Integrating Non-Pharmacological Interventions in ADHD Treatment

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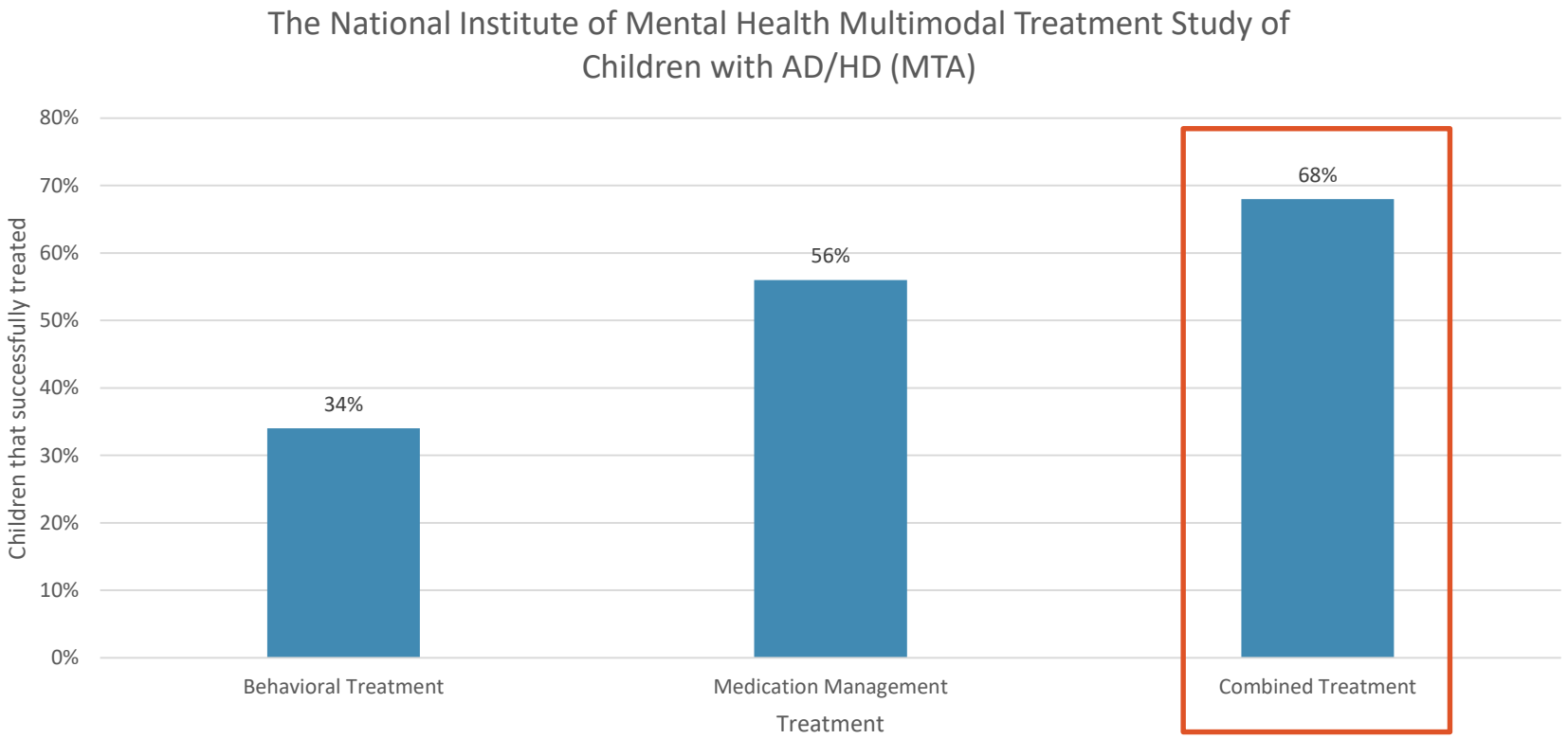
Agenda

1. Importance of Non-Pharmacological Interventions in ADHD Treatment
2. An overview of CPG-ADHD Program
3. Student support
   - Occupational therapy group
   - Physiotherapy group
   - Speech therapy group
4. Parent / Carer support
5. Concluding remark

IMPORTANCE OF NON-PHARMACOLOGICAL INTERVENTIONS IN ADHD TREATMENT

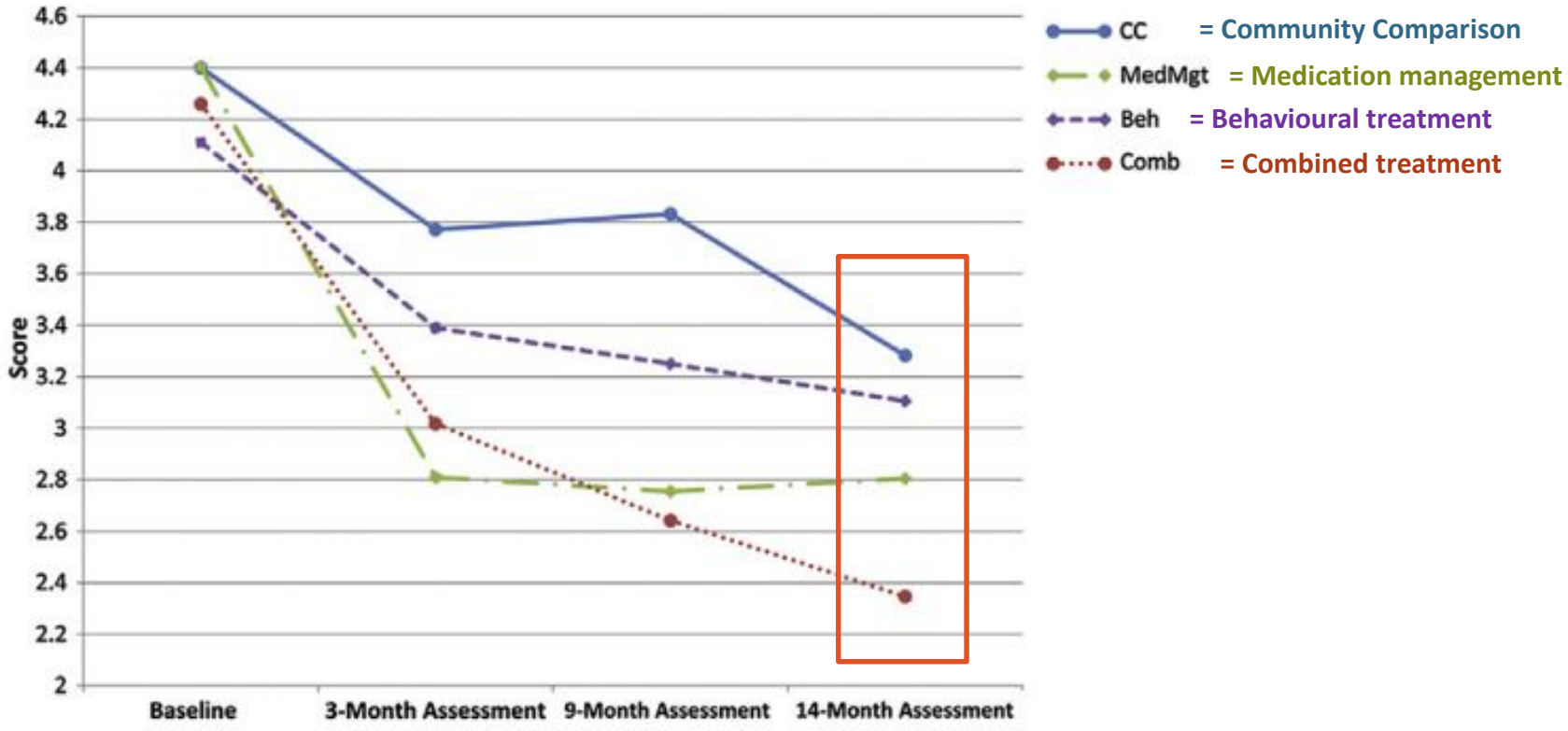
Importance of Non-Pharmacological Interventions in ADHD Treatment



(Swanson et al., 2001)

Importance of Non-Pharmacological Interventions in ADHD Treatment

Parent-reported irritability response to multimodal treatment in the 4 treatment groups



(Fernández de la Cruz, L. et al., 2015)

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Importance of Non-Pharmacological Interventions in ADHD Treatment

- Meta-analysis by Purdie, Hattie & Carroll (2002)
  - Examine **74 studies** assessing the effectiveness of different intervention approaches on the **behavioural**, **cognitive** and **social functioning** of individuals with ADHD

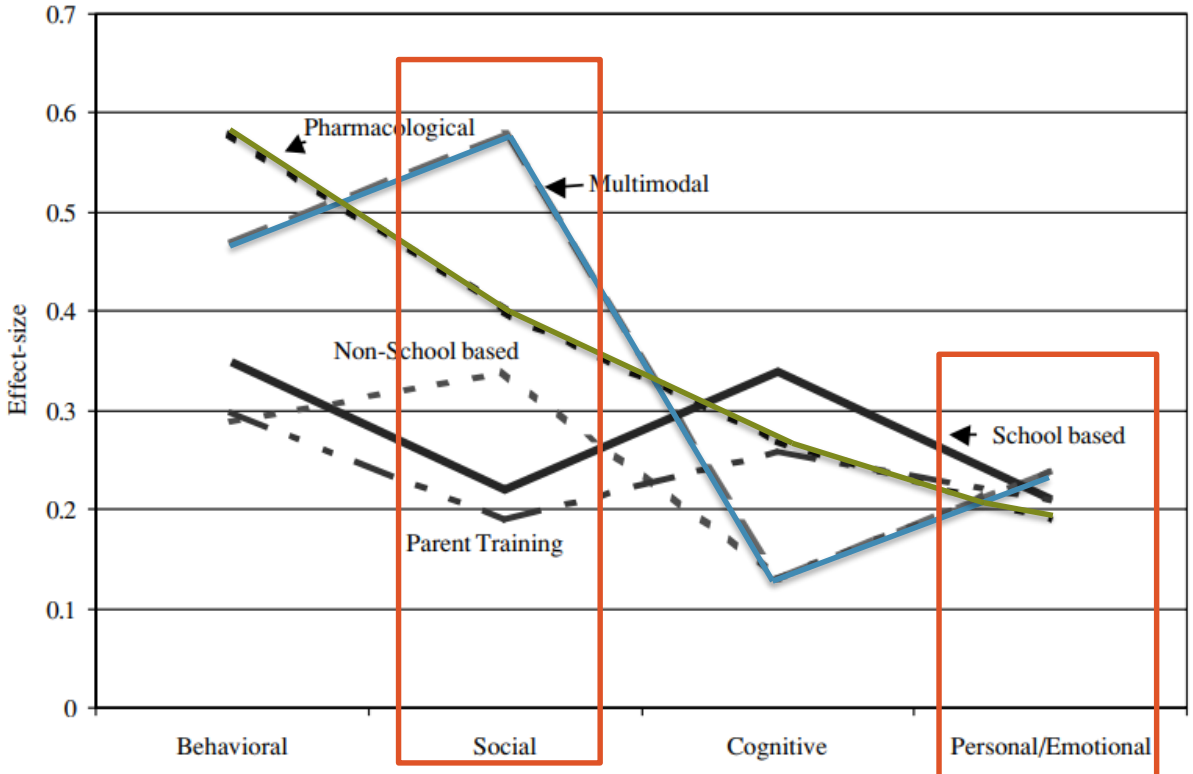

FIGURE 2. *Mean effect sizes for four outcome types by type of intervention.*

TABLE 1 Summary of KASs for Diagnosing, Evaluating, and Treating ADHD in Children and Adolescents

KASs	Evidence Quality, Strength of Recommendation
KAS 1: The pediatrician or other PCC should initiate an evaluation for ADHD for any child or adolescent age 4 years to the 18th birthday who presents with academic or behavioral problems and symptoms of inattention, hyperactivity, or impulsivity.	Grade B, strong recommendation
KAS 2: To make a diagnosis of ADHD, the PCC should determine that *DSM-5* criteria have been met, including documentation of symptoms and impairment in more than 1 major setting (ie, social, academic, or occupational), with information obtained primarily from reports from parents or guardians, teachers, other school personnel, and mental health clinicians who are involved in the child or adolescent's care. The PCC should also rule out any alternative cause.	Grade B, strong recommendation
KAS 3: In the evaluation of a child or adolescent for ADHD, the PCC should include a process to at least screen for comorbid conditions, including emotional or behavioral conditions (eg, anxiety, depression, oppositional defiant disorder, conduct disorders, substance use), developmental conditions (eg, learning and language disorders, autism spectrum disorders), and physical conditions (eg, tics, sleep apnea).	Grade B, strong recommendation
KAS 4: ADHD is a chronic condition; therefore, the PCC should manage children and adolescents with ADHD in the same manner that they would children and youth with special health care needs, following the principles of the chronic care model and the medical home.	Grade B, strong recommendation
KAS 5a: For preschool-aged children (age 4 years to the sixth birthday) with ADHD, the PCC should prescribe evidence-based PTBM and/or behavioral classroom interventions as the first line of treatment, if available.	Grade A, strong recommendation for PTBM
Methylphenidate may be considered if these behavioral interventions do not provide significant improvement and there is moderate-to-severe continued disturbance in the 4- through 5-year-old child's functioning. In areas in which evidence-based behavioral treatments are not available, the clinician needs to weigh the risks of starting medication before the age of 6 years against the harm of delaying treatment.	Grade B, strong recommendation for methylphenidate
KAS 5b. For elementary and middle school-aged children (age 6 years to the 12th birthday) with ADHD, the PCC should prescribe FDA-approved medications for ADHD, along with PTBM and/or behavioral classroom intervention (preferably both PTBM and behavioral classroom interventions). Educational interventions and individualized instructional supports, including school environment, class placement, instructional placement, and behavioral supports, are a necessary part of any treatment plan and often include an IEP or a rehabilitation plan (504 plan).	Grade A, strong recommendation for medications Grade A, strong recommendation for training and behavioral treatments for ADHD with family and school
KAS 5c. For adolescents (age 12 years to the 18th birthday) with ADHD, the PCC should prescribe FDA-approved medications for ADHD with the adolescent's assent. The PCC is encouraged to prescribe evidence-based training interventions and/or behavioral interventions as treatment of ADHD, if available. Educational interventions and individualized instructional supports, including school environment, class placement, instructional placement, and behavioral supports, are a necessary part of any treatment plan and often include an IEP or a rehabilitation plan (504 plan).	Grade A, strong recommendation for medications Grade A, strong recommendation for training and behavioral treatments for ADHD with the family and school
KAS 6. The PCC should titrate doses of medication for ADHD to achieve maximum benefit with tolerable side effects.	Grade B, strong recommendation
KAS 7. The PCC, if trained or experienced in diagnosing comorbid conditions, may initiate treatment of such conditions or make a referral to an appropriate subspecialist for treatment. After detecting possible comorbid conditions, if the PCC is not trained or experienced in making the diagnosis or initiating treatment, the patient should be referred to an appropriate subspecialist to make the diagnosis and initiate treatment.	Grade C, recommendation

Clinical Practice Guideline for Diagnosis, Evaluation, and Treatment of Attention-Deficit/ Hyperactivity Disorder in Children and Adolescents by American Academy of Pediatrics (Wolraich et al. 2019)

Importance of Non-Pharmacological Interventions in ADHD Treatment

- KAS 5b. by American Academy of Pediatrics (Wolraich et al. 2019)
- Recommendation for elementary and middle school-aged children (aged 6-12 years old) including:
  - **Strong recommendation for medications**
  - **Strong recommendation for training and behavioural treatments** for ADHD with family and school, such as:
    - ***Parent training in behaviour management***
    - ***Behavioural classroom intervention***
    - ***Behavioural support***
- KAS 7. Primary care clinicians may make a referral to an **appropriate subspecialist** for treatment

Importance of Non-Pharmacological Interventions in ADHD Treatment

Children aged 5 years and over and young people

These recommendations, covering children aged 5 years and over and young people, are for healthcare professionals with training and expertise in diagnosing and managing ADHD. March 2018 – medicines used for treating ADHD did not have a UK marketing authorisation for children aged 5 years or under (off-label use). See NICE's information on prescribing medicines.

