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O PROGRAMA DE INTERVENÇÃO PARENTAL ‘ANOS INCRÍVEIS’: EFICÁCIA NUMA AMOSTRA DE CRIANÇAS PORTUGUESAS DE IDADE PRÉ-ESCOLAR COM COMPORTAMENTOS DE PH/DA



UNIVERSIDADE DE COIMBRA

The Incredible Years Parenting Programme: Efficacy in a sample of Portuguese pre-school age children with AD/HD behaviours

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Early prevention/intervention in disruptive behaviour disorders: Efficacy of parents and teacher programmes
[Grant number: PTDC/PSI-PED/102556/2008]

Overview of Presentation

Introduction
Rationale for the Study
Study Aims
Methods
Results
Discussion
Implications



Introduction

AD/HD in Preschool Years

Introduction

- Symptoms of hyperactivity, impulsivity and/or inattention **can emerge early in preschool years**
 - ✓ **Cause impairment** for the child , family, school
 - ✓ Can be moderately **persistent over time** Harvey et al., 2009
 - ✓ Increase **risk for further negative long-term difficulties** DuPaul et al., 2001
 - ✓ Predict the development of **comorbid problems** (ODD, CD)

- **High developmental changes in this age period:**
 - ✓ **Careful staged approach** to identification/intervention Sayal et al., 2012
 - ✓ Comprehensive and **multidisciplinary assessment**

- **Preschool years: critical moment for early identification/intervention and prime target of investment** (clinicians, policies)



Prevention of negative developmental pathways

AD/HD in Preschool Years

Introduction

Genes X Environmental risk factors

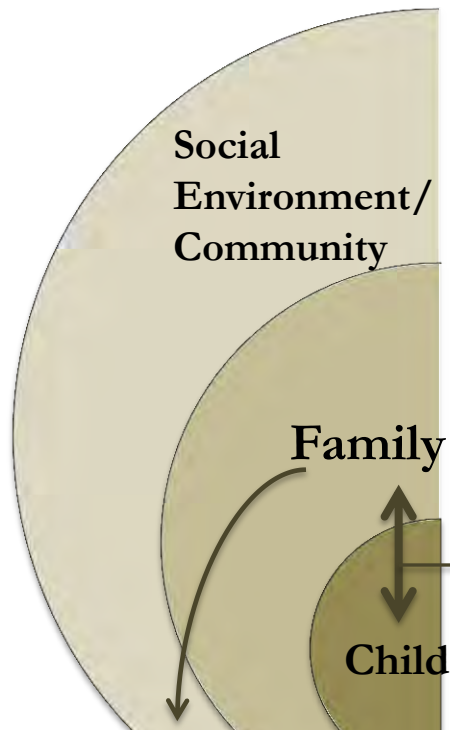
Multiple pathways from risk to disorder

Sonuga-Barke et al., 2005

Potential risk factors

- Negative parent-child interactions
- Dysfunctional parenting
- Low sense of competence
- Stress, marital problems
- Parental psychopathology
- Poorly self-regulated children (difficulty in listening, paying attention,...)

- **Bidirectional** and reciprocal influences
- **Coercive cycle**



*Target **PARENTS**
in early effective intervention*



Psychosocial Intervention: Parenting Programmes

Introduction

- **Evidence-based psychosocial interventions - BPT** strongly recommended as **first-line intervention** for preschool-age children with or at-risk of AD/HD

AAP, 2011; Charach et al., 2011

- ✓ **Psychopharmacological intervention:** children with severe symptoms; after a BPT intervention
- ✓ **PATS Study:** effects lower than in school age-children; increased side effects; limited data of long-term impact; parents concerns and ethical issues

Kollins et al., , 2006; Wigal et al., 2006

Need of effective nonpharmacological intervention for preschool years



Rationale for the Study



Why this Study?

Study Rationale

What do we know from literature and research ?

Early intervention in AD/HD, possibly **more efficacious** in preschool children
Sonuga-Barke et al., 2006

- ✓ Before association with secondary negative outcomes
- ✓ Children's behaviour more prone to change
- ✓ Parents socialization role

Evidence of **PT short-term effectiveness** (RCTs)

e.g., Bor et al., 2002; Jones et al., 2007; Thompson et al., 2009; Webster-Stratton et al., 2011

Growing evidence that effects can be sustained over time

Rajwan et al., 2012

What we tried to accomplish ?

Target **early intervention**

Examine PT effectiveness
in a **Portuguese sample**

Evaluate 12-month effects: enlarge support



Why the Incredible Years Parenting Programme?

Study Rationale

- **Widely researched** (↑ 30 years), **empirically supported** (replicated) **psychosocial intervention for behaviour problems**
- Recent research: **IY is effective for pre-schoolers with AD/HD**
Jones et al., 2007; Webster-Stratton et al., 2011
- Target **different systems** (ecological perspective of child problems)
- **IY previously translated and implemented in Portugal** Webster-Stratton et al., 2012
- **Need of evidence-based interventions in Portugal**



Study Aims



Main Purpose

Study Aims

- | | |
|--|--------------------|
| ▪ Evaluate IY short and medium-term efficacy (6 and 12-months after baseline) in reducing hyperactive behaviours | Study 1
Study 2 |
| ▪ Analyse the maintenance of post-intervention effects
(at 12-month FU) | Study 2 |
| ▪ Explore the differences in 12-month changes between two groups of children with different levels of initial hyperactivity behaviour | Study 3 |
| ▪ Examine mothers' attendance, satisfaction and IY acceptability | Study 1
and 3 |



Methods

Study design
Participants
Procedures
Instruments
Intervention

Study Design

Methods

Longitudinal Study

Time/Assessment

T1
Pre-assessment

Screening

Baseline

Main trial



Randomization (3:2)

Intervention
Group
IYG (n = 52)

Control Group
WLG (n = 48)

IY

n = 50

n = 37

AD/HD
subsample

T2

Post- assessment (6 M)

