADHD symptoms (according to CPRS, CTRS, & a DSM based questionnaire)

• **Method:** A controlled, multi-center trial, 17 trained occupational therapists, public child developmental centers & private clinic settings

• **Reliability between researchers**
Study’s methods (cont.)

- **Excluding:** Children & parents with emotional / behavioral diagnoses, additional treatment, special education
- **Groups:** Study (n=39) and Comparison (n=33)
- **2 Ethic committees:** Haifa University, Maccabi Healthcare Services
- **Intervention Process:** 8-10 personalized, weekly sessions (45 min), 4 measures, a mixed method & cross-over design
Results - feasibility

• 98.6% of the families completed the intervention process and participated in at least two measures.
• 80.5% - 94.4% of the families reported implementation of the training up to the seventh session.
Results – crossover design

• No significant changes occurred over waiting period in scores of comparison group.
• Significant differences were found between measure 2 of the study group (post intervention) and measure 2 of the comparison group (post waiting) for the tools
  ✓ ‘Knowledge' \( [t(70)=5.7, p<.001] \)
  ✓ ‘Skills' \( [t(70)=6.7, p<.001] \)
  ✓ COPM \( [t(61)=9.82, p<.001] \)
  ✓ EFORTS \( [t(66)=3.83, p<.001] \)
Results - efficacy

• **Significant differences occurred** in both groups in all measures following the intervention, reflecting improvement in the children’s:
  
  ✓ **Occupational performance (COPM)**  
  \[F(6,180) = 37.07, p < .001, \eta^2 p = .55, \text{OP}=1\]
  
  ✓ **Management of daily routines (EFORTS)**  
  \[F(2, 51) = 27.78, p < .001, \eta^2 p = .52, \text{OP}=1\]
  
  ✓ **Executive functions (BRIEF/P)**  
  \[F(2, 46) = 12.91, p < .001, \eta^2 p = .36, \text{OP}=1\]
  
  ✓ **ADHD symptoms (CPRS)**  
  \[F(12,176) = 2.71, p = .002, \eta^2 p = .16, \text{OP}=.99\]
Results (cont.)

• Significant changes were also revealed in the parents' perception of:
  ✓ Their ability to understand their children's difficulties
    $F(2, 53) = 40.41, p < .001, \eta^2 p = .6, \text{ OP}=1$
  ✓ Their capability to assist them in their daily functioning
    $F(2, 53) = 45.21, p < .001, \eta^2 p = .63, \text{ OP}=1$

• All changes were maintained throughout the follow-up measures

• Some scores even continued to further improve
Children’s daily challenges

ADL
- Morning routine
- Evening routine
- Eating / Meals
- Use of objects
Discussion

• Findings suggest that the POET is effective, at least in the short term.

• Similar benefits of parental coaching were found in other studies (Graham, 2010; Dunn at all., 2012; Foster, et al, 2013)

• The POET is unique in:
  – Focusing on the mechanism of EFs
  – Being parental based, short-term & evidence based
  – Being tailored for the possible parental weakness

• Limitations & future directions:
  Larger samples and longitudinal studies; comparison intervention and RCTs.
Thank you for listening!

Carmitfr@gmail.com