1.5.10 Give information about ADHD (see recommendation 1.4.3) and offer additional support to parents and carers of all children aged 5 years and over and young people with ADHD. The support should be ADHD focused, can be group based and as few as 1 or 2 sessions. It should include:

- education and information on the causes and impact of ADHD
- advice on parenting strategies
- with consent, liaison with school, college or university (see recommendation 1.4.12)
- both parents and carers if feasible. **[2018]**

Attention deficit hyperactivity disorder: diagnosis and management, NICE guideline, National Institute for Health and Care Excellence, https://www.nice.org.uk/guidance/ng87/chapter/Recommendations#managing-adhd

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Importance of Non-Pharmacological Interventions in ADHD Treatment

Summary

- Importance of **combined treatment** (medication + behavioural treatment)
- Participation of **appropriate subspecialists**
- **Behavioural support and treatment**
- **ADHD-focused support to parents and carers**

AN OVERVIEW OF CPG-ADHD PROGRAM

CPG- ADHD Program

躍動成長路 - ADHD 兒童執行功能訓練計劃

- **Community-based support project for ADHD students and their parents with multidisciplinary involvement**
- Funded by Community Project Grant of the Hong Kong Jockey Club Charities Trust
- Kick-started since 2011
- Served over 930 students with ADHD and 350 parents

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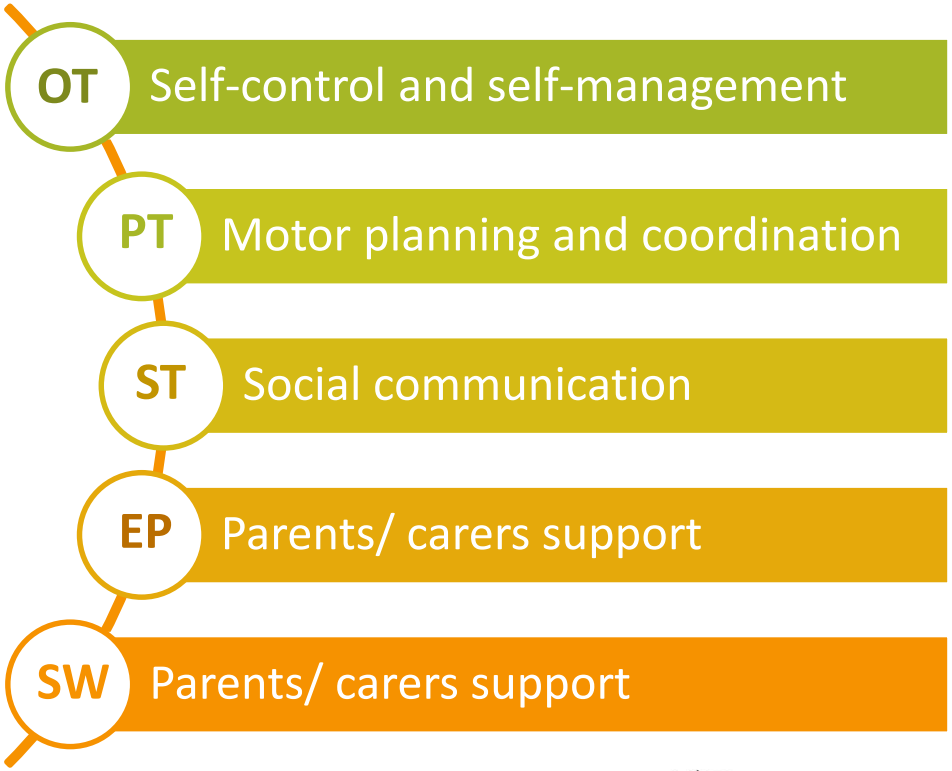
CPG- ADHD Program

Tailored and professional intervention by specialists

- Multidisciplinary involvement by
  - Occupational Therapist (OT)
  - Physiotherapist (PT)
  - Speech Therapist (ST)
  - Educational Psychologist (EP)
  - Social Worker (SW)

Key areas of support:



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Program Features

1. Addressing daily life challenges of ADHD students

- **Difficulties in self-care and organization**
  - Self-care ability is generally lower than their peers
  - Difficulties in planning, organization and time management
- **Difficulties in motor-function and coordination**
  - Neuromotor difficulties

    → affect learning, social and team sport performance
- **Difficulties in language expression**
  - Difficulties in organization, expression and cohesion of language
  - Less capable in communicating task essential information to peers in cooperative tasks
- **Strained parent-child relationship**
  - Parental stress index is associated with severity of ADHD symptoms

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Program Features

2. Importance of executive function (EF) training

- Emerging literature, coupled with Barkley's (1997), has set forth a linkage between **ADHD and deficits in EF**.
- Barkley (1997) initially argued that **deficits in behavioural inhibition** as a result of **executive dysfunctions**, are specified as **a core underlying deficit responsible for ADHD**, and would create a **cascade of deficits into other EFs**, such as working memory, emotional and motivational self-regulation, and planning-problem solving.
- According to the new working definition of ADHD (Brown, 2013),
  - ADHD = **A complex syndrome of developmental impairment of executive functions**, the self-management system of the brain.
- ADHD is now viewed as a **disorder of self-regulation and EF** (Barkley, 2014)

Program Features

3. Fulfilling the existing service gaps in ADHD support

- Increasing number of students with ADHD in primary school
  - Increase from 5,110 in 2018/19 to **5,670** in 2023/2024

Integrated Education

Number of Students with Special Educational Needs (SEN) in Public Sector Ordinary Primary and Secondary Schools from the 2018/19 to 2023/24 school years - categorised by School Level and SEN Type

School Level	SEN Type	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Primary	ID	760	810	930	990	1 090	1 170
	ASD	5 690	6 400	6 880	6 930	6 850	6 970
	AD/HD	5 110	5 500	6 030	5 830	5 750	5 670
	MI	60	70	130	130	160	170
	SpLD	10 370	11 200	11 220	11 590	12 190	12 920
	PD	110	110	130	110	100	80
	VI	40	30	40	30	40	40
	HI	360	390	380	370	350	360
	SLI	2 510	2 810	2 910	3 330	3 380	3 650
	Total	**25 010**	**27 320**	**28 650**	**29 310**	**29 910**	**31 030**

Number of students with ADHD **increased by 11%** from 2018/19 to 2023/24

Figures and Statistics, Education Bureau, https://www.edb.gov.hk/en/about-edb/publications-stat/figures/index.html

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Program Features

3. Fulfilling the existing service gaps in ADHD support

- Early diagnosis of ADHD in preschool stage
  - More SEN children have been identified after the regularization of On-site Preschool Rehabilitation Services (OPRS) since 2018.
  - Provisional figure of newly diagnosed cases with ADHD was **2,422** in Child Assessment Centres (CAS) of Department of Health

Developmental conditions	Number of newly diagnosed cases		
	2020	2021	2022 (Provisional figures)
Attention/Hyperactive Problems/Disorders	3 318	2 970	2 422
Autism Spectrum Disorder	1 769	1 960	1 861
Borderline Developmental Delay	2 512	2 652	2 105
Developmental Motor Coordination Problems/Disorders	2 016	2 503	2 256
Dyslexia & Mathematics Learning Disorder	477	331	229
Hearing Loss (Moderate to Profound Grade)	51	63	50
Language Delay/Disorders and Speech Problems	4 570	5 401	4 147
Physical Impairment (i.e. Cerebral Palsy)	36	38	34
Significant Developmental Delay/ Intellectual Disability	1 482	1 722	1 527
Visual Impairment (Blind to Low Vision)	11	11	6

Note: A child might have been diagnosed with more than 1 developmental condition. Also, CAS does not maintain statistics on the developmental conditions by age.

Legislative Council Panel on Welfare Services,
https://www.legco.gov.hk/yr2023/english/panels/ws/papers/ws20230313cb2-500-1-e.pdf

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Program Features

3. Fulfilling the existing service gaps in ADHD support

- **Low entry requirement** for wide range of target participants
  - Community-based training for students **regardless their severity of ADHD**
  - Students with less severe ADHD symptoms, who are usually not at the top priority in school-based training, may still have chances to receive professional intervention through our program

Participants and Objectives

- **Participants:**
  - Previously targeted for P.3 to P.5 students with ADHD diagnosis and their parents/ carers
  - Targets expanded to P.1 to P.5 students since 2023

- **Program objectives:**
  - To enhance ADHD students' executive functioning for better management of their learning and daily living;
  - To enhance parents' capability and home-based training skills to manage their child's ADHD-related problems.

Student support

Parent support

Program Structure – Overview

CPG-ADHD Program

Student Support

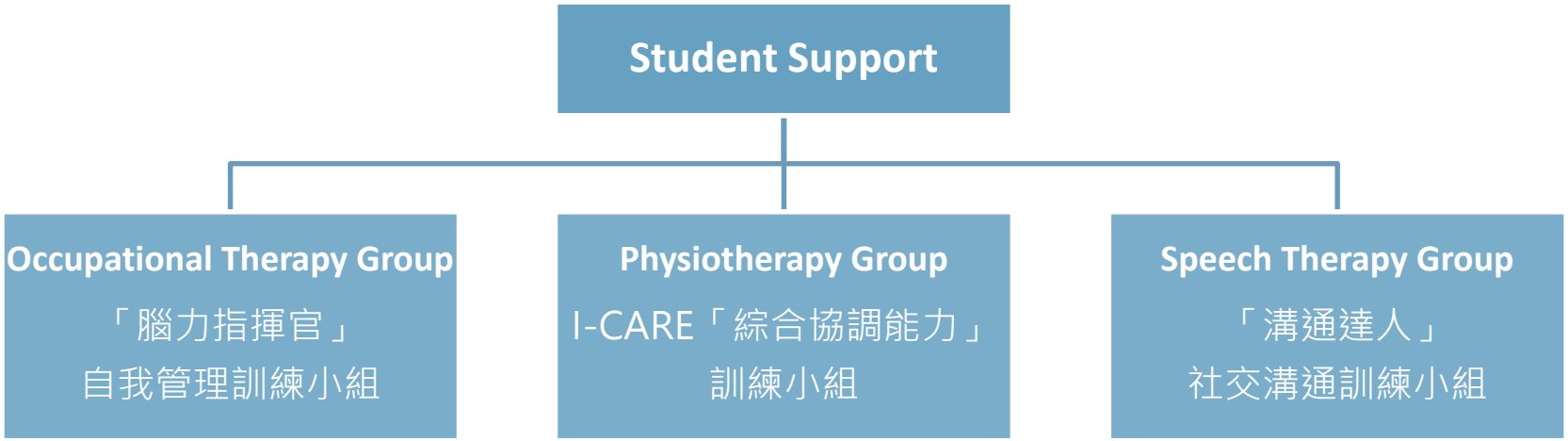
- Occupational Therapy Group
- Physiotherapy Group
- Speech Therapy Group

Parent/ Carer Support

- Psycho-education Mass Seminars
- Workshops
- Parent Skills Training Groups
- Group Consultation
- Individual Consultation
- Parent-child Interactive Activities Day

Program Structure – Student Support

Executive Functioning Training for Students through Therapist's Groups



- Conducted by specialists (OT, PT, ST)
- Student group structure:
  - 1 screening session
  - 10 training sessions (1.5 hours/ session)

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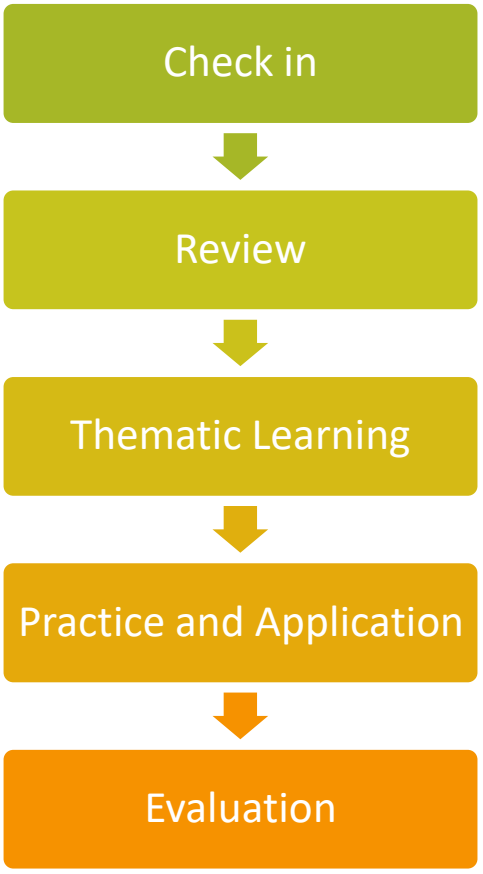
Core Training Strategies

- ***Systematic group structure***
  - Establishes clear group routines and rules
  - Environmental modification, such as changes in seating arrangement, reducing distractions, optimizing work or education to have shorter period of focus with movement break etc.
- ***Clear learning objectives***
  - Set clear, reasonable and specific expectation on learning objectives



Reference:
香港大學心理學系（2024）。「賽馬會喜躍悅動計劃」訓練資源套 - 支援有注意力不足 / 過度活躍症的學生。香港都學心理學系及香港賽馬會慈善信托基金。
A-STEP, HKU LKS Faculty of Medicine Department and Pharmacology & Pharmacy, https://www.astep.hku.hk/for-teachers-adhd-classroom-strategies

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Core Training Strategies

- **Experiential learning through games and activities**
  - Learning by Doing
  - Experiential learning as a 4-process:
    - Concrete experience (Doing)
    - Reflective observation (Observing)
    - Abstract conceptualization (Thinking)
    - Actual experimentation (Planning)

  (Kolb's Learning Cycle; Kolb, 1984)
- **Application to daily life scenarios**
  - Focused and repetitive training in daily life application

Reference:
香港大學心理學系（2024）。「賽馬會喜躍悅動計劃」訓練資源套 - 支援有注意力不足 / 過度活躍症的學生。香港都學心理學系及香港賽馬會慈善信托基金。
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Core Training Strategies

- **Behavioural modification**
  - Building positive behaviour
  - Reducing negative behaviour
  - Clear and specific expectation on positive behaviour
  - Token system
  - Continuous reinforcement scheme
  - Pair with self and peer evaluation and therapist's feedback

Reference:
香港大學心理學系（2024）。「賽馬會喜躍悅動計劃」訓練資源套 - 支援有注意力不足 / 過度活躍症的學生。香港都學心理學系及香港賽馬會慈善信托基金。
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Core Training Strategies

- **Visual support**
  - Effective strategy to compensate deficit of auditory memory and working memory of ADHD students
  - To enhance self-regulation ability

EF cards as visual support (自我管理法寶)

Reference:
香港大學心理學系（2024）。「賽馬會喜躍悅動計劃」訓練資源套 - 支援有注意力不足 / 過度活躍症的學生。香港都學心理學系及香港賽馬會慈善信托基金。
A-STEP, HKU LKS Faculty of Medicine Department and Pharmacology & Pharmacy, https://www.astep.hku.hk/for-teachers-adhd-classroom-strategies

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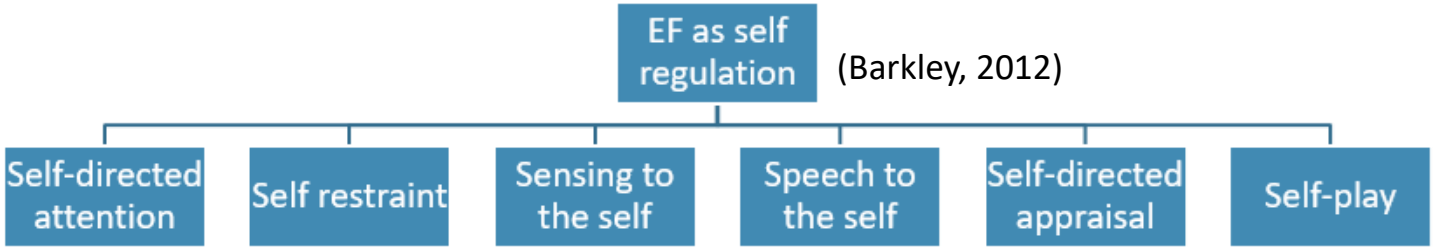
Core Training Strategies

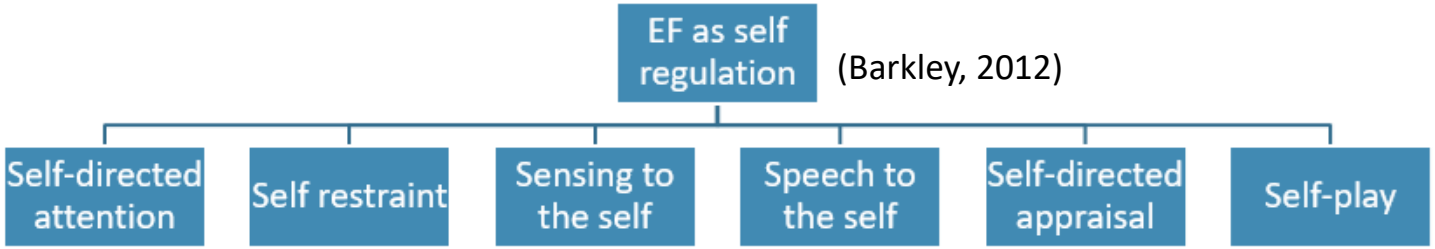
- EF cards version 1.0



(Barkley, 2012)