IY

T3

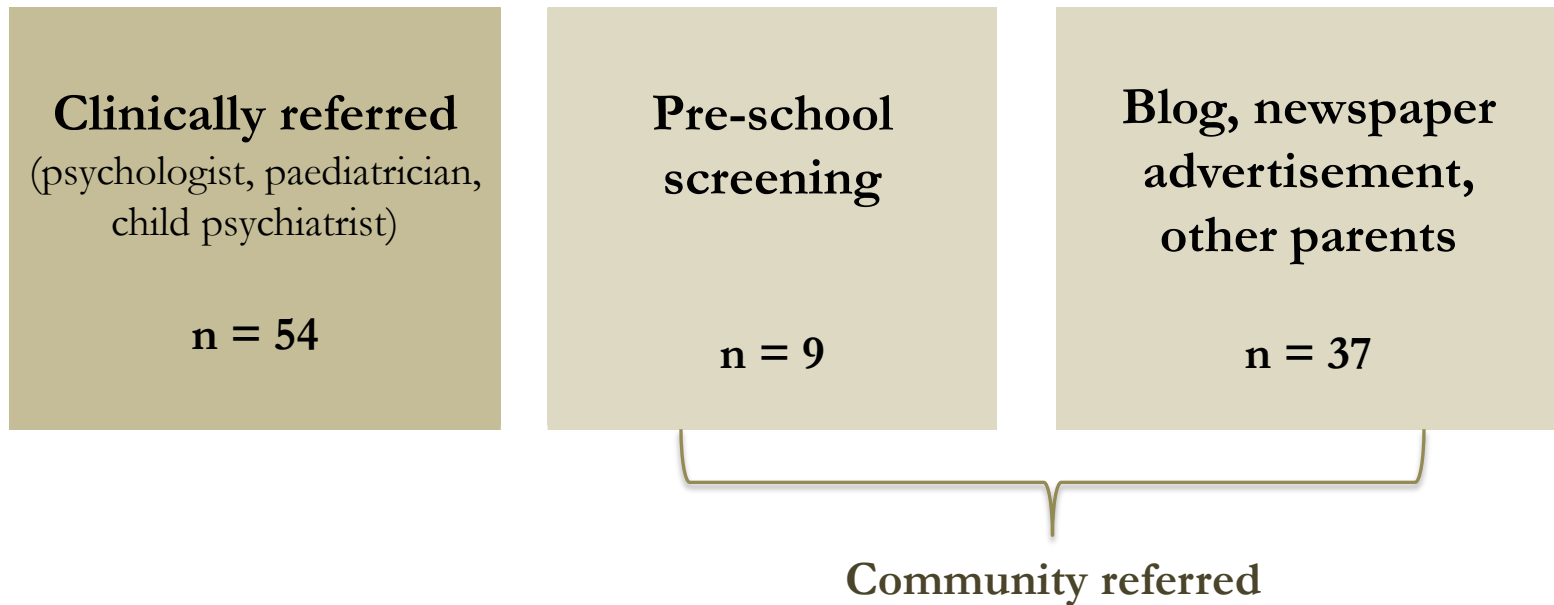
Follow-up assessment (12 M)

n = 44



Screening

Methods



Inclusion | Exclusion Criteria

Methods

Inclusion Criteria

- 3 – 6 years old
- **SDQ-HY or CP \geq Portuguese borderline cut-offs**
+
- **WWPAS \geq Portuguese at-risk cut-off (80th percentile)**

Exclusion Criteria

- Diagnosis of neurological or developmental disorder (autism) and severe developmental delay
- Pharmacological or psychotherapeutic intervention

Participants

Methods

Child Variables

IYG

WLC

Socio-demographic data

Age (months)	55.92±10.9	55.71±11.03
Gender (male)	71%	73%

Clinical Characteristics

AD/HD behaviors

WWPAS ($\geq 95^{\text{th}}$ percentile)	65%	58%
PKBS-O/I (85 th to 94 th percentile)	29%	30%
PKBS-O/I ($\geq 95^{\text{th}}$ percentile)	56%	49%

Social Skills

PKBS-SS ($\leq 15^{\text{th}}$ percentile)	63%	56%
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Oppositional/aggressive comorbid behaviours	79%	70%
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Participants

Methods

Primary Caregiver (Mother): Variables

IYG

WLC

Socio-demographic data

Mother

92%

96%

Age (years)

36.37 ± 5.66

34.65 ± 5.94

Marital Status: Married/as married

83%

73%

Years of education

13.9 ± 3.89

13.55 ± 3.6

Family SES^a: Medium

42%

48%

Clinical Characteristics

Depressive symptoms (≥ 17)

23%

29%

AD/HD symptoms (≥ 9 symptoms score)

15%

21%



Procedures

Methods

Authorizations

Author's approval for using the programme

Ethical Approval

Portuguese National Committee of Data Protection (CNPD)
Medical Ethical Committee

Informed Consent

Written consent to take part of a RCT

Preliminary Study

Pilot-study

Study Procedures

Dissemination

Screening

First interview: researcher

Baseline assessment: independent trained evaluators (blind)

Randomization: researcher

T2 and T3 assessments: independent trained evaluators



Instruments

Methods

Children Behaviour: Mothers' and Teachers' Reported Measures

Werry-Weiss-Peters Activity Scale (WWPAS) Routh, 1978

Preschool and Kindergarten Behavior Scales – 2nd Edition (PKBS-2) Merrell, 2002; Major, 2011

Children Behaviour: Mother's Interview

Parental Account of Childhood Symptoms (PACS) Taylor et al., 1986

Sense of Competence, Parenting Practices, Psychological Adjustment: Self-Reported Measures