Core Training Strategies

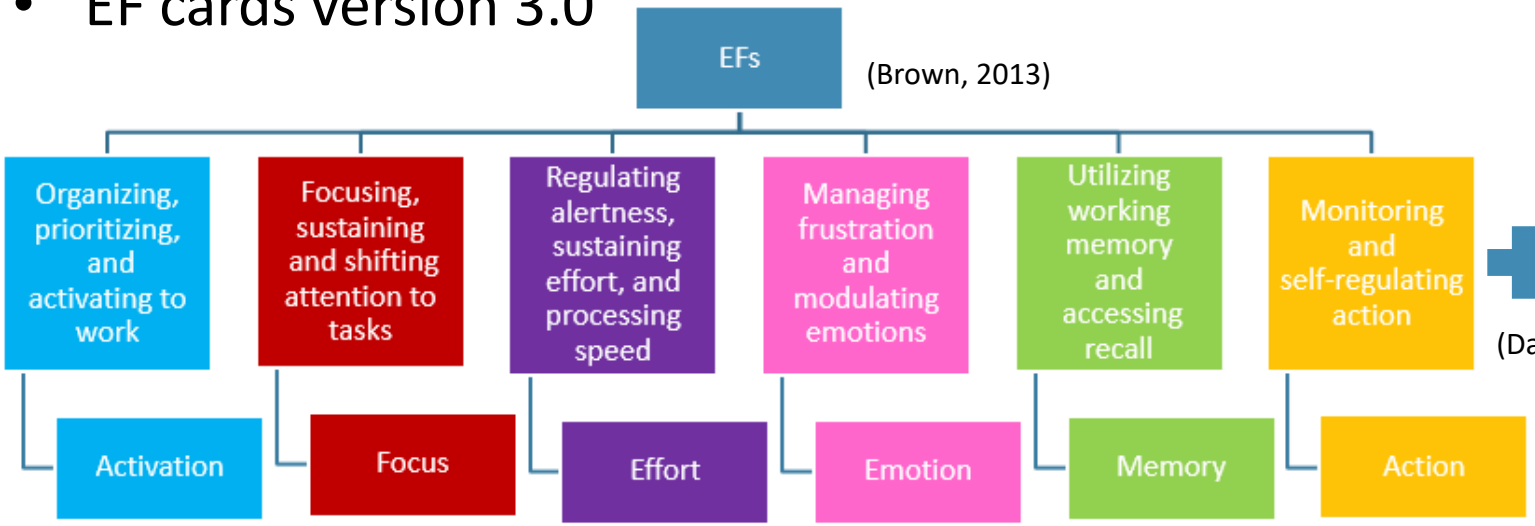
- EF cards version 2.0



(Barkley, 2012)

Core Training Strategies

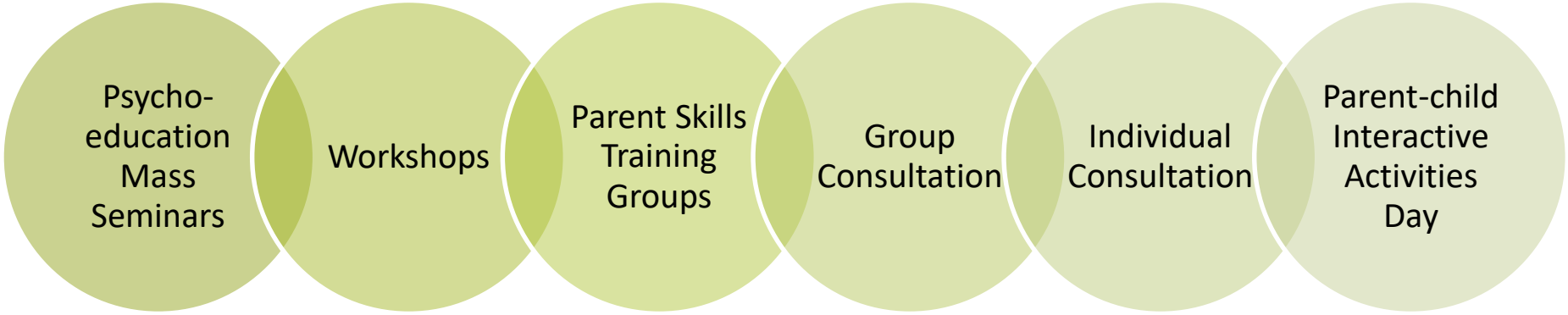
- EF cards version 3.0



Program Structure – Parent/ Carer Support

Comprehensive support to parents and carers

- Equal emphasis on supporting parents/cares of ADHD students



- Conducted by specialists (EP, SW, OT, PT, ST)

Evaluation Methodology

Student Support

- Pre-Post Test
- Standardized test
- Observation checklist
- Parent's questionnaire
- Parent's qualitative feedback

Parent/ Carer Support

- Participant's questionnaire
- Participant's qualitative feedback
- Participants' feedback on program

- **Over 96%** participating parents are **satisfied** with the program in past 4 years (2020-2024)
- **Over 91%** participating parents have reported their **child's ADHD-related problem has been improved** in past 4 years (2020-2024)

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Occupational Therapy Self-Management Intervention for Students with ADHD

Mr Eddie LUI, Occupational Therapist
of
Heep Hong Society

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Content

A. OT Self-Management Intervention

B. Program Features & Structure

C. Evaluation and Effectiveness

OT Self-Management Intervention

Common Problems in Students with ADHD








Objectives of the Program

Students → Psychoeducation of EF skills / Therapeutic Games → **↑ Self-Management in Daily Life**

Parents → Teaching ADHD Handling Techniques / Adapted Home Program → **↑ Parental Competence**

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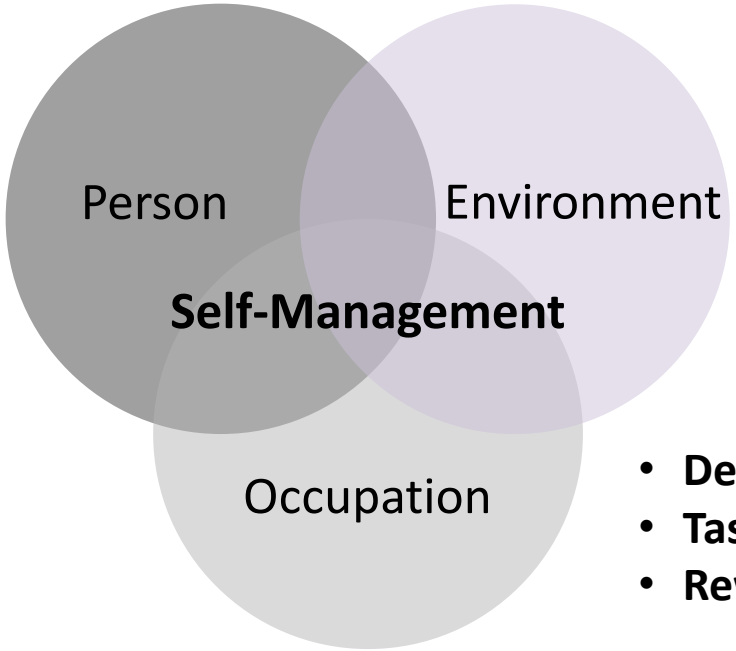
Program Feature

PEO Model



- **Executive Functioning**
- Neurobiology of ADHD
- Sensory Processing
- Social Skills

EF Skills Training

Parent Education and Consultation

- **Family**
- School
- Peers
- Society & Services

Accommodation on Home Environment and Tasks

- **Developmental Challenge**
- **Task Demand**
- **Reward**

Therapeutic and Motivational Games and Rewards

(Law et al., 1996, "The Person-Environment-Occupation (PEO) Model")

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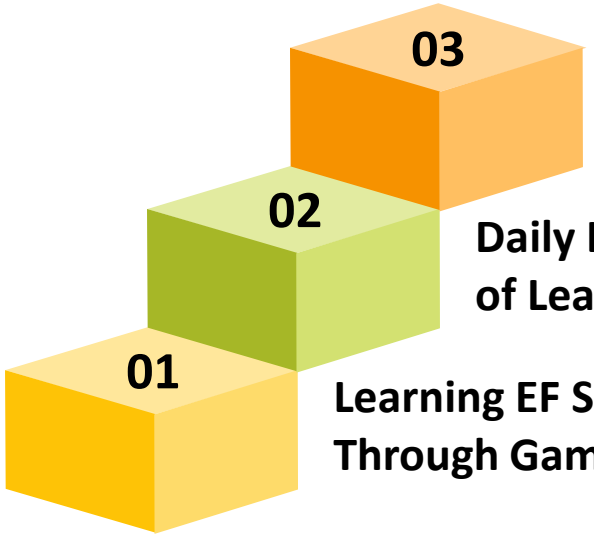
Insights from Research Findings

Treatment for Primary school age

- Combined Intervention
- Individualized Instructional Supports
- Generalize Across Settings
- Parents Work
- Environmental Modifications



(American Academy of Pediatrics, 2019; Gintner & Mooney, 2015; National Institute for Health & Care Excellence [NICE], 2019)

Learning EF Skills through Games

EF Concepts		Therapeutic Games
Vague	→	Hands-on experience
Conceptual		Multisensory
Boring		Fun & Novel








Learning EF Skills through Games

Sessions	EF Skills Focus
1-4	Attention Arousal Regulation Response Inhibition
5-6	Emotion Regulation
7-9	Planning & Organization Working Memory
10	Round Up + Post Ax

Learning EF Skills through Games

Immediate Feedback and Rewards

Daily Life Application of Learnt Skills

Daily Task: Packing School Bag

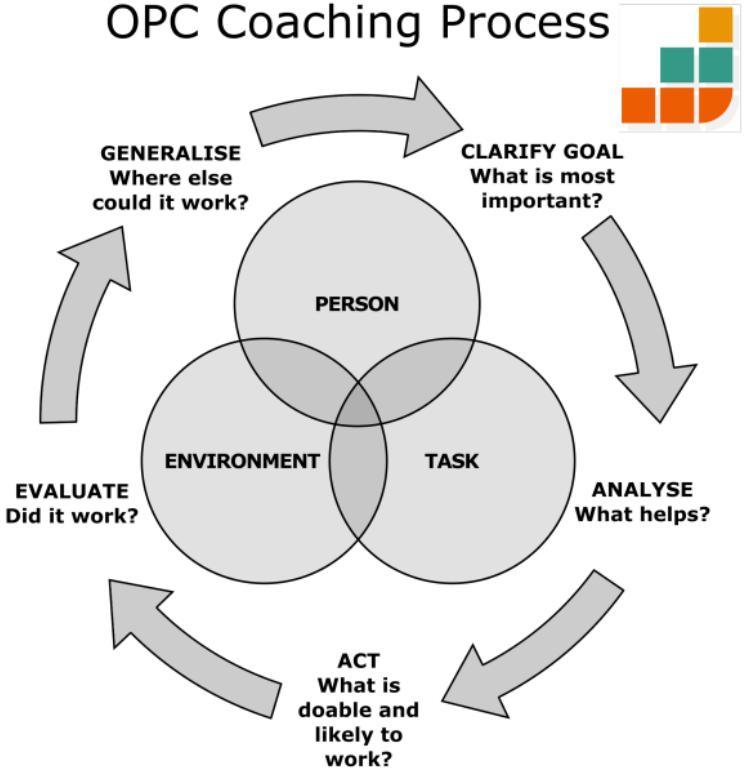
做事四部曲

Parents Education and Consultation

Content:

- Home Program
- Use of Strategy cards
- Expectation Adjustment
- General Handling Techniques
- Individualized Action Plan

Adopting **Occupational Performance Coaching (OPC)***



*(Chien, Lai, Lin, & Graham, 2020)
*(Graham, Rodger, & Ziviani, 2009)

Parents Education and Consultation

Individualized **Canadian Occupational Performance Measure (COPM)*** Action Planning adopting OPC

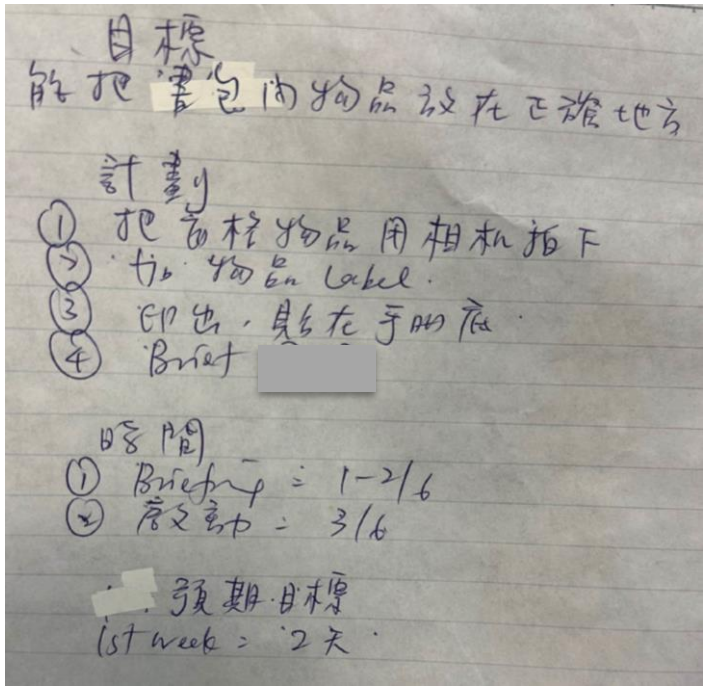
- COPM: Client-centered outcome measure assessing a person's self-perception of performance in everyday living tasks

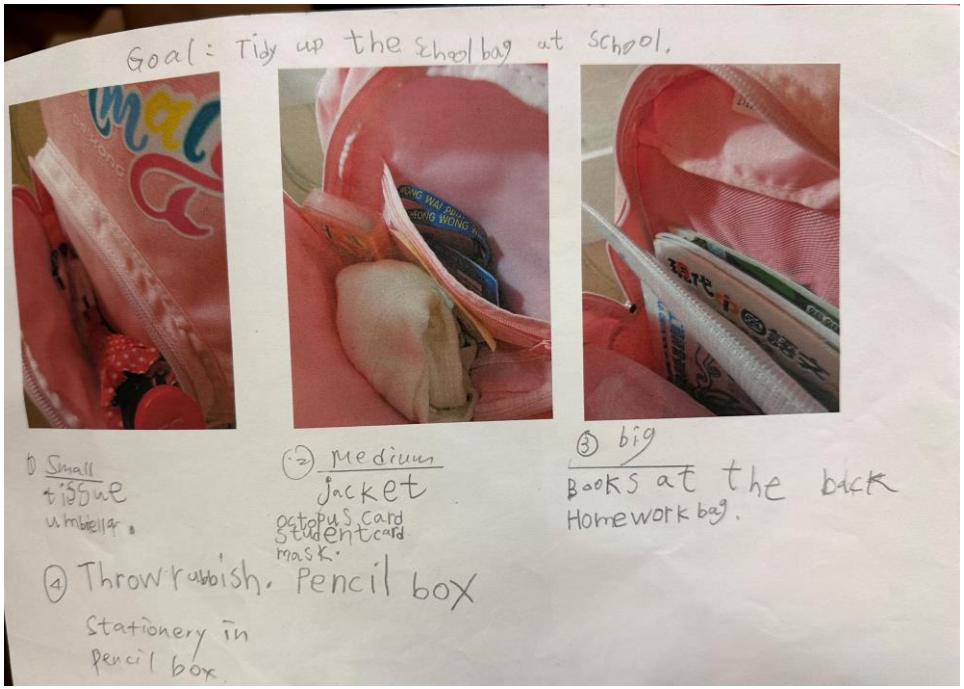
兒童的日常活動/行為表現	重要性	兒童表現	滿意度
1	8	4	4
2	10	2	2
3	8	4	4
4	10	3	4
5	10	3	4

*(Law et al., 2005)

Parents Education and Consultation

Individualized COPM Action Planning adopting OPC

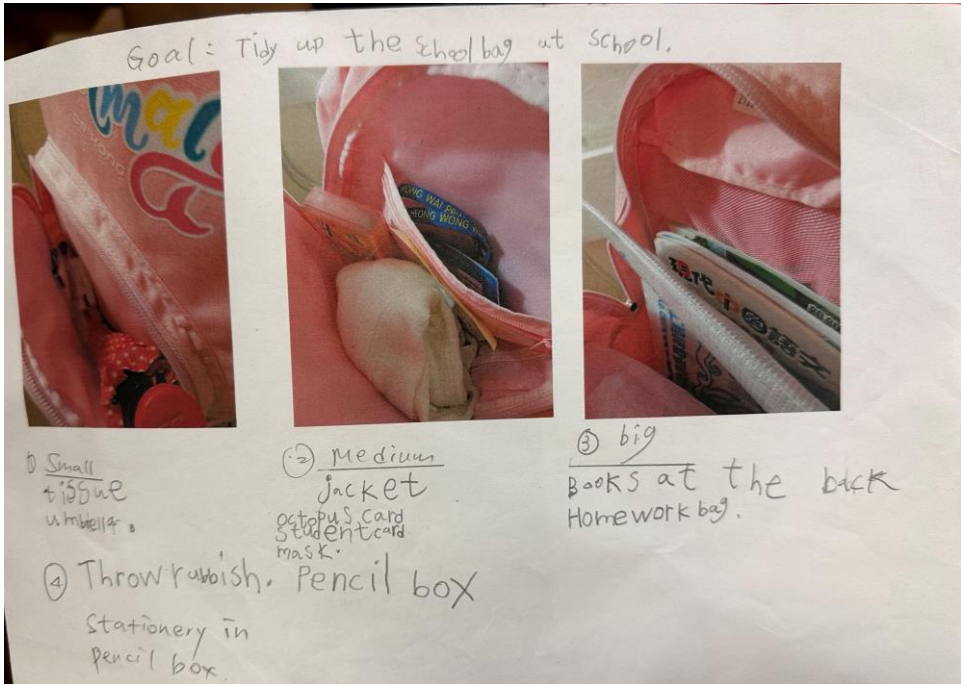


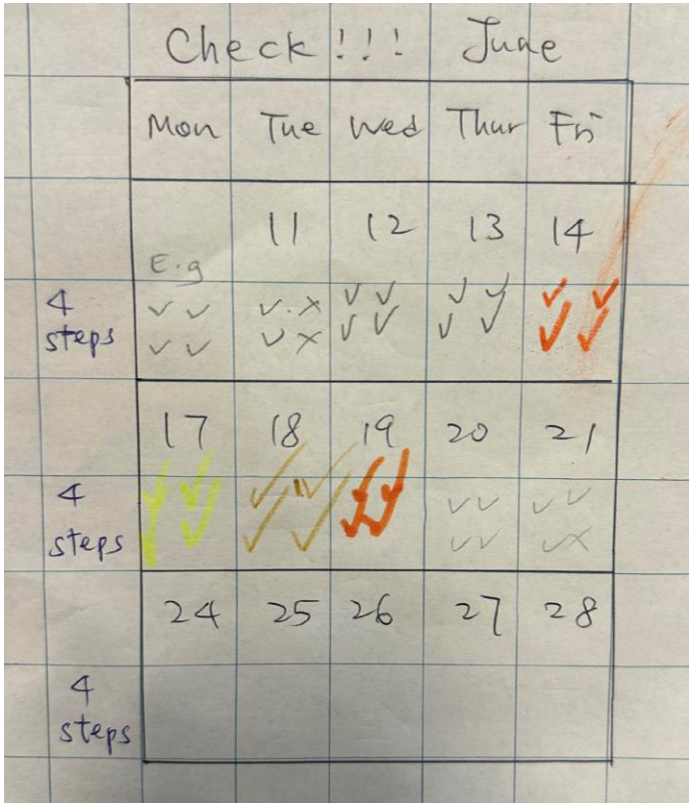


Checklist (Visual Cue) + Token System

Parents Education and Consultation

Individualized COPM Action Planning adopting OPC



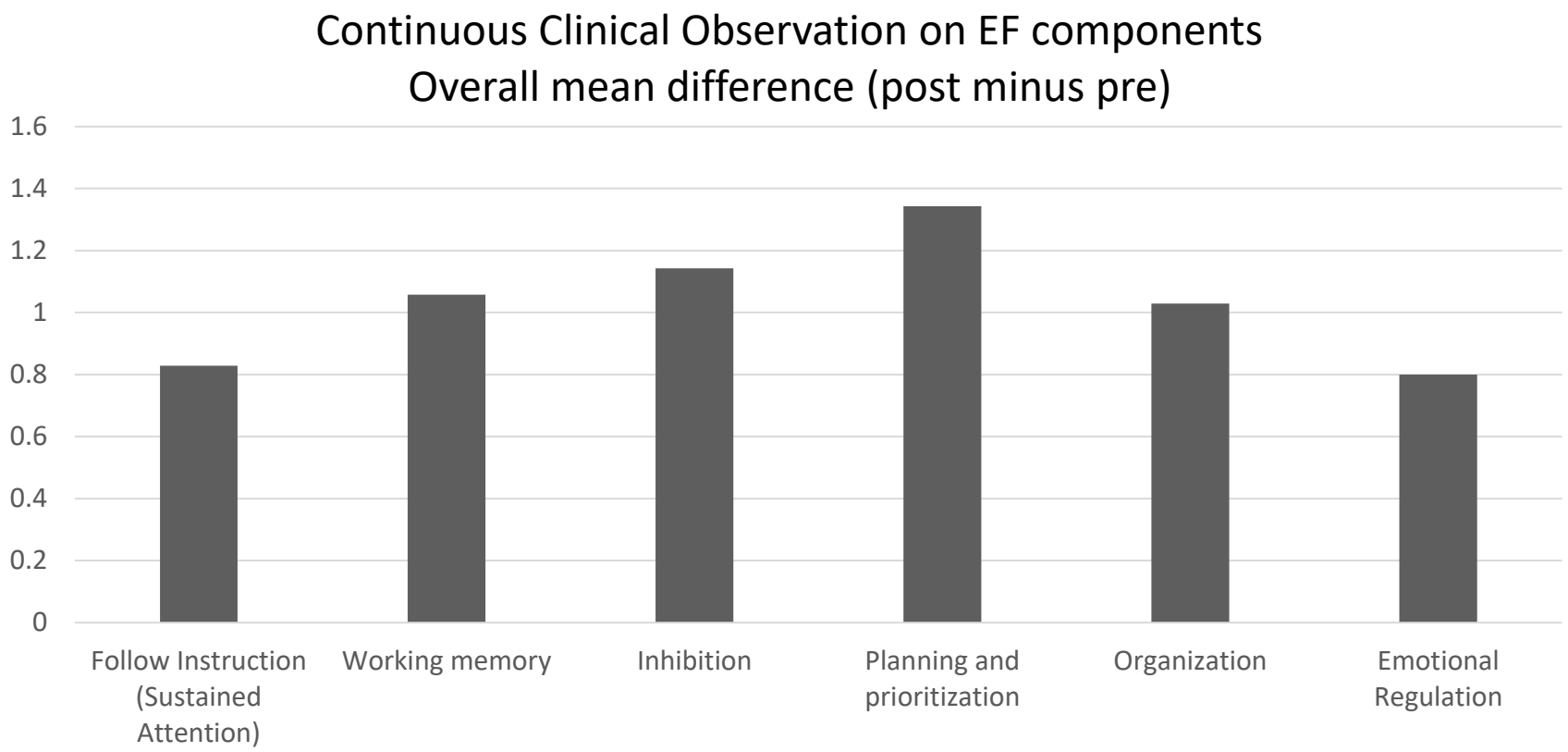


Checklist (Visual Cue) + Token System

Evaluation and Effectiveness

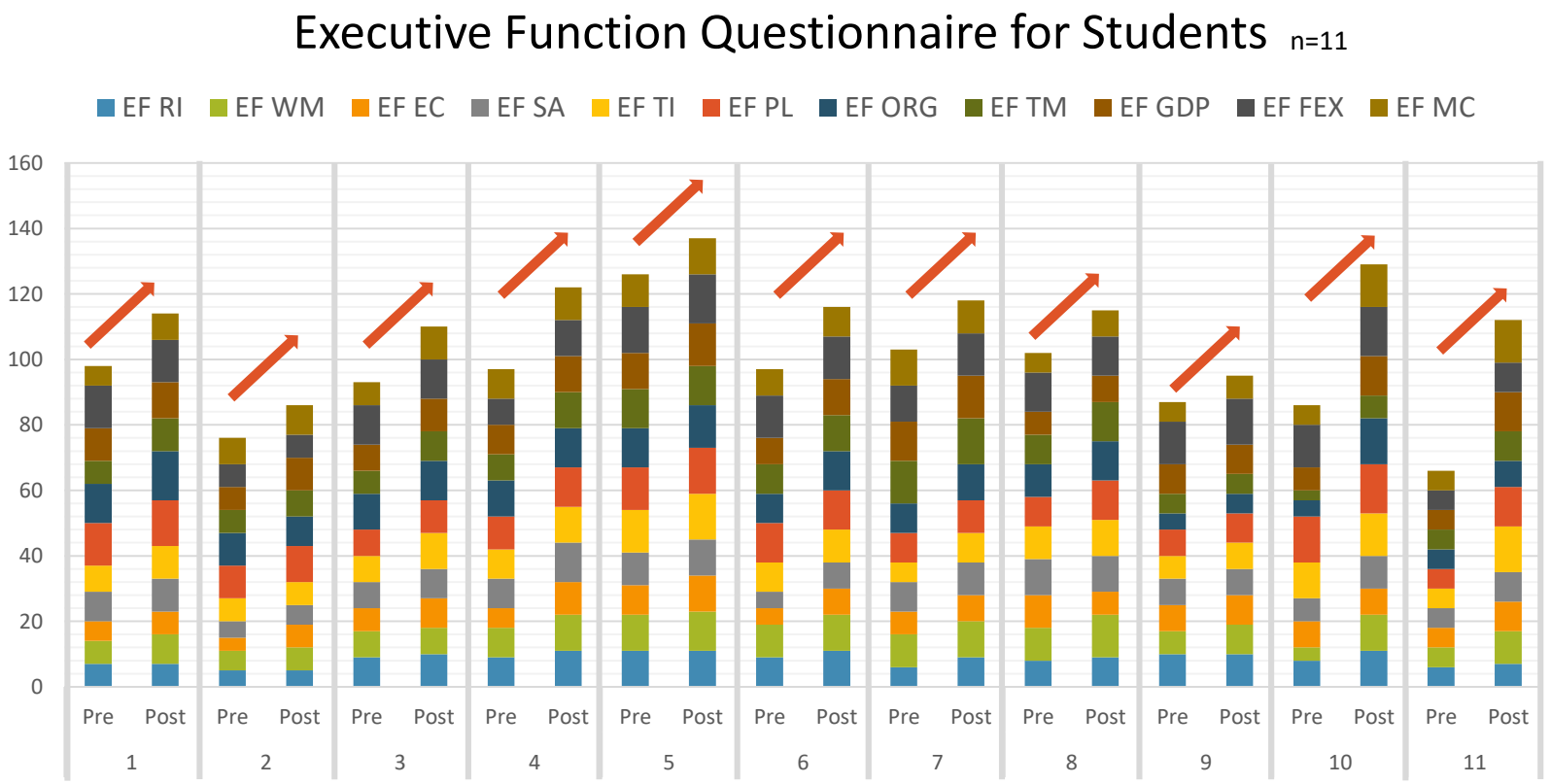
1. Students' Performance in Group sessions
2. Daily Functional Performance (Rated by parents)
3. Parents' Satisfaction
4. Parents' Qualitative Feedback

Evaluation and Effectiveness



n=35

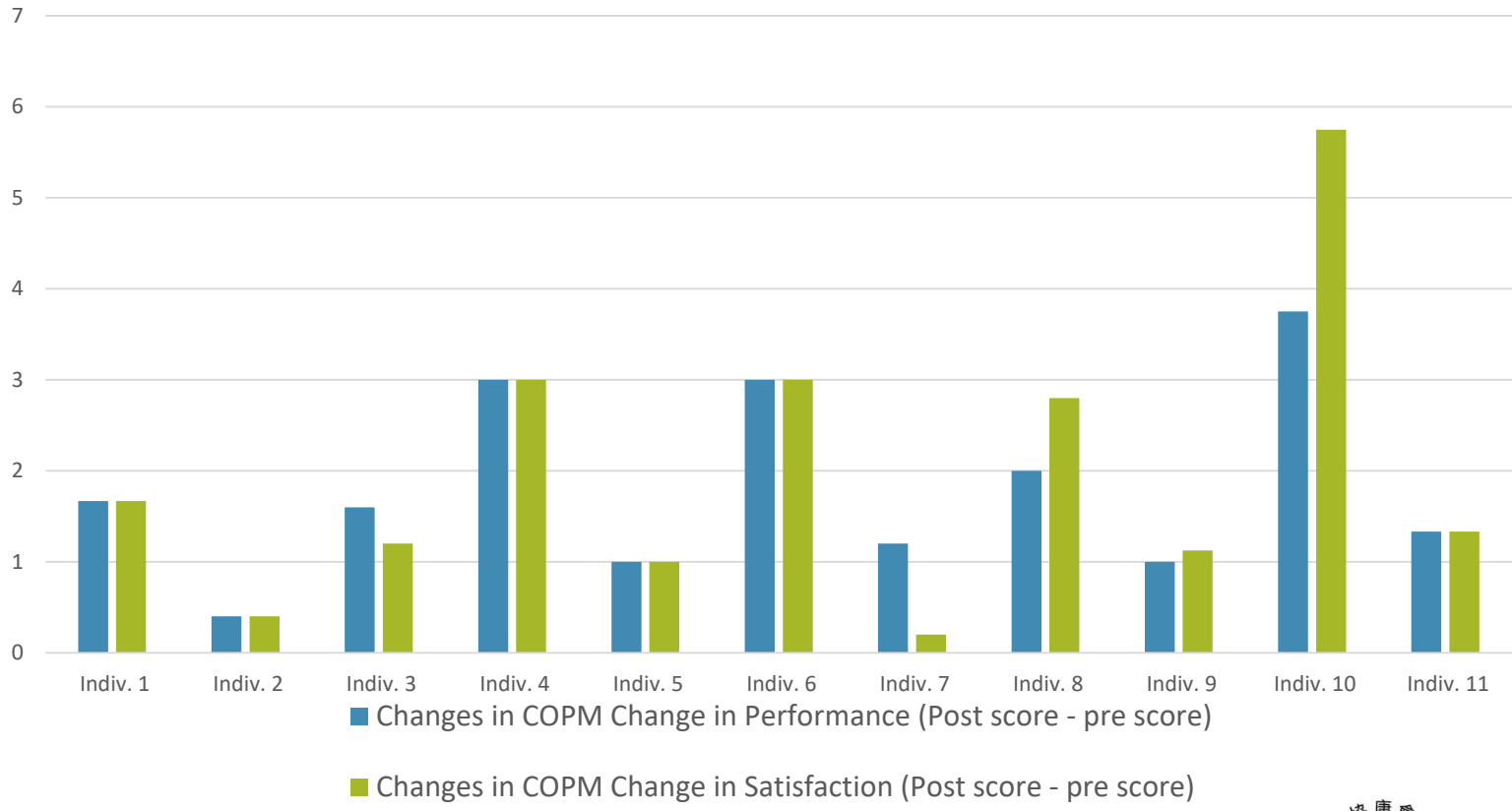
Evaluation and Effectiveness



Evaluation and Effectiveness

Changes in Canadian Occupational Performance Measure (COPM) Rating

n=11



Post and pre score = Total performance or satisfaction scores/ number of problems