Parenting Sense of Competence Scale (PSOC) Johnston & Mash, 1989

Parenting Scale (PS) Arnold et al., 1993

Beck Depression Inventory (BDI) Beck et al., 1961; Vaz Serra & Pio Abreu, 1973



Instruments

Methods

Mother-Child Interaction Behaviours : Observation Measure

Dyadic Parent-Child Interaction Coding System (DPICS) Eyberg & Robinson, 1981

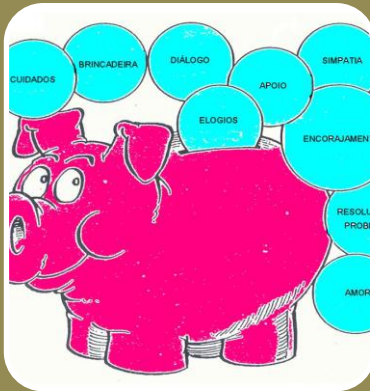
Programme Satisfaction: Self-reported Measures

Weekly Satisfaction Questionnaire Webster-Stratton, 2001

Final Satisfaction Questionnaire Webster-Stratton, 2001

Intervention

Methods



Aims (↑ protective factors ↓ risk factors)

- Strengthen parent-child relationships
- Increase parents' nurturing, positive parenting skills and confidence
- Improve parents skills of emotional, social, persistence coaching
- Encourage effective limit setting, use of non-violent discipline strategies
- Encourage child cooperation and self-regulation
- Increase family support and strengthen family-school relations



Groups of 9 to 12 parents

2 trained group facilitators (total=6)

14 weeks + 2 booster sessions (9 and 15 months after baseline)

2 hours in the evening: university service or mental health centre

Childcare, snacks, make-up sessions

Intervention

Methods



Topics

- Play ; descriptive comments ; praise ; rewards; household rules; routines; clear commands; parents' calming thoughts; **ignoring**; **time-out** ; **consequences** ; **problem solving**
- Main idea: Strong foundations – use liberally; **Top – use selectively**



Strategies: Multiple method approach

- Role-play - practice; video analysis; brainstorming; group discussion of different topics; buzzes; reading materials; completing handouts; buddy calls; leaders' call

Results



Pre-Post Comparison: Study I

Results

Preliminary analysis: baseline

- No significant differences between groups (IYG *vs* WLG), except DPICS coaching variable (IYG > WLG)

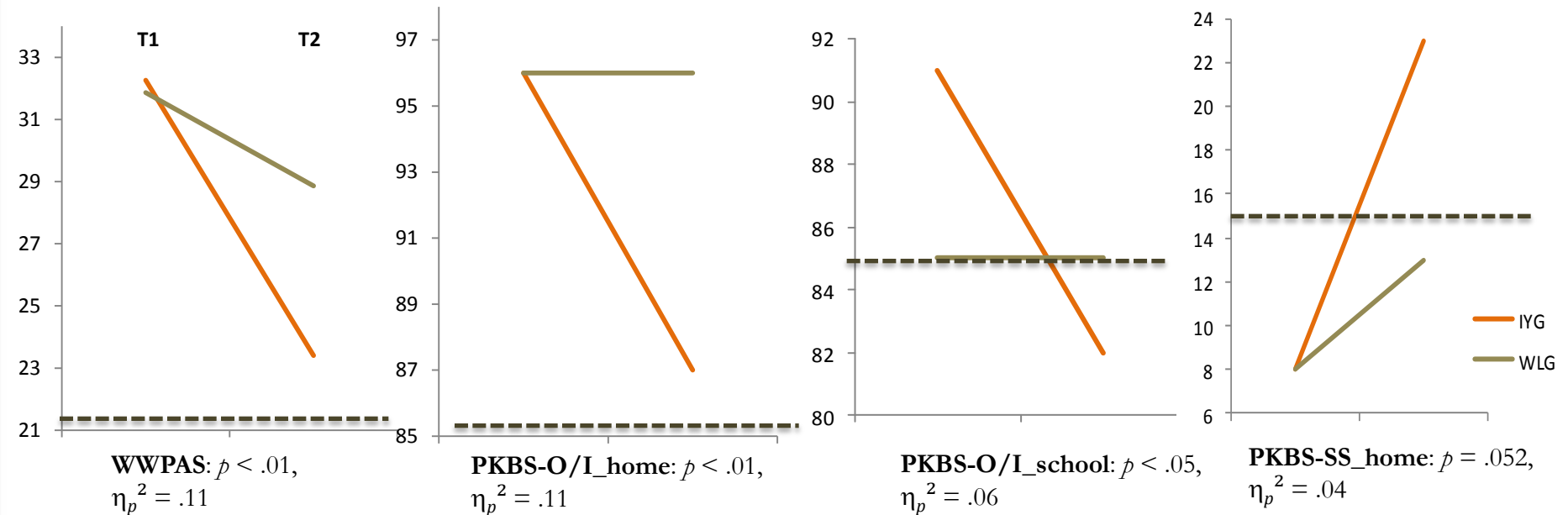
Attrition

- T2 = retention of 87% total participants (IYG > WLG): 100/87
- T3 = retention 85% of IYG participants: 52/50/44

Pre-Post Comparison: Study I (*children variables*)

Results

Repeated measures GLM; Group: between-subjects; Time: within-subjects



Statistical Significant interaction effects (group X time):

- Decrease of reported **attention-deficit/hyperactivity behaviours** at home and at school:
IYG > WLG