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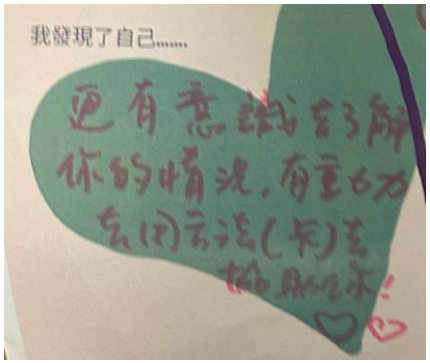
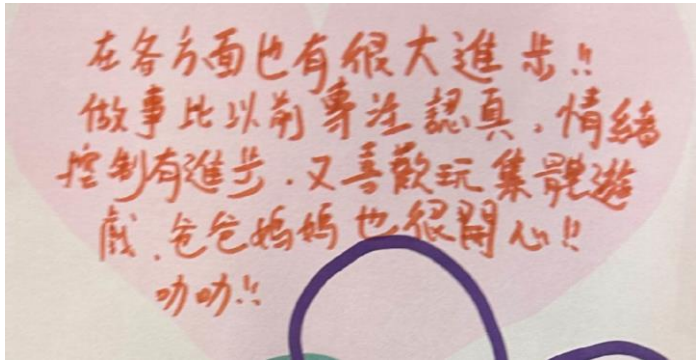
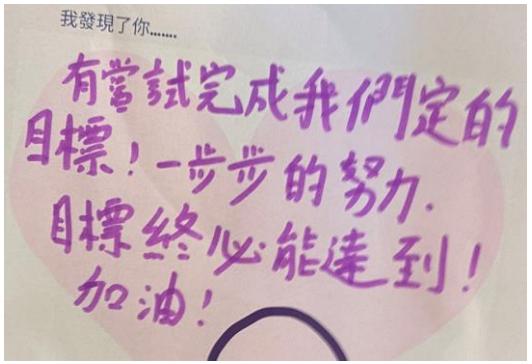
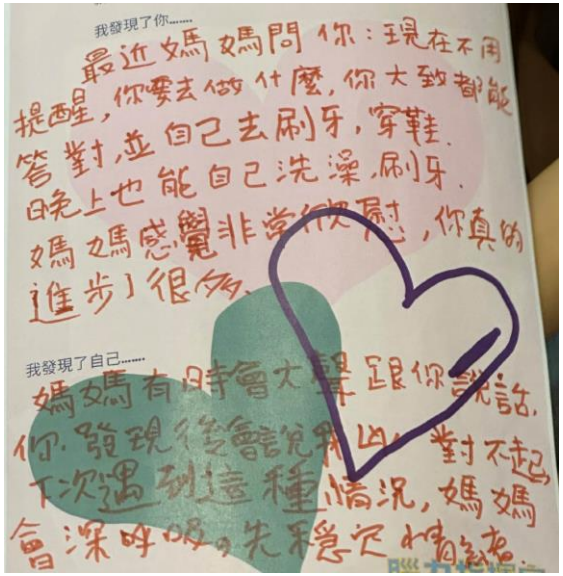
Evaluation and Effectiveness

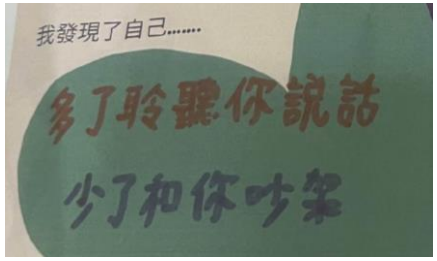
Parents' Heartfelt Messages to Children and Self

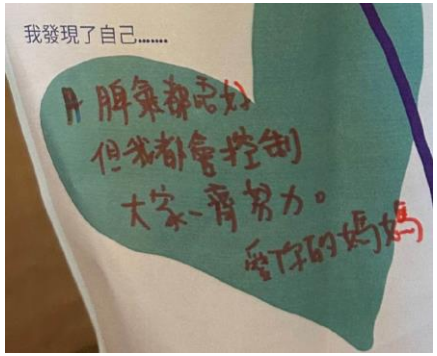


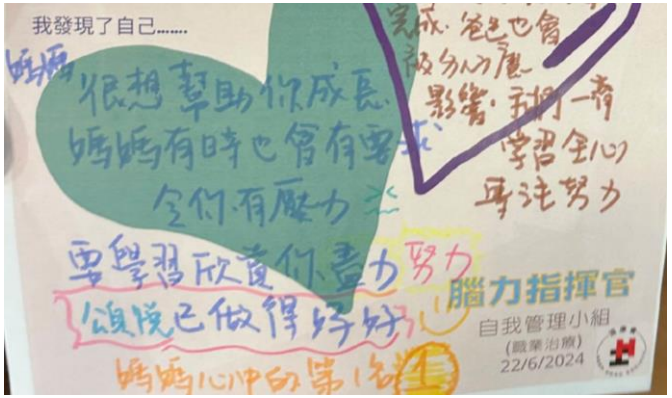












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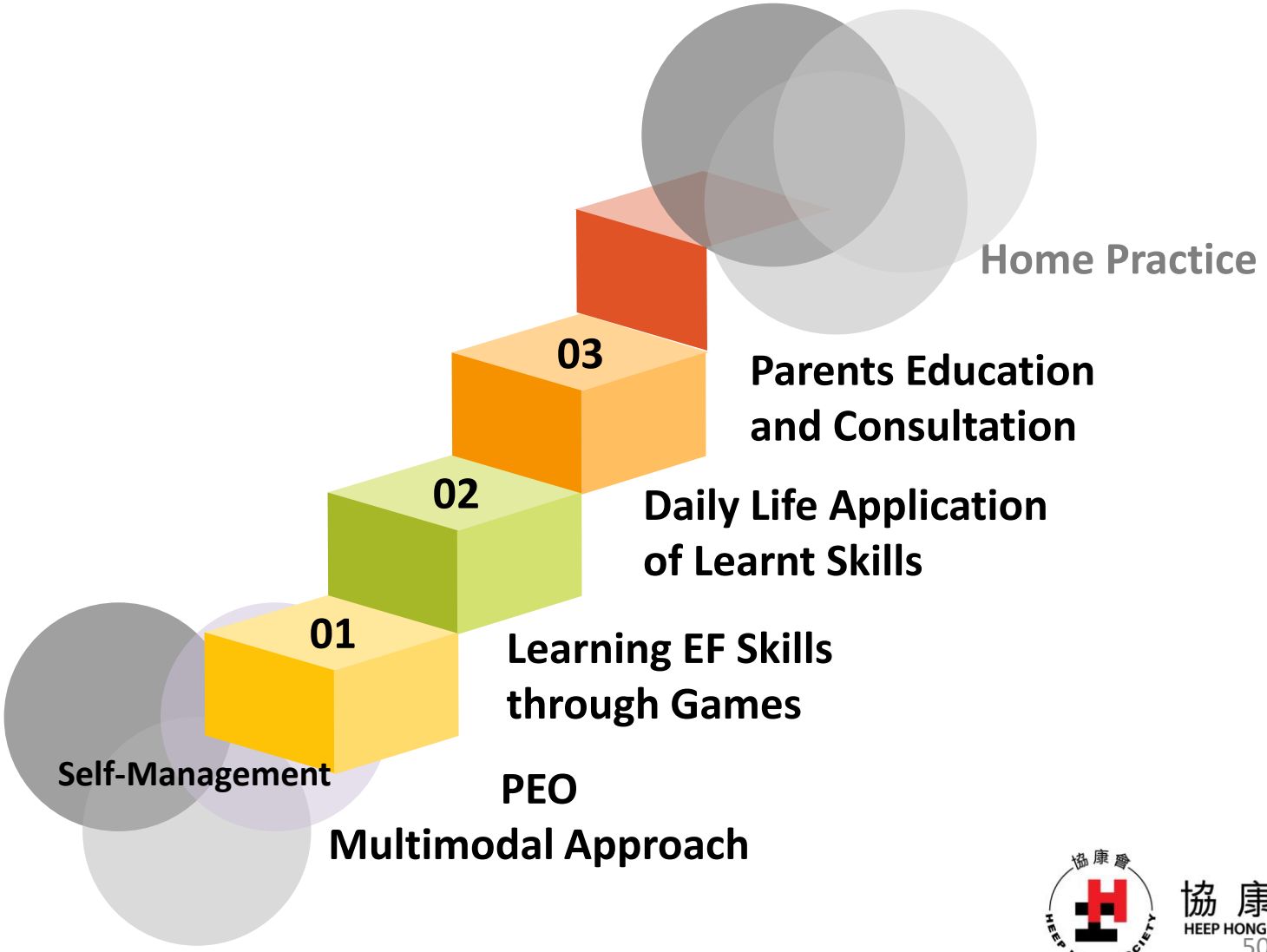
OT Summary


Home Practice
03
Parents Education and Consultation
02
Daily Life Application of Learnt Skills
01
Learning EF Skills through Games
Self-Management
PEO
Multimodal Approach

Physiotherapy (PT) Exercise Intervention:
I-CARE Executive Functional Training for ADHD Children

Ms Annie O, Physiotherapist I
of
Heep Hong Society

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Content

- ICF framework & exercise for ADHD
- PT exercise intervention: I-CARE for ADHD

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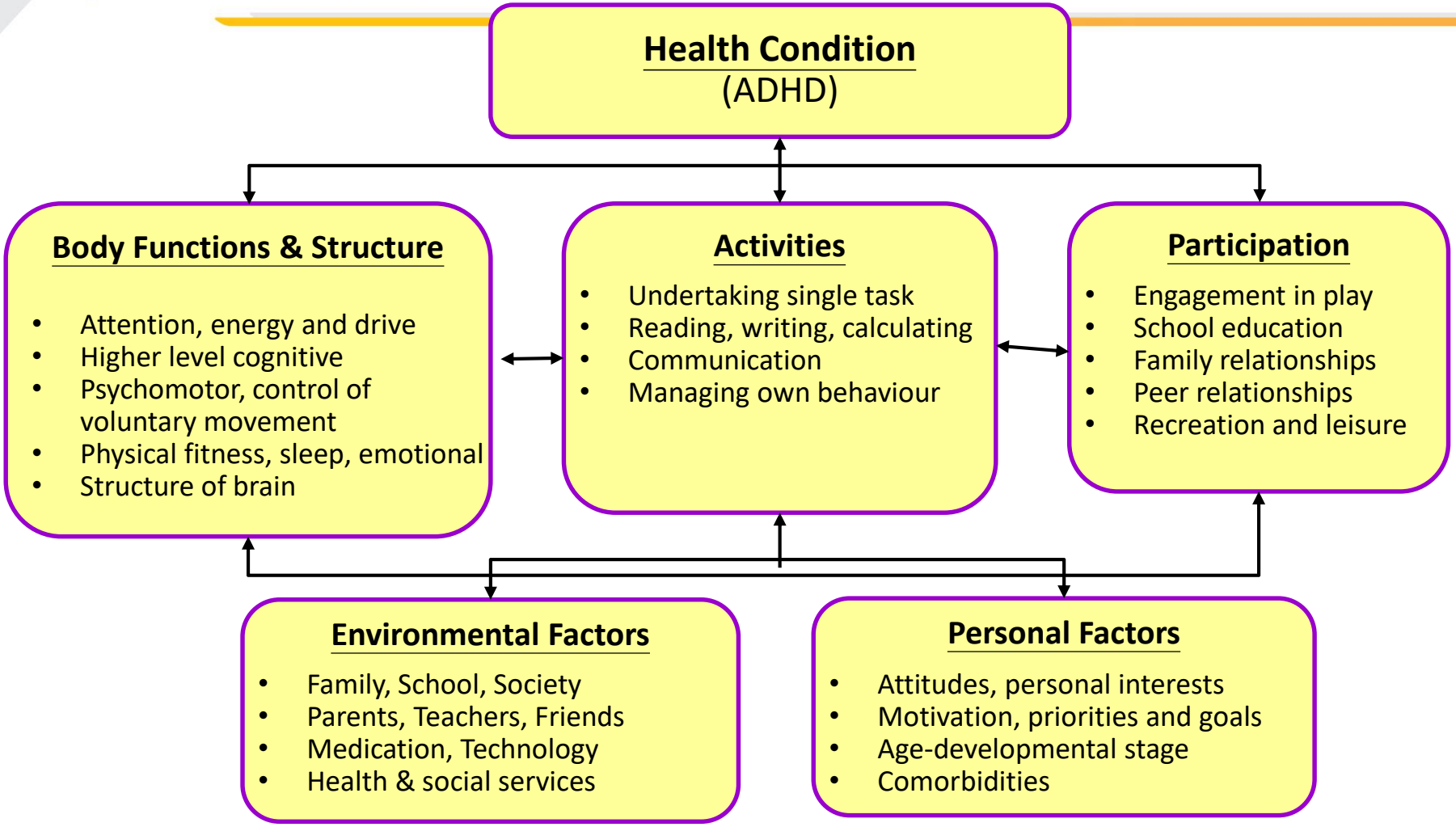
ICF Framework for ADHD



Bölte, et al (2018) ; Schiariti et al (2018)

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EF Skills and Physical Activities

EF Skill	Application in competition
Inhibition	• Not be disturbed by surrounding sounds • Keep focusing on teammate's signal
Emotion control	• Keep calm when win/lose point or be provoked
Working memory	• Remember different skills taught by coach • Remember the rules
Goal-directed persistence (self dialogue)	• Self-encouragement to keep up
Organization	• Observe and analyse the strength and weakness of own team and competitor • Adjust the strategies accordingly

ADHD & Gross Motor Performance

Clinical Findings by PT of Heep Hong Society:

- Some ADHD children have weaker Gross Motor performance including
  - -Balance
  - -Upper Limb Manipulative Skill
  - -Motor Planning & Coordination

- Retained Primitive reflex

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ADHD & Gross Motor Performance

Research compared Gross Motor performance of ADHD children with their peers in same age group

1) Chen et al.(2010)

- ADHD boys aged from 7-10 years old performed significantly poorer in Locomotor Skills, Object Control Skills and Gross Motor Development Quotient GMDQ

2) Lee et al.(2024), Pranjic et al.(2023), Pitcher et al.(2003)

- High rates of comorbidity between ADHD and DCD (Developmental Coordination Disorder)
- It co-occurs in approximately 39-50% of cases

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Physical Exercise **Helps** ADHD

1) Zang et al.(2019)

- Systematic reviewed 14 studies and meta analysed the effect of physical exercise for total of 574 ADHD children aged 8-16 years
  - Physical activity group: 276 participants
  - Control group: 298 participants
- Results showed
  - Physical exercise significantly improved anxiety and depression, thought and social problems as well as any aggressive behaviour

2) Den Heijer et al. (2016)

- Systematic reviewed 25 articles and analyzed the acute and chronic effects of physical exercise on cognitive and behavioural functions in children with ADHD
  - Cardio Exercise VS Non-cardio Exercise
  - Cardio Exercise has both acute and chronic effect in cognitive, behavioural & emotion

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PT Exercise Intervention

I-CARE for ADHD 身心導向

- An exercise intervention developed by PT team of Heep Hong Society since 2005
- I-CARE → **I**ntegrative training of
  Coordination,
  Arousal/Attention
  Regulation and
  Executive Function
- **Combine with Body & Mind training**
  - Body---build up fundamental physical condition
  - Mind---empower self awareness & regulation skill

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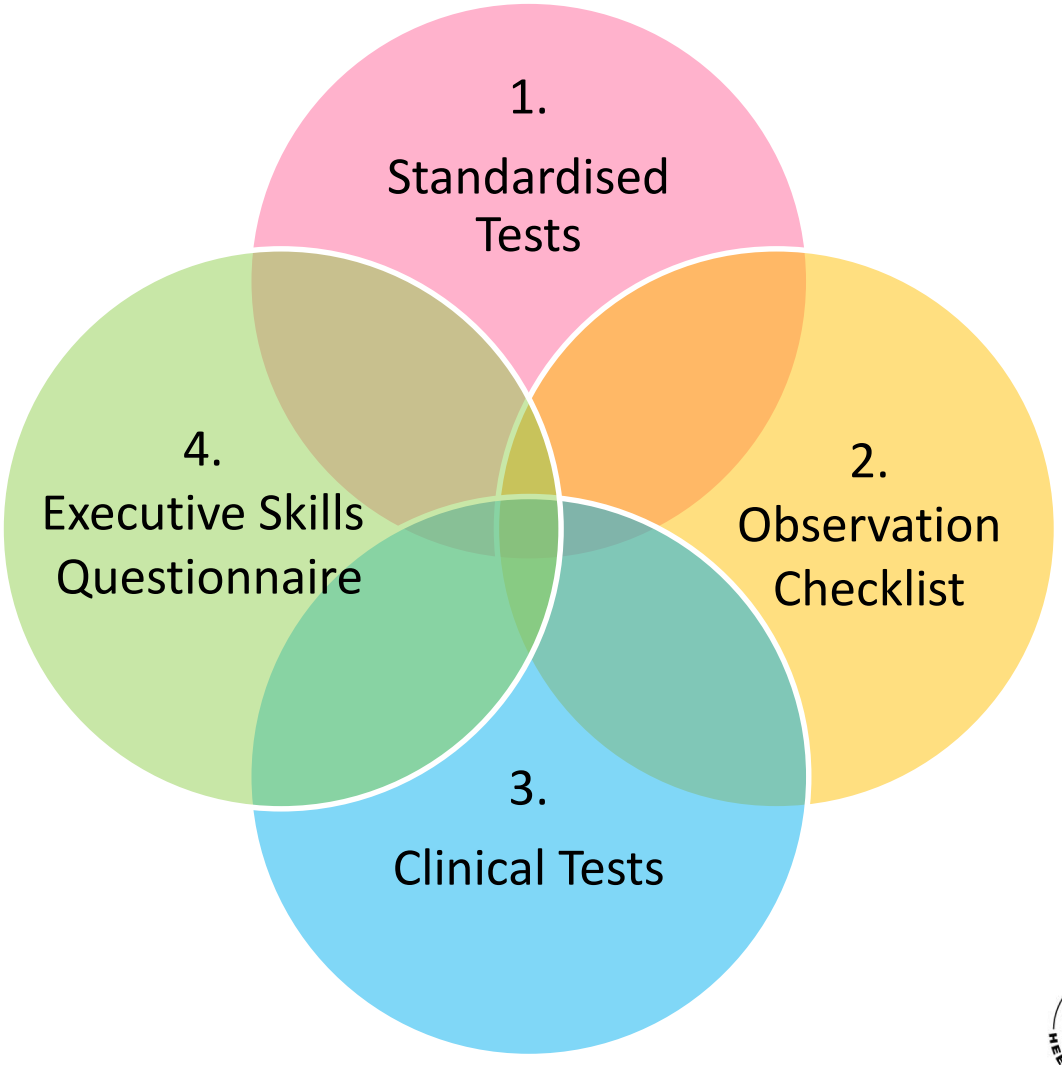
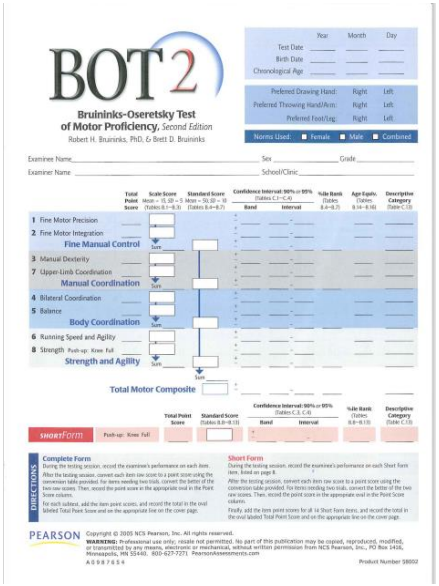
PT Assessment for ADHD



PT Assessment for ADHD

- Standardised tests
  - BOT-2
- Observation checklist
  - Sensory Systems
  - Primitive Reflex



PT Assessment for ADHD

- Clinical tests
  - Executive Functions

    (Modified from BRIEF®2 (Behavior Rating Inventory of Executive Function®, Second Edition)

    A) Inhibit, B) Emotional control,

    C) Working memory, D) Initiation,

    E) Organization of materials

- Executive Skills Questionnaire

  (From the book: Smart but scattered by Peg Dawson)

  ➢ parents and children's EF function at home

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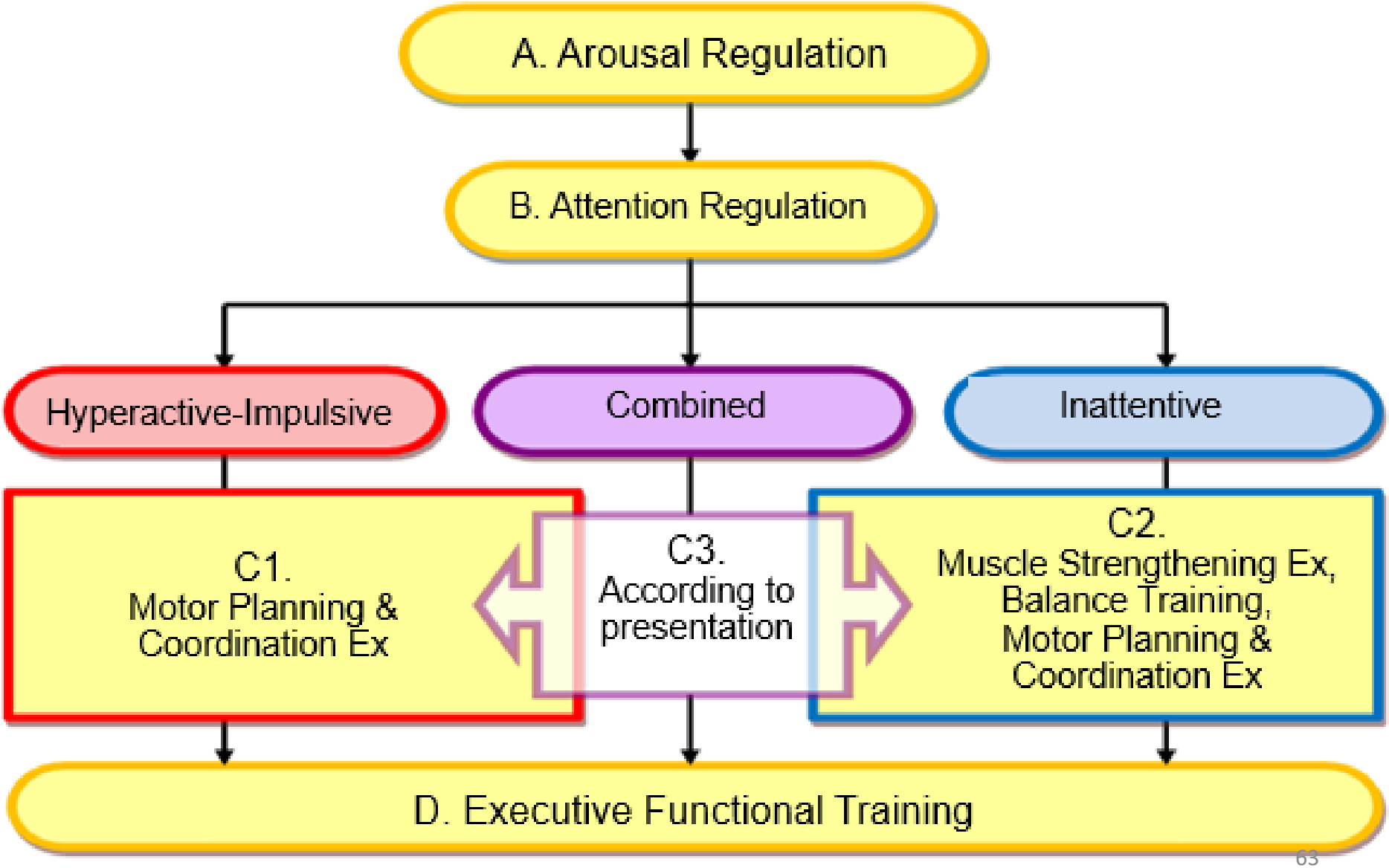
I-CARE


A. Arousal Regulation
B. Attention Regulation
Hyperactive-Impulsive
Combined
Inattentive
C1.
Motor Planning &
Coordination Ex
C3.
According to
presentation
C2.
Muscle Strengthening Ex,
Balance Training,
Motor Planning &
Coordination Ex
D. Executive Functional Training

A. Arousal Regulation

A. Arousal Regulation

- Use arousal chart as visual support
- Introduce various performance in different arousal levels
- Beware of own state of arousal (before class and during activity)
- Regulate to optimal as needed

A. Arousal Regulation

- Up-regulating exercise

(Black to Green Zone)

- **Fast pace**
- Crossing mid-line
- Contralateral coordination; Asymmetric & Combined movements
- Novel tasks

Cross Leg Crawl
(forward and backward)

- Down-regulating exercise

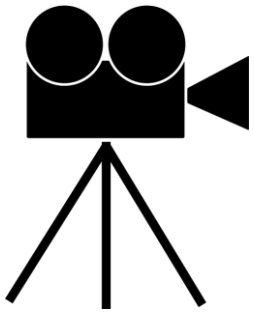
(Red to Green Zone)

- **Slow pace**
- Isometric proprioceptive input
- Focus on breathing

Arm Pressing
(edge of chair/ own knee)

A. Arousal Regulation

Beware of own state of arousal level at the beginning of class (Video)



B. Attention Regulation

- Attention: HERE & NOW
  - ◆ADHD children spend most of their time living in the past or future

- Physical Exercise is the best way for them to experience HERE & NOW

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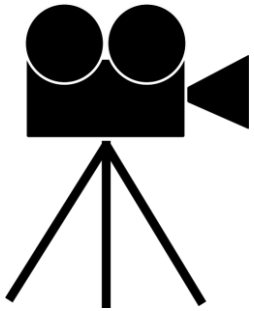
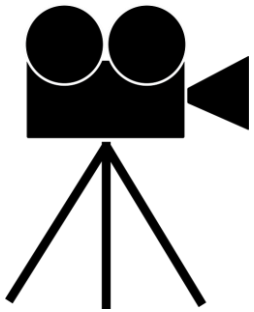
B. Attention Regulation

Yoga exercise with audio attention (Video)
(Close eyes, Listen to clap sound and Change movement)



B. Attention Regulation

Aerobic exercise with YouTube Video (Video)



B. Attention Regulation

- Aerobic exercise
  - At moderate level of intensity over a period of time (> 20 min, at least 2-3 times/week)
    - Consume excess energy & boost attention
  - Encourage parent for habitual aerobic activities
    - Swimming, cycling, dancing, etc.

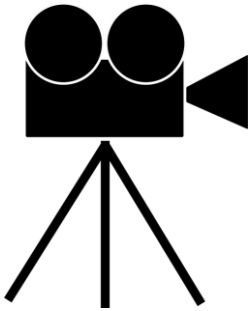
C. Motor planning & coordination exercise

- Motor planning & coordination exercise
  - With challenging elements that require logical thinking and task analysis
    - Train the ability to plan appropriate actions and control body movements

- Children with Predominantly Inattentive Presentation may need more preparation training in core strengthening and balance exercise

C. Motor planning & coordination exercise

Respond to called number (Video)



D. Executive Functional Training

Inhibitory & Emotion Control

Working Memory

Restructuring & Management Capabilities

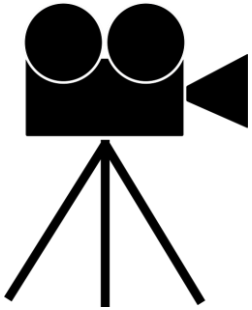
- Response inhibition
- Emotional control
- Sustained attention
- Working memory
- Task initiation
- Planning/ prioritization
- Organization
- Time management
- Goal-directed persistence
- Flexibility
- Metacognition

D. Executive Functional Training

- Using EF cards as visual cue

D. Executive Functional Training

Inhibition & Emotion Control (Video)



Home Exercise and Application

- Practise it at home with parents/sibling
- Notice which EF card is helpful for better performance and share it with peers next session
- Integrate into daily routine

e.g. check arousal level before and during homework➔ do regulation exercise if needed

協康會物理治療部
兒童家居訓練記錄表

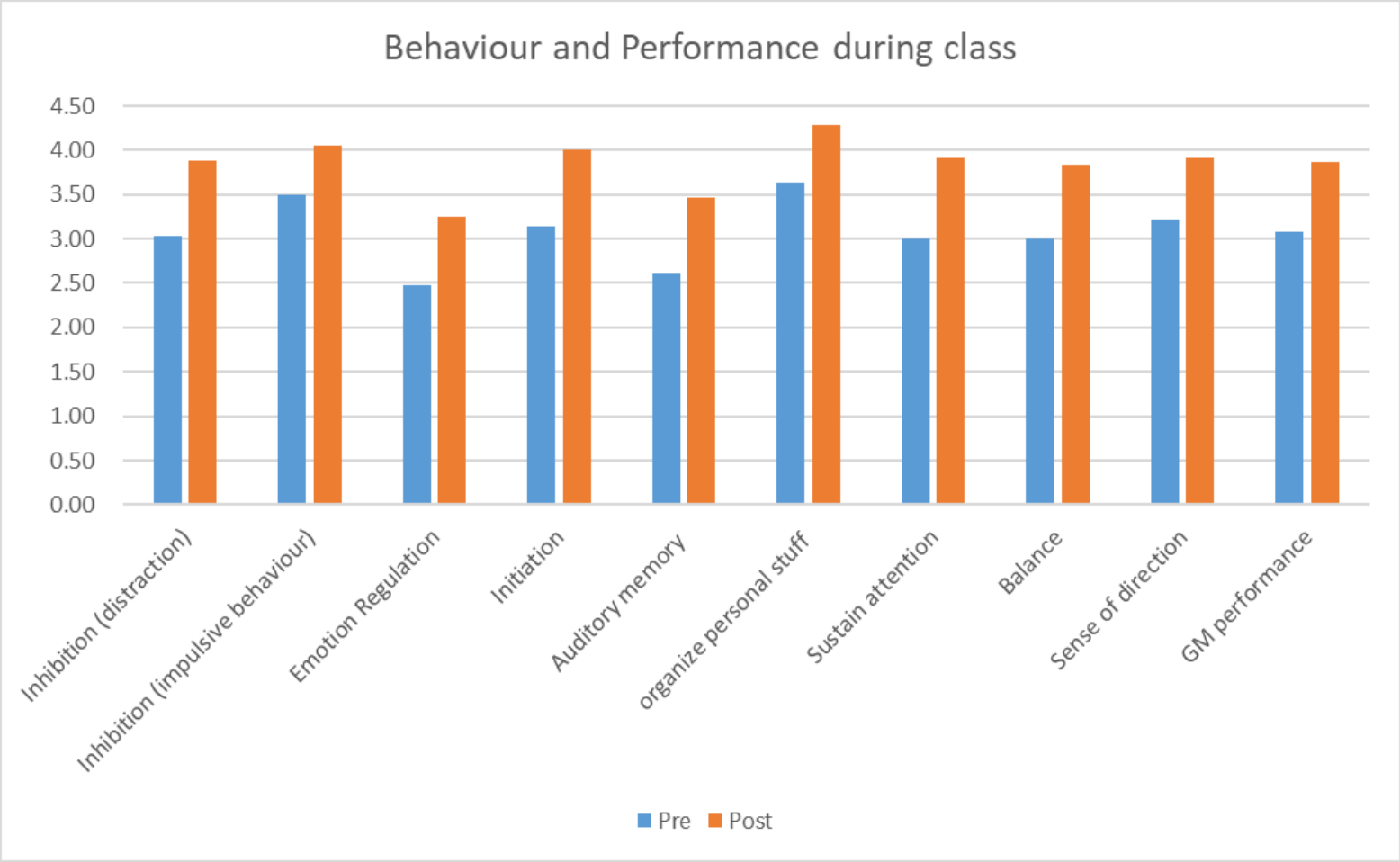
兒童姓名：_____ 日期：11/5/2024

訓練項目	訓練日期	表現記錄	功能圖卡
1)行 8 字 (身體協調及覺知動作) 站於 8 字中間，向右/左開始行， 轉頭向對側左/右			
2)協調及抑制反應運動 --跟 YOUTUBE 連結做運動 https://www.youtube.com/watch?v=b2BISwmDsQ3)			
3)神射手(反應抑制) 成人與童面對面站立，中間放一籃球/足球，猜包剪揼，贏者立即踢波，輸者立即用腳踏著波，以防被踢走			

✓ 自行完成　✓ 協助下完成　✗ 未能完成　○ 沒有練習

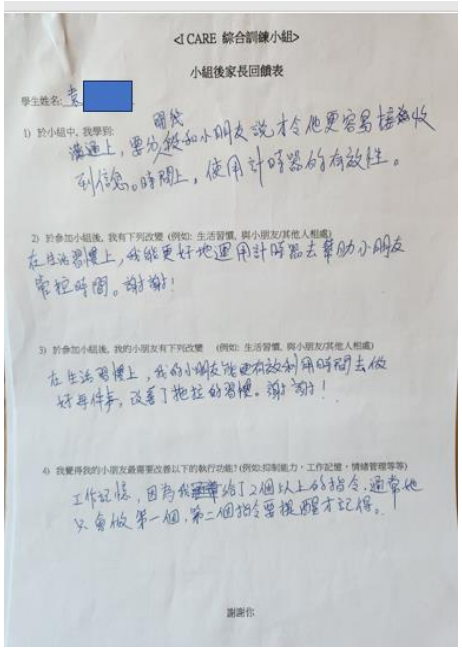
<<我們建立習慣，然後習慣成為我們>>

Effectiveness & Progress



Effectiveness & Progress

- Post group Evaluation form from parents
  - ➢ Parents learned some skills and can apply them into daily life
    e.g. timer; arousal level chat; EF card
  - ➢ Both child and parents have some changes
    e.g. time management; task initiation; emotion control; way of communication