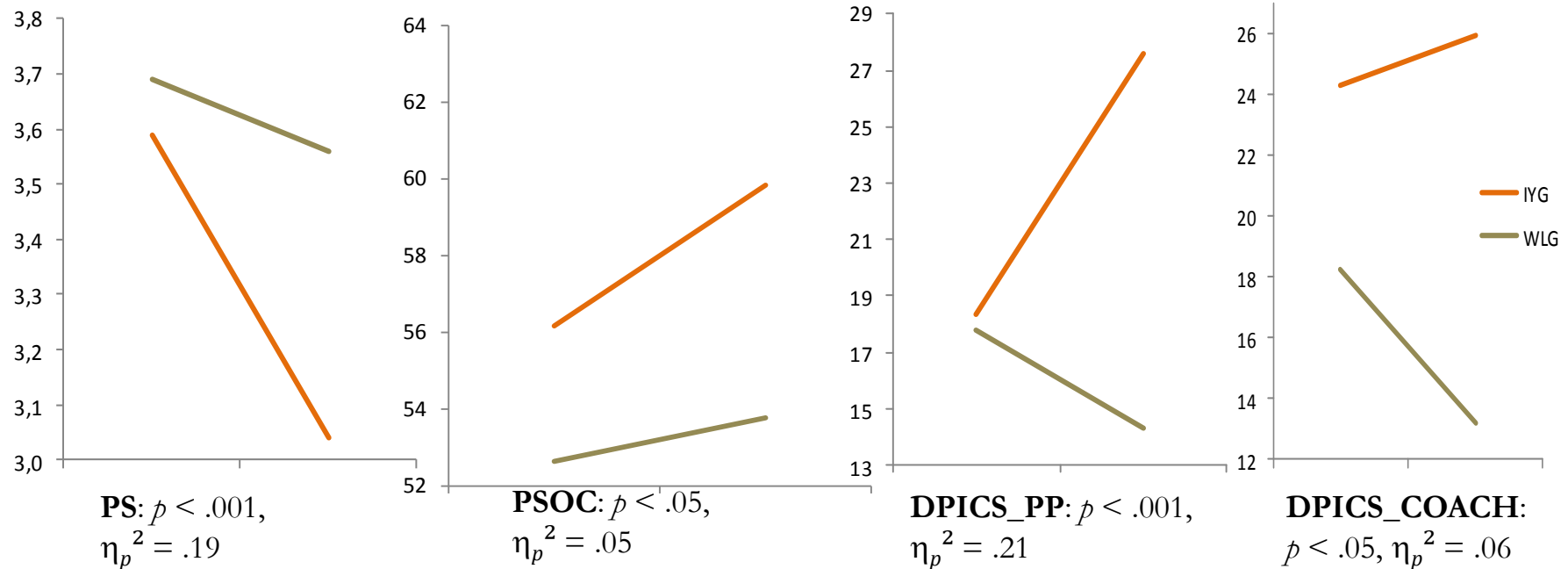
Statistical Marginal interaction effects (group X time):

- Marginal increase on reported (home)/observed **social skills: IYG > WLG**
DPICS-CPS: $p = .053$, $\eta_p^2 = .06$

Pre-Post Comparison: Study I (*mothers' variables*)

Results

Repeated measures GLM; Group: between-subjects; Time: within-subjects



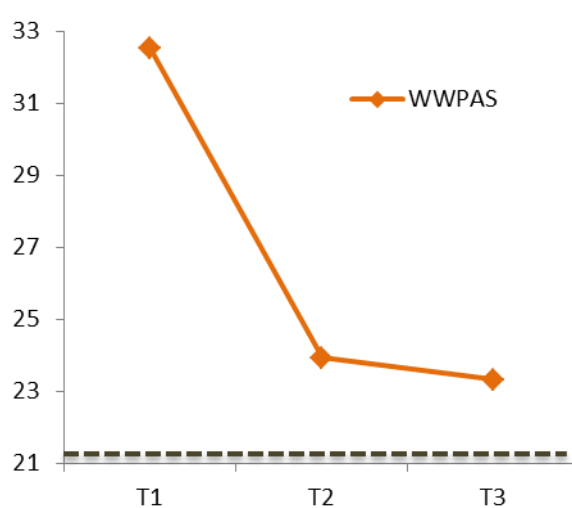
Statistical Significant interaction effects (group X time):

- **Decrease** of mothers' self-reported **dysfunctional discipline practices** (IYG < WLC)
- **Increase** of mothers' self-reported **sense of competence** (IYG > WLC)
- **Increase** of mothers' **observed positive parenting and coaching skills** (IYG > WLC)

12-month effects: Study 2 (*children variables*)