Effectiveness & Progress

- Build up new habit and integrate into daily life
  - Action with mindfulness
  - More self-awareness and regulation
  - Regular exercise

Effectiveness & Progress

- Enhance child's self-confidence

- Facilitate good rapport between child and parents
  - conscious communication

ADHD Training Groups - Social Communication

Ms Vivian LAU, Speech Therapist
of
Heep Hong Society

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Content

- Social communication skills of ADHD students
- Social communication training groups:
  - Training goals and strategies used
  - Effectiveness and progress
  - Parent involvement and feedback

ADHD and Language Impairment

- Comorbidity of ADHD and Language impairment ranges from 8% to 90% depending on the source and type of sample (Brown, 2009)

Deficits in Receptive Language	Deficits in Expressive Language
Following directions	Recalling and formulating sentences
Understanding concepts and spoken paragraphs	Producing coherent and organized narratives
Semantic relationships	Retrieving words in conversation
Understanding different sentence structures	Expressing emotion

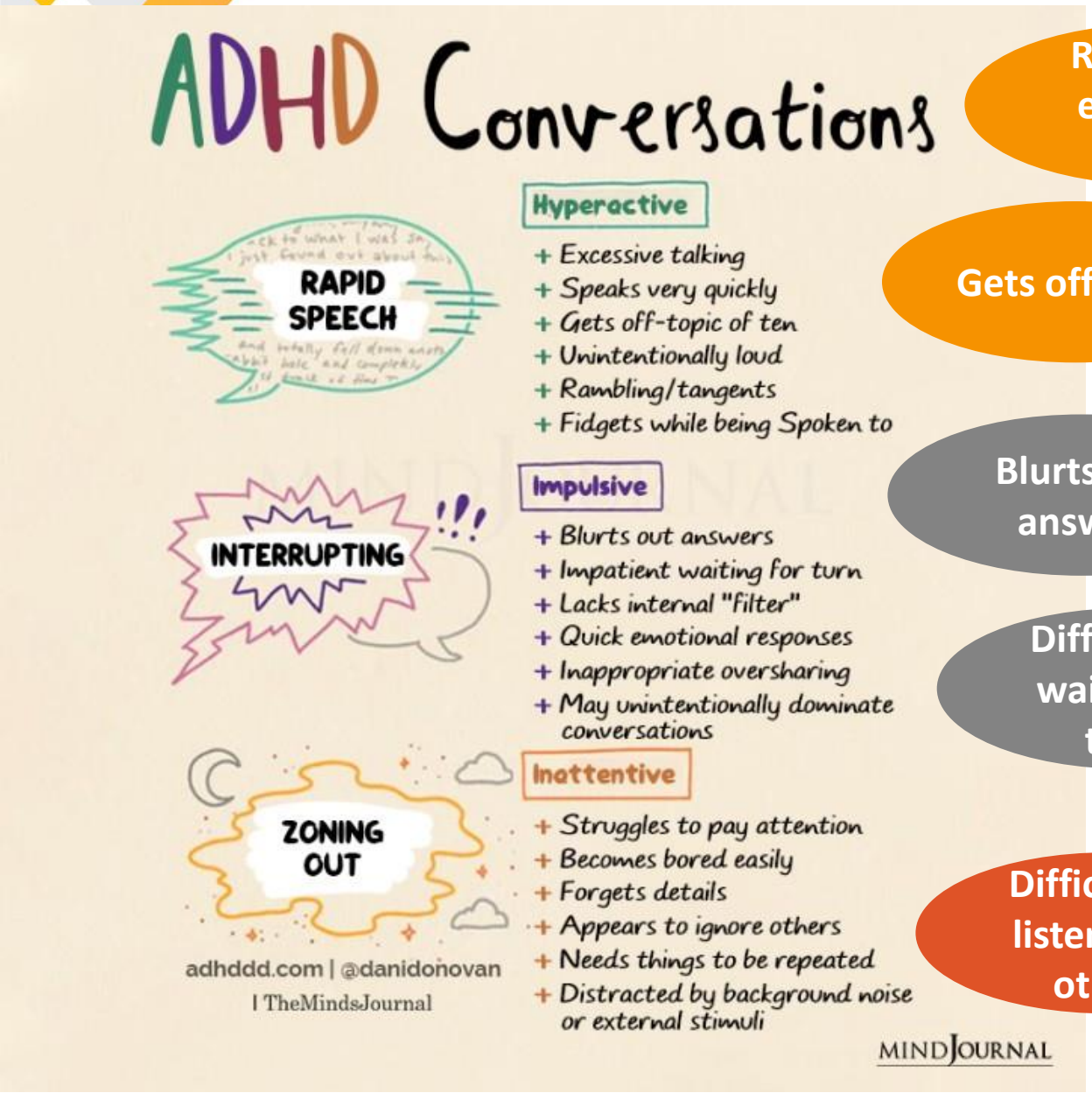
(DaParma, Geffner, & Martin, 2011; Geffner, 2006)

ADHD and Social Communication

- Even for ADHD-only children, evidence shows a strong association between ADHD and communication disorders

- The executive function deficits result in challenges in:
  - Monitoring of communication and comprehension
  - Discourse organization and cohesion
  - Inferencing
  - Pragmatic interaction
  - Problem solving

(Westby & Watson, 2021)



Rapid and excessive talking

Shares scattered thoughts

Gets off-topic

Blurts out answer

Interrupts or intrudes on others

Difficulty in waiting for turns

Misses information or social cues

Difficulty in listening to others

ADHD and Social Communication

- Problems in social communication
  - Poor perspective-taking
    - Difficulty in reading essential verbal, non-verbal and situational cues to respond with social expectations
  - Lack of self-directed speech
    - Difficulty in modulating emotional reactions and controlling interpersonal behaviours
  - Poor emotional regulation
    - Worsening peer relationships

Research studies on Social Skills Training

- Researchers explained that the social problems in ADHD resulted from inconsistent performance rather than a lack of social knowledge (Aduen et al., 2018)

- In a systematic review, the treatment efficacy of stand-alone social skills training was found to have inconsistent results (Willis et al., 2019)

Research studies on Social Skills Training

- Social communication difficulties in ADHD children were found to be a downstream consequence of poor inhibitory control (Rints, McAuley, & Nilsen, 2015)

- Improvements in social skills were observed in studies targeting cognitive training for executive functions (Hannesdottir, Ingvarsdottir, & Bjornsson, 2017; Qian et al., 2017)

- Providing increased reinforcement and reminders of appropriate social behaviour were recommended to enhance the treatment efficacy of social skills training (Mikami, Smit, & Khalis, 2017)

ADHD Social Skills Training Groups

- Features of our groups:
  - Integrate executive functions (EF) within social skills training
  - Encourage children to apply EF tools in different social contexts
  - Provide immediate reminders and feedback to reinforce positive behaviours
  - Promote learning through GAMES and EVALUATION

Training Areas and Goals

- Auditory Attention and Comprehension
  - Attentiveness to auditory information
  - Listening to and processing information using "ears, eyes and brain"

- Conversational Skills
  - Timing of speech
  - Turn-taking in conversation
  - Topic maintenance

Training Areas and Goals

- Emotion Regulation
  - Awareness of self-emotions
  - Use appropriate methods to regulate emotions
- Perspective Taking
  - Reading non-verbal communication cues
    (e.g. posture, eye contact and facial expressions)
  - Awareness of others' thoughts, feelings and intentions
  - Regulating self-behaviors
- Problem Solving
  - Identify appropriate solutions to problems

Group Structure

- Session starts with
  - Activity to recall skills taught in the previous session
  - Quick review on homework

Group Structure

Review

Thematic Learning

Practice & Application

Evaluate

Personalize

- Introduce 1-2 EF tools
- Relate the tools to social communication skills
- Visual Strategies

  (EF tools, emotion regulation & social skills)

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Group Structure

Review

Thematic Learning

Practice & Application

Evaluate

Personalize

- Game-based activities
- Application of EF tools and social communication skills

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Group Structure

Review

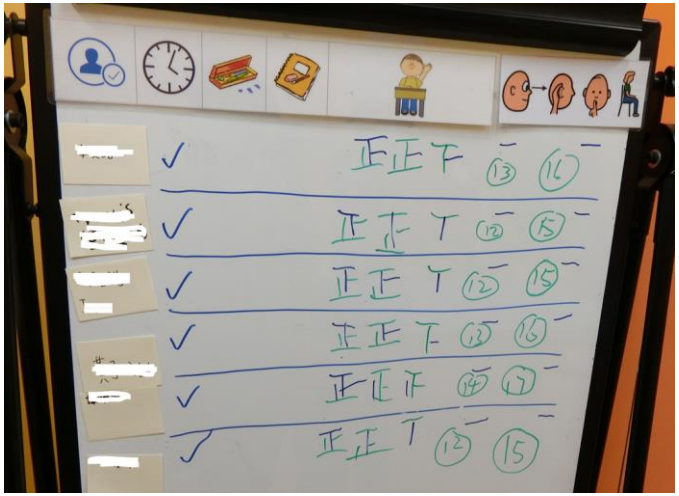
Thematic Learning

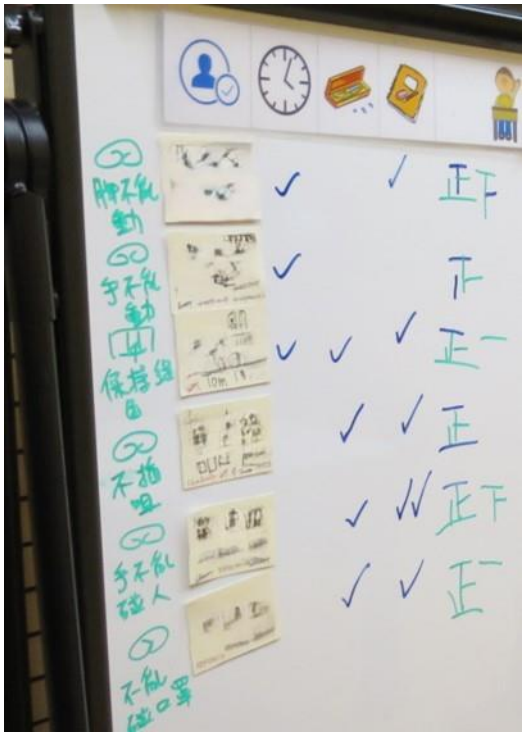
Practice & Application

Evaluate

Personalize

- Reinforcement System
  - Token economy
  - Individual goal





Group Structure

Review

Thematic Learning

Practice & Application

Evaluate

Personalize

- Self-evaluation
- Peer Evaluation

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Group Structure

- Homework
  - Worksheet
  - Home plan
  - Activity suggestion
- Generalization

Parent Involvement

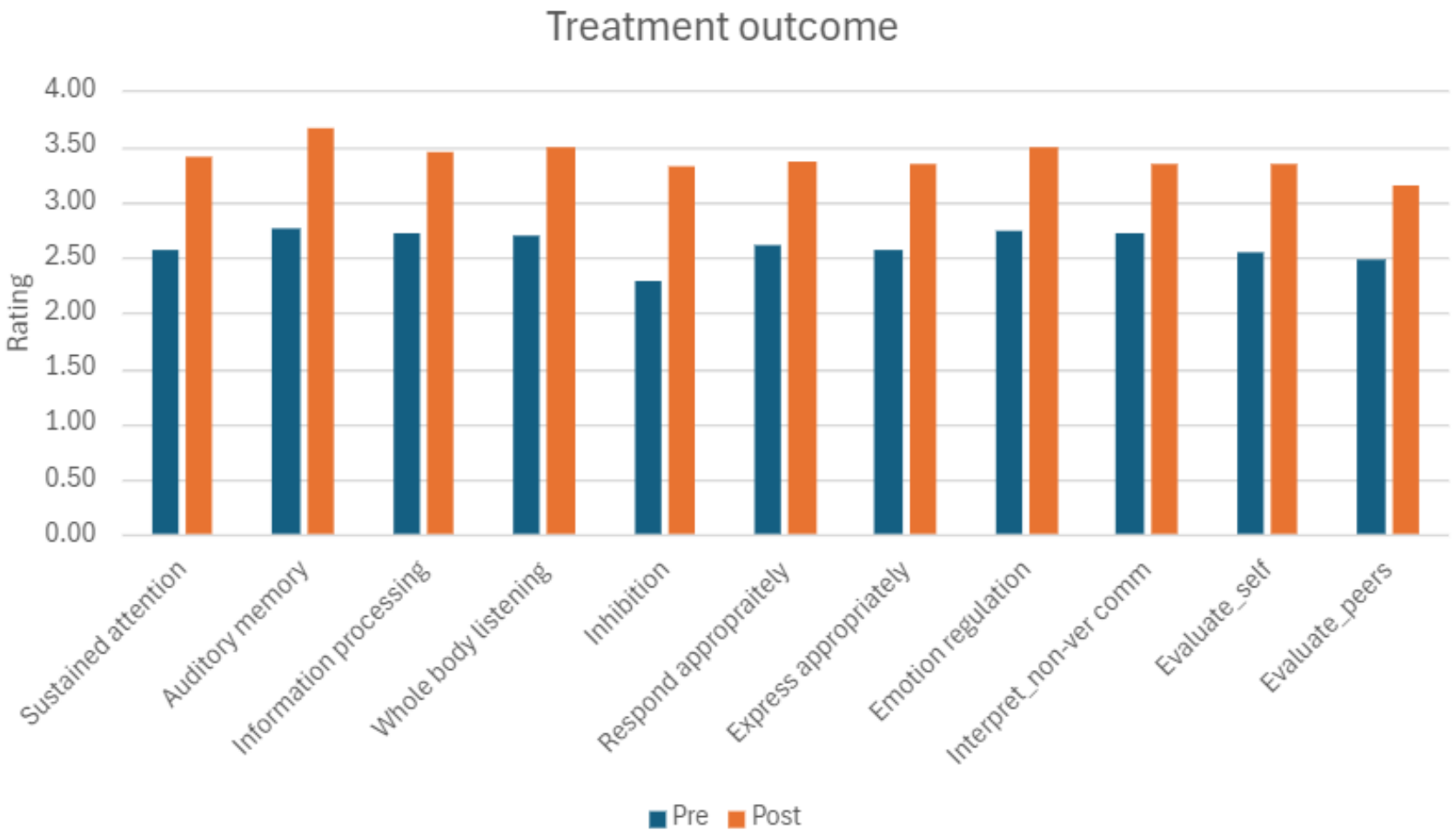
- Briefing session before groups start
  - Explain the aims & structure of the group
- Education after each session
- Individual Consultation
  - Offer feedback addressing parents' concerns

Effectiveness and Progress

- Pre-tests and post-tests using an observation checklist were conducted to evaluate students' progress

- Feedback from parents was collected during debriefing sessions and through questionnaires

Effectiveness and Progress



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Effectiveness and Progress

- Results
  - Improvements were observed in both EF skills and social communication skills
  - The most significant improvement was observed in inhibition
    - Reduced incidents of interrupting & excessive talking
    - Learned to think before speaking
  - Improved attention during the sessions
  - Increased awareness of one's emotional state and use of regulation strategies

Effectiveness and Progress

- Effectiveness of strategies
  - EF tools
    - ➢ Children were able to understand the concepts and showed increased awareness in applying the tools in social contexts
    - ➢ The tools served as a common language to provide quick reminders and helped build self-directed speech for self-regulation
  - Game-based activities & reinforcement
    - ➢ Better engagement
    - ➢ Enhanced motivation and promoted positive behaviours
  - Self & peer evaluation
    - ➢ Enhanced awareness of individual performance
    - ➢ Improved self-confidence and peer relationships

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Parents' feedback

- Children showed improvements in various aspects
- Children tried to apply the skills learned at home and in school settings
- Parents learned skills to manage children's behaviour and facilitate communication skills