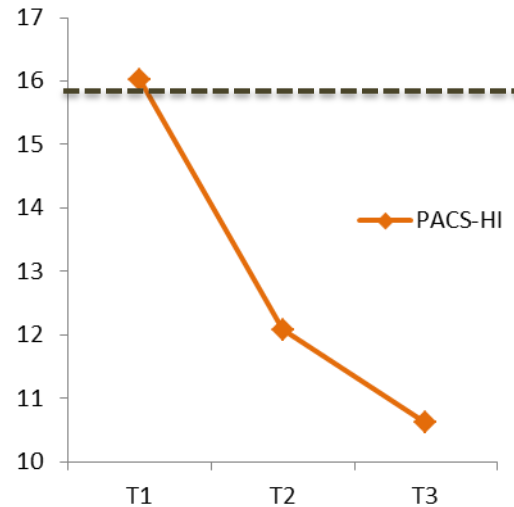
Results

Repeated measures GLM; Time: within-subjects



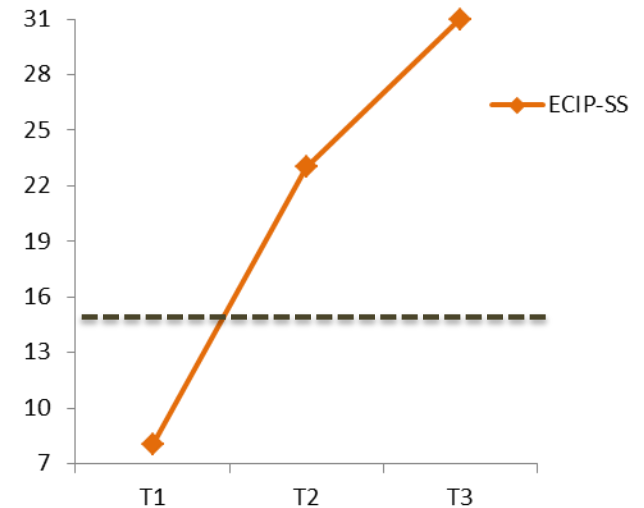
WWPAS: $p < .001$, $\eta_p^2 = .44$

WWPAS_T2-T3: $p = .536$, ns



PACS-HY: $p < .001$, $\eta_p^2 = .35$

PACS-HY_T2-T3: $p = .011$, $\eta_p^2 = .12$



PKBS-SS: $p < .001$, $\eta_p^2 = .32$

PKBS-SS: $p = .111$, ns

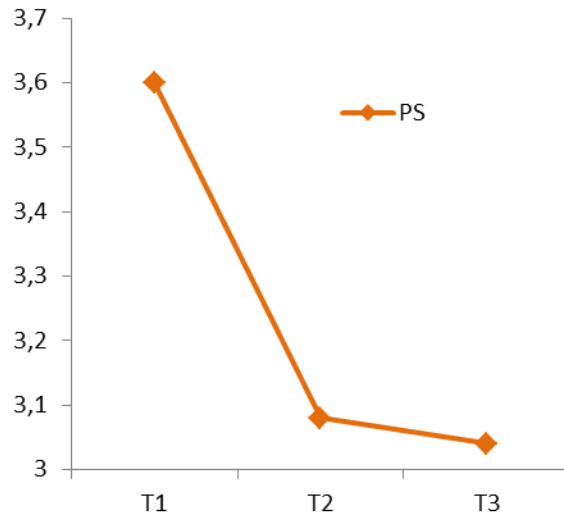
Maintenance of intervention effects (time effect):

- **Changes remained stable**, no significant statistical differences between T2-T3 (ES: <.01 to .05)
- Exception: **Significant statistical decrease in children AD/HD behaviours** (mother's interview) from T2 to T3

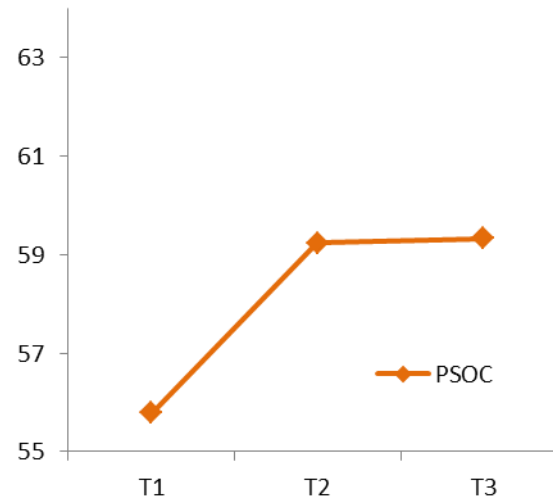
12-month effects: Study 2 (*mothers' variables*)

Results:

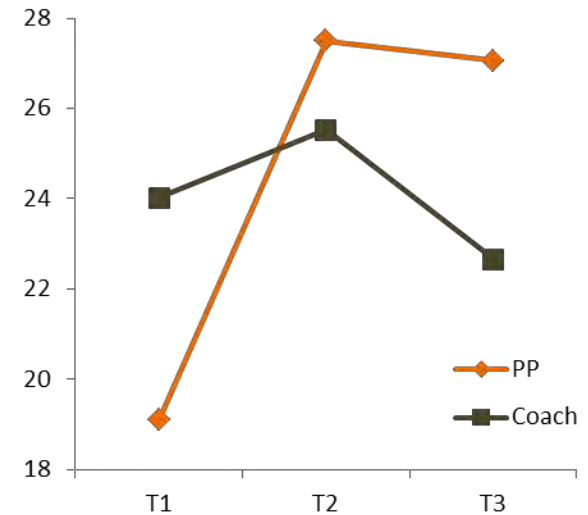
Repeated measures GLM; Time: within-subjects



PS: $p < .001$, $\eta_p^2 = .49$
 PS_T2-T3: $p = .337$, ns



PSOC: $p < .001$, $\eta_p^2 = .20$
 PSOC_T2-T3: $p = .900$, ns



DPICS-PP: $p < .001$, $\eta_p^2 = .23$
 DPICS-PP_T2-T3: $p = .813$, ns
 DPICS-COACH: $p = .407$, ns

Maintenance of intervention effects over time (time effect):

- **Changes remained stable**, no significant statistical differences between T2-T3 (ES: <.01 to .02)
- Exception: **Significance decrease on observed coaching skills** from T2 to T3 (effect faded out by 12 months)

Clinical Significant Reduction of AD/HD behaviours: Study 1 + Study 2

Results

Non-parametric tests

30% reduction of initial baseline scores = clinically significant improvement

Axberg et al., 2007; Webster-Stratton et al., 1989

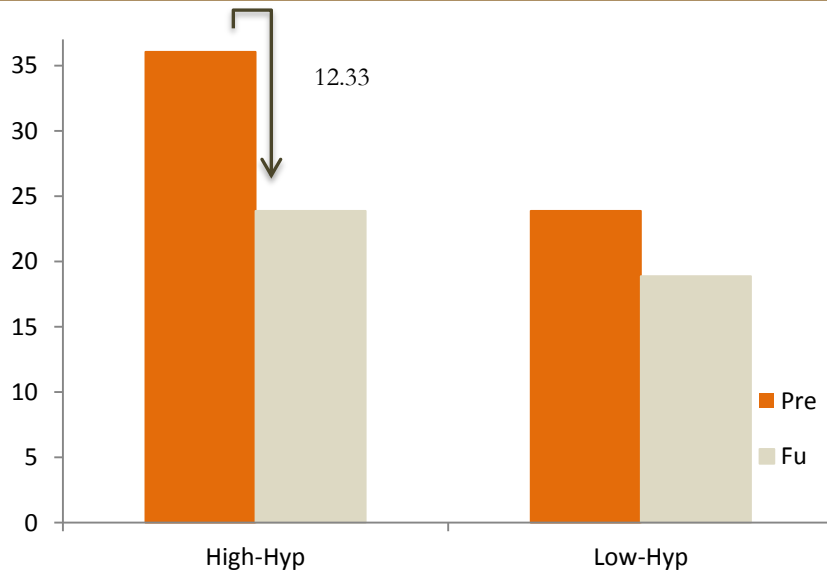
43% IYG *vs* 11% WLG (6 month follow-up) [$\chi^2(1) = 11.66; p = .003$]

59% IYG (12 month follow-up)

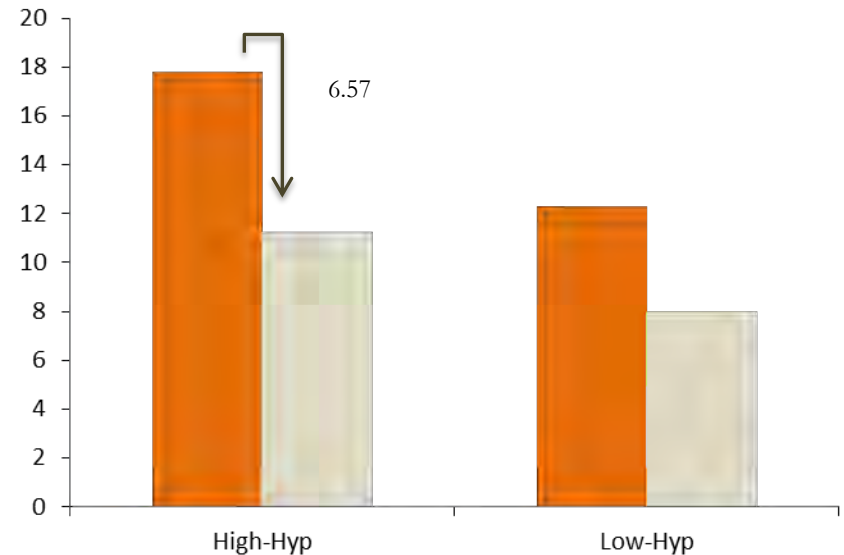
Low and High-Hyperactivity at baseline: Study 3

Results

Mann-Whitney U test; Group high or low-hyp: between-subjects



[WWPAS: $p = .008$]



[PACS-HI: $p = .055$]

- Groups equivalent at baseline, except for AD/HD behaviours (**High > Low**)
- All children improved, but significant differences in changes (T1-T3) on AD/HD behaviours, overreactivity parent practices, and depressive symptoms between groups:

High > Low

[PS-OVER: $p=.018$]

[BDI: $p=.032$]

Programme's Acceptance: Attendance and Satisfaction Variables

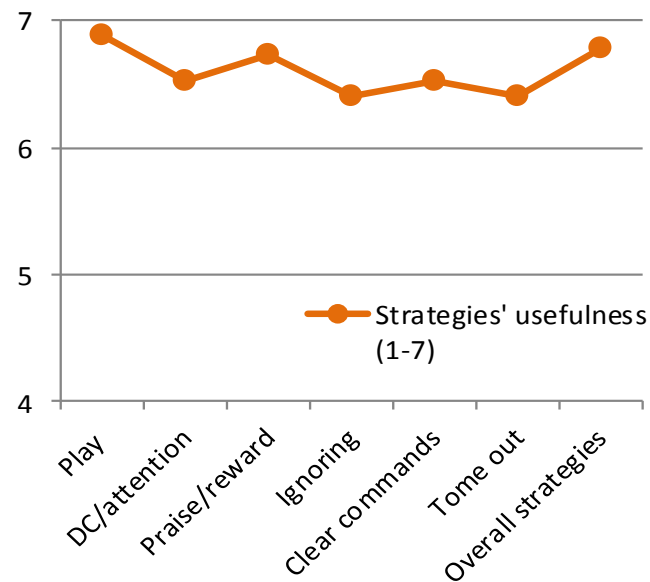
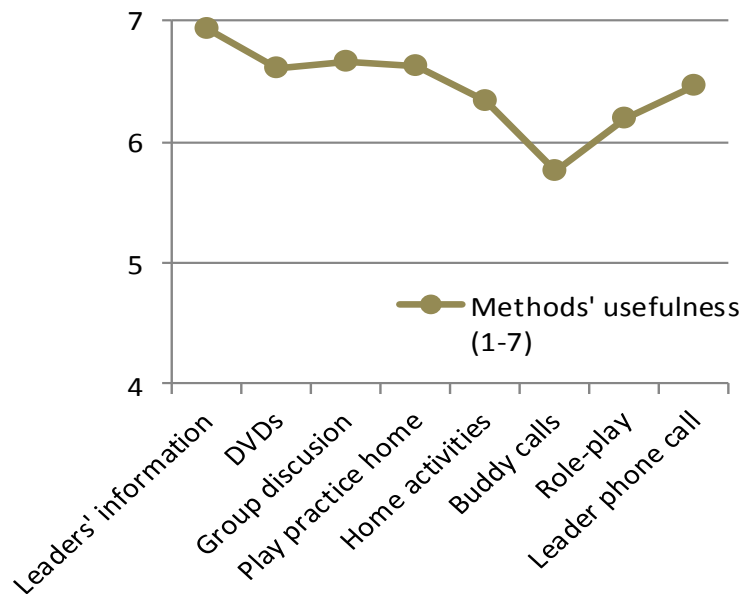
Results
Descriptive data

• Programme attendance rate:

- **High:** 88% on 9 or ↑ sessions (mean: 11 sessions)
- **Dropped out:** 8% (4 mothers < 4 sessions)

• Programme satisfaction:

- **IY approach to change behaviours appropriate** (29%) or **very appropriate** (71%)
- High satisfaction with the **sessions' content and program components** (methods, strategies, leaders, group)