XX在姑娘帶領的課堂中，改善了與人相處的問題，更明白到合作的重要性，學到了相處的技巧。

小朋友上堂後語言的溝通和表達能力都有進步，情緒比未上堂前也改善了，會控制自己的情緒，沒那麼容易發脾氣。

XX能應用法寶在學校作上課之用，嘗試用令人舒服的方式和同伴互相合作。

自從上堂後，加深了對ADHD小朋友的了解，讓我掌握了管教小朋友的技巧，獲益良多，也大大改善了親子關係，令我唔再對小孩的未來徬惶。

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PARENT/ CARER SUPPORT

Parent/ Carer Support

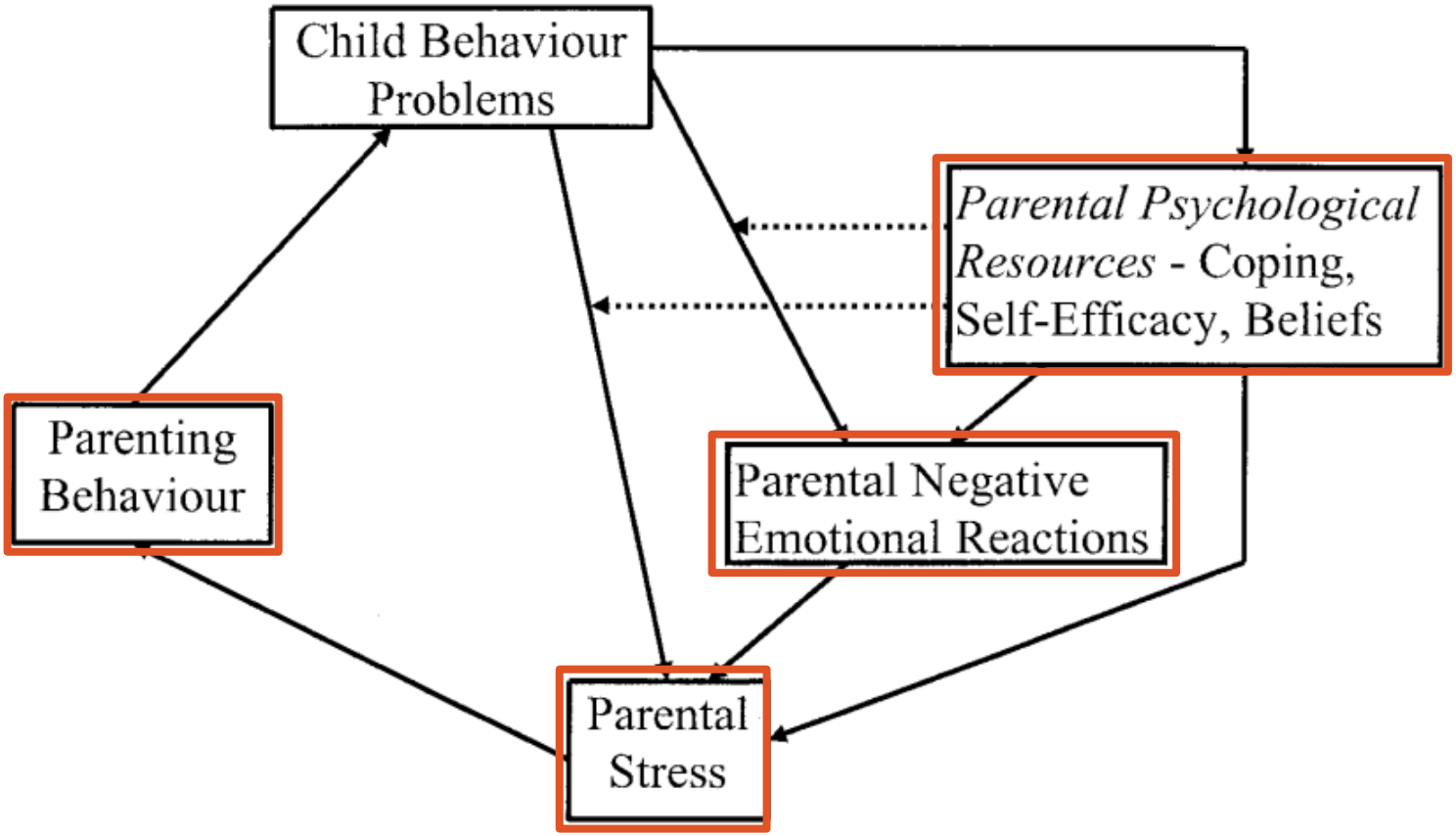


Figure 2.

Expanded model illustrating key variables affecting the relationship between child behaviour problems and parental stress (dotted lines indicate potential moderated effects).

(Hastings, 2002)

Parent/ Carer Support

Children aged 5 years and over and young people

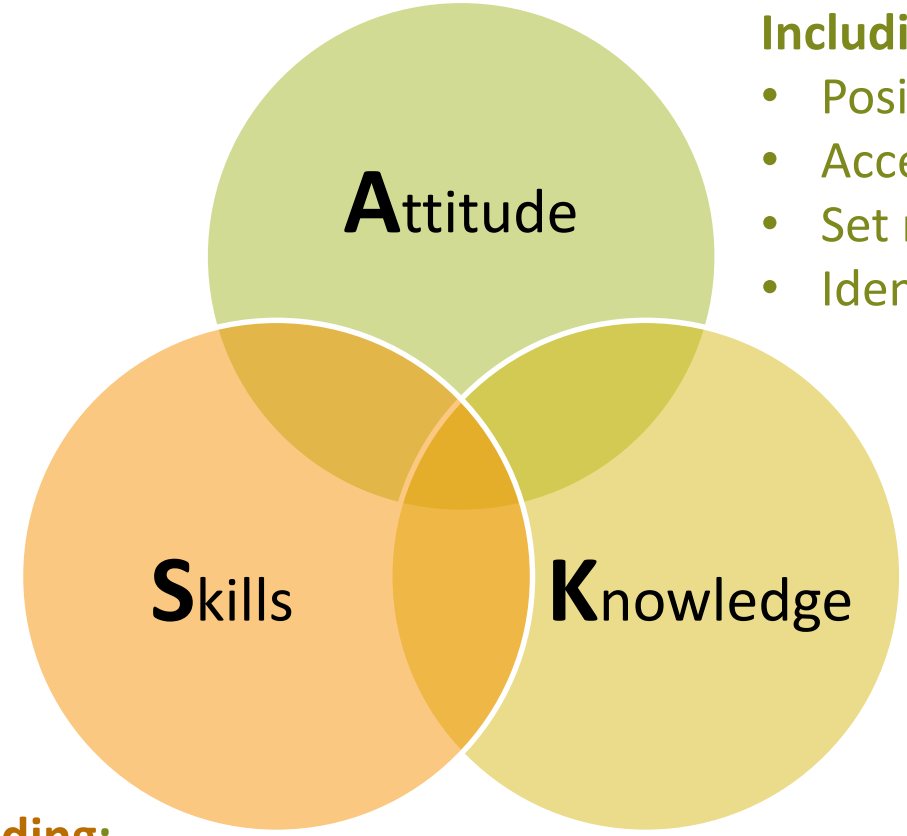
These recommendations, covering children aged 5 years and over and young people, are for healthcare professionals with training and expertise in diagnosing and managing ADHD. March 2018 – medicines used for treating ADHD did not have a UK marketing authorisation for children aged 5 years or under (off-label use). See NICE's information on prescribing medicines.

1.5.10 Give information about ADHD (see recommendation 1.4.3) and offer additional support to parents and carers of all children aged 5 years and over and young people with ADHD. The support should be ADHD focused, can be group based and as few as 1 or 2 sessions. It should include:

- education and information on the causes and impact of ADHD
- advice on parenting strategies
- with consent, liaison with school, college or university (see recommendation 1.4.12)
- both parents and carers if feasible. **[2018]**

Attention deficit hyperactivity disorder: diagnosis and management, NICE guideline, National Institute for Health and Care Excellence, https://www.nice.org.uk/guidance/ng87/chapter/Recommendations#managing-adhd

Parent/ Carer Support



Including:
- Positive parenting belief
- Acceptance and understanding
- Set realistic expectation
- Identify strengths of child, etc.

Including:
- Understanding of ADHD
- Cause and impact of ADHD
- ADHD and EF
- Principles of Positive parenting, etc.

Including:
- Positive parenting skills
- EF strategies for children with ADHD
- Handling skills of children's behaviour, etc.

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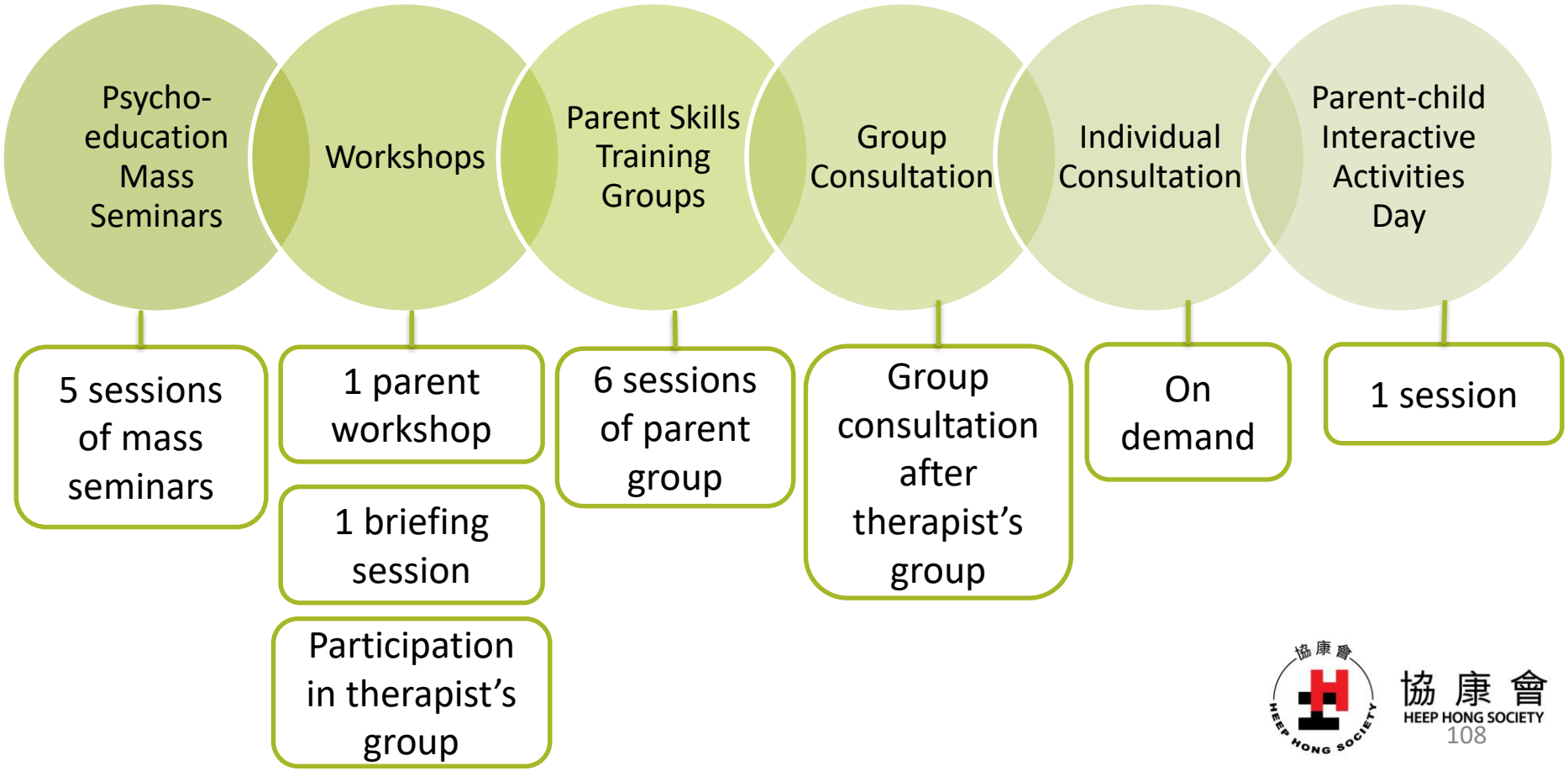
Parent/ Carer Support

Comprehensive Support for Parents / Carers

- Conducted by specialists (EP, SW, OT, PT, ST)



Mass Seminars and Workshops

講座內容
第一節：AD/HD孩子的行為管理及正向教養 • 何謂AD/HD • AD/HD行為管理策略 • 父母管教技巧及正向教養
第二場：溝通篇 • 認識AD/HD兒童的語言溝通表現 • 介紹AD/HD兒童語言溝通的訓練目標及相關的訓練策略 • 建議以提升執行功能為基礎的語言溝通訓練活動
第三場：運動篇 • 認識如何透過運動改善AD/HD兒童的專注力及執行功能（ICARE 綜合協調訓練策略） • 了解不同類型AD/HD兒童的訓練方法及實例分享 • 了解如何將訓練融入日常生活
第四場：學習篇 • 講解影響AD/HD兒童學習表現的因素 • 介紹改善兒童學習表現的方法(個人、活動、環境) • 提供針對不同類型AD/HD兒童的執行功能的訓練方法
第五場：經驗分享篇 • 以過來人身份，分享AD/HD患者的成長經驗及感受 • 與同樣患有AD/HD的媽媽如何相處，及解決親子之間的衝突 • 家長如何幫助自己緩和AD/HD帶來的影響

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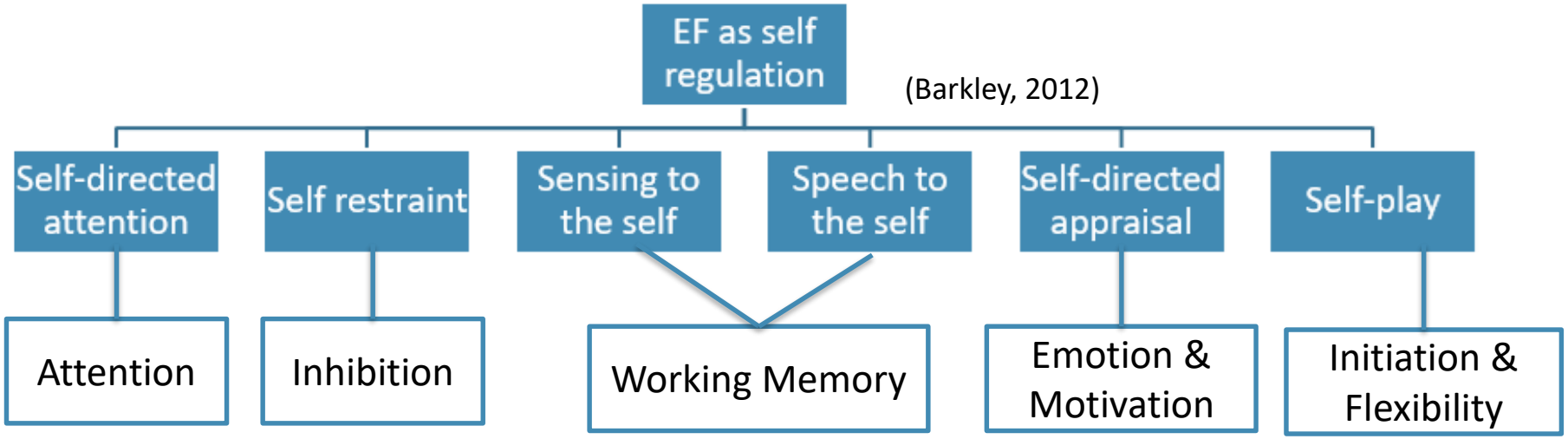
Parent Skills Training Groups

- 6 sessions of parent group
- Adopted the EF framework of Barkley (2012)



Session format:

- Lecturing
- Experiential activities
- Self-reflection
- Case study
- Discussion
- Video modelling

Parent-child Interactive Activities Day

- Application of EF skills (students) and parenting skills (parents) in daily life contexts
- Conclusion and celebration

Effectiveness

Parents have **increased confidence** in handling their children's ADHD-related problems	Over 91%
Parents have **acquired knowledge and skills** to handle child's ADHD-related problems	Over 97%

Average % in past 4 years (2020-2024)

讓我了解和明白孩子的困難、能力及限制。
我會嘗試多欣賞及發掘他的優點及強項！

了解ADHD小朋友需要
什麼，非常有用

如何處理孩子的情緒、
建立親子關係及調整自己的情緒

掌握到務實性的管教策略

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CONCLUDING REMARKS

Casebook on Intervention Strategies

Limitations and Future Direction

- Short intervention period
- Lack of school involvement
- Insufficient resources to strengthen multidisciplinary support
- Insufficient individual consultation for more in-depth support
- More research element is recommended

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