Discussion



Main Conclusions

Discussion

- I. Encouraging results, suggestive of significant short-term intervention effects :
 - **Children: Reduction of AD/HD behaviours (home, school)** [medium ES];
marginal increase of **social skills** (*only at home – target context*)
 - **Mothers: Improvement of positive parenting, sense of competence and less dysfunctional practices** [medium to large ES]
- II. Maintenance of gains from 6 to 12-month after baseline (small ES):
 - **Coaching** effect faded out and **AD/HD behaviours** (mothers' interview)
continued to decrease (*sleep effects?*)

Main Conclusions

Discussion

III. Similar changes for both high and low-hyperactivity subgroups:

- But **High-Hyp** improved more regarding AD/HD behaviours, negative overreactivity practices and depressive symptoms

IV. High acceptability of IY model

Preliminary evidence of IY as a promising:



Early preventive intervention option for
Portuguese children/mothers with similar characteristics



Strenghts

Discussion

- **First Portuguese study** evaluating **IY** in a sample of **preschoolers with AD/HD behaviours**
- **Additional support for early psychosocial intervention** Charach et al., 2011; Rajwan et al., 2012
- **Widely researched intervention model**
- Support form a **highly skilled and motivated team**
- **Methodological strenghts:** longitudinal study and a subsample of a RCT
 - multi-methods (observational measure) and multi-informants
 - blind independent evaluators
 - inter-rater reliability studies
- **Fill in a gap in clinical practice in Portugal** Almeida et al., 2012



Limitations

Discussion

- **Small sample size** (study 3; pre-school teachers and observational measure sample)
- **Absence of a control group at T3** and a normative group
- Sample **socioeconomical characteristics and higher education**
- 80% of the study took place in a **university-based context**
- **Mothers perceptions and reporting bias**
- **Heterogeneous sample:** different risk levels (limitation?)
- **Psychometric properties of some measures** (low internal consistency)
- **Programme barriers**

Cautious Generalization
(sample characteristics; not diagnosed children)



Implications



For Research

Implications

- **Data replication (different contexts and populations)**
- **Larger randomized sample with longer follow-up periods:**
mediators (key ingredients ?) and **moderators of change** (for whom and in what conditions ?) Gardner et al., 2010
- **Analysis of psychometric features of some measures** (Portuguese populations)
- **Intervention integrity study** (facilitator's adherence to protocol)
- **Directly recruit fathers** - larger sample sizes (Fabiano et al., 2012)
- **Compare IY with usual care: What is more cost-effective in the long run?;**
or with other IY set of programmes: Additional benefits?


Lessons Learned: Intervention and Policies

Implications

- **Early identification** (community settings): even low-hyp children
- **Disseminate effective early intervention**
- **Investment in training and supervision** (fidelity process)

IY Basic Parent Programme intervention tested in a portuguese sample: 14 + 2 Sessions

(2001 version; with some content adjustments, tailored to AD/HD needs and characteristics)

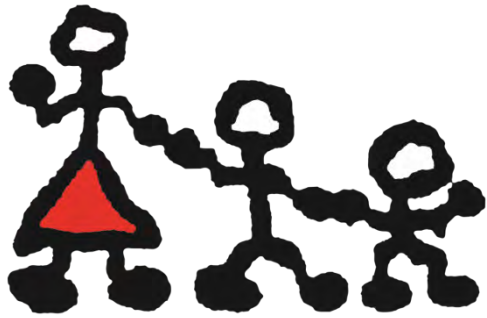
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- **Longer version (flexibility):** reinforce Coaching parenting skills
 - Promote **continuous support** after the end of the programme
 - **Monitor** children with more severe problems



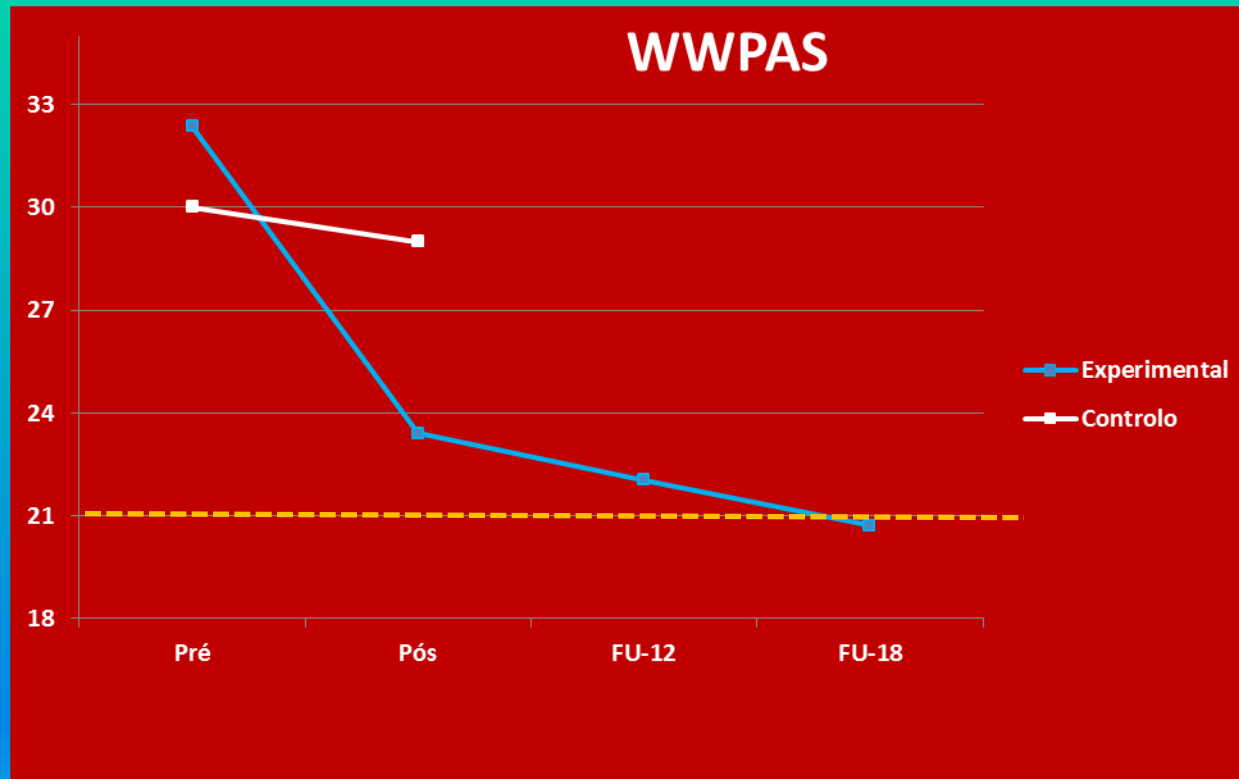
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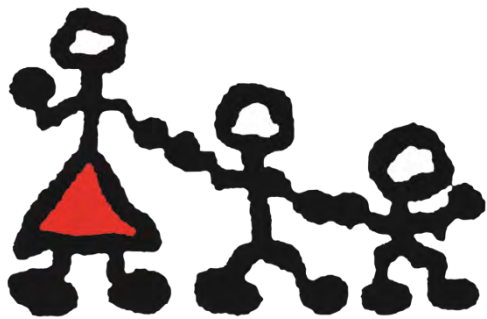
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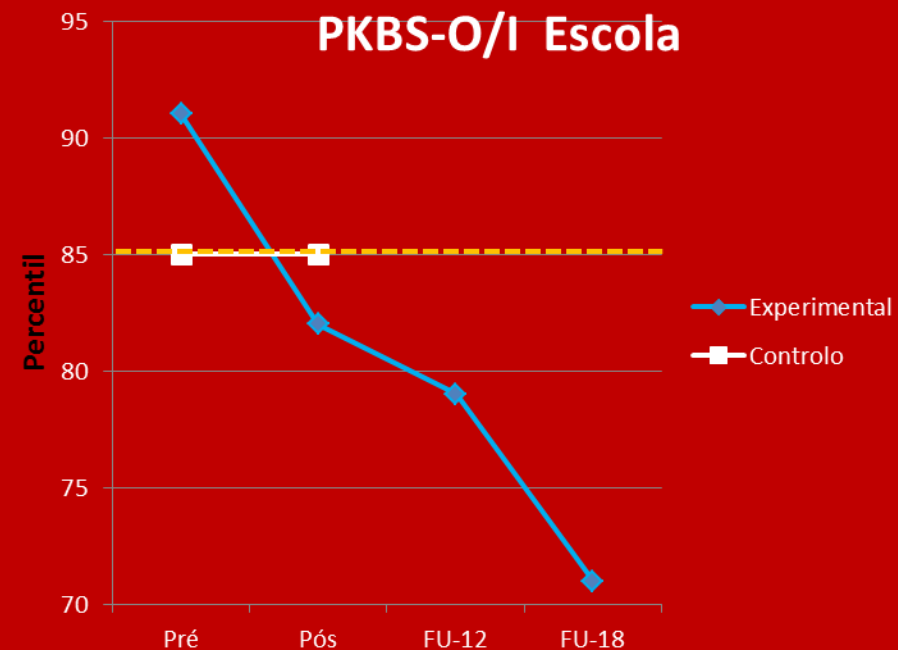
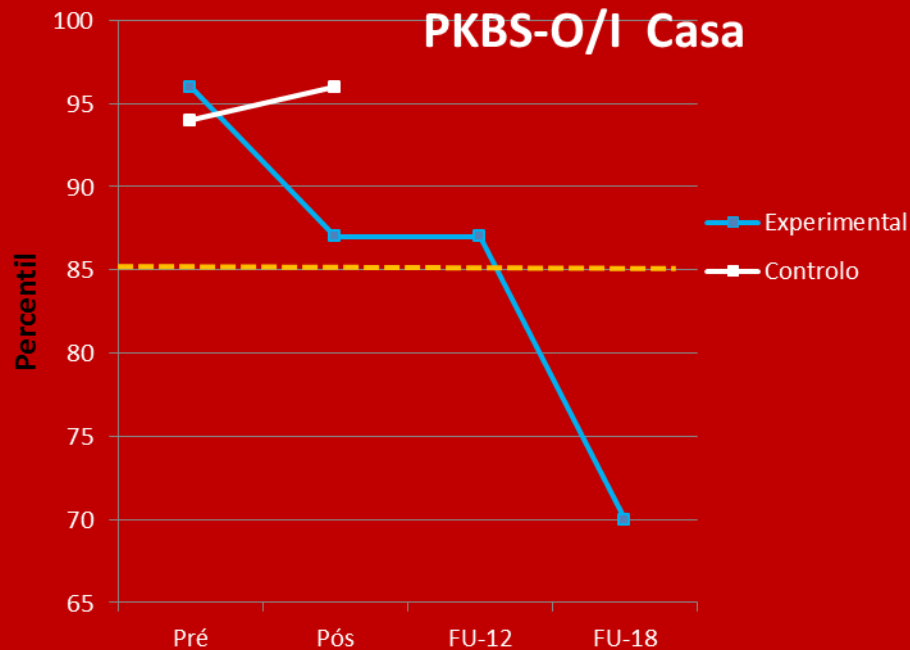
4.2 Resultados: Comportamentos de PH/DA - casa



Pós-FU1-FU2: Efeito não-significativo Tempo, $F(2,36) = .498$, ns



4.2 Resultados: Comportamentos de PH/DA – casa e escola



Pós-FU1-FU2: Efeito significativo Tempo,
 $F(2,33) = 6.950, p < .01$, Effect size partial $\eta^2 = .263$

Pós-FU1-FU2: Efeito não-significativo
Tempo, $F(2,30) = 2.062, ns$