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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

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Introduction  
Rationale for the Study  
Study Aims  
Methods  
Results  
Discussion  
Implications



# Introduction

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## 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

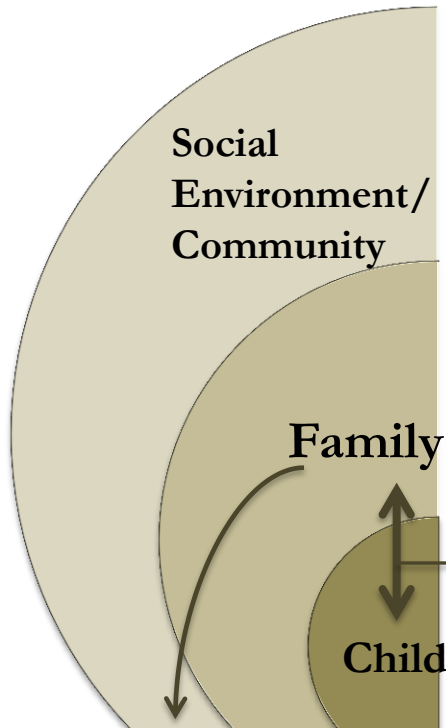
*Multiple pathways from risk to disorder*

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

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## Why this Study?

Study Rationale

What do we know from literature and research ?

What we tried to accomplish ?

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

Target **early intervention**

- ✓ 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

**Examine PT effectiveness**  
in a **Portuguese sample**

**Growing evidence** that effects can be sustained over time

Rajwan et al., 2012

**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

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## Main Purpose

### Study Aims

- |   |                    |
|---|--------------------|
| <ul style="list-style-type: none"><li>▪ Evaluate IY short and medium-term efficacy (6 and 12-months after baseline) in reducing hyperactive behaviours</li></ul>                      | Study 1<br>Study 2 |
| <ul style="list-style-type: none"><li>▪ Analyse the maintenance of post-intervention effects (at 12-month FU)</li></ul>   | Study 2            |
| <ul style="list-style-type: none"><li>▪ Explore the differences in 12-month changes between two groups of children with different levels of initial hyperactivity behaviour</li></ul> | Study 3            |
| <ul style="list-style-type: none"><li>▪ Examine mothers' attendance, satisfaction and IY acceptability</li></ul>  | Study 1<br>and 3   |



# Methods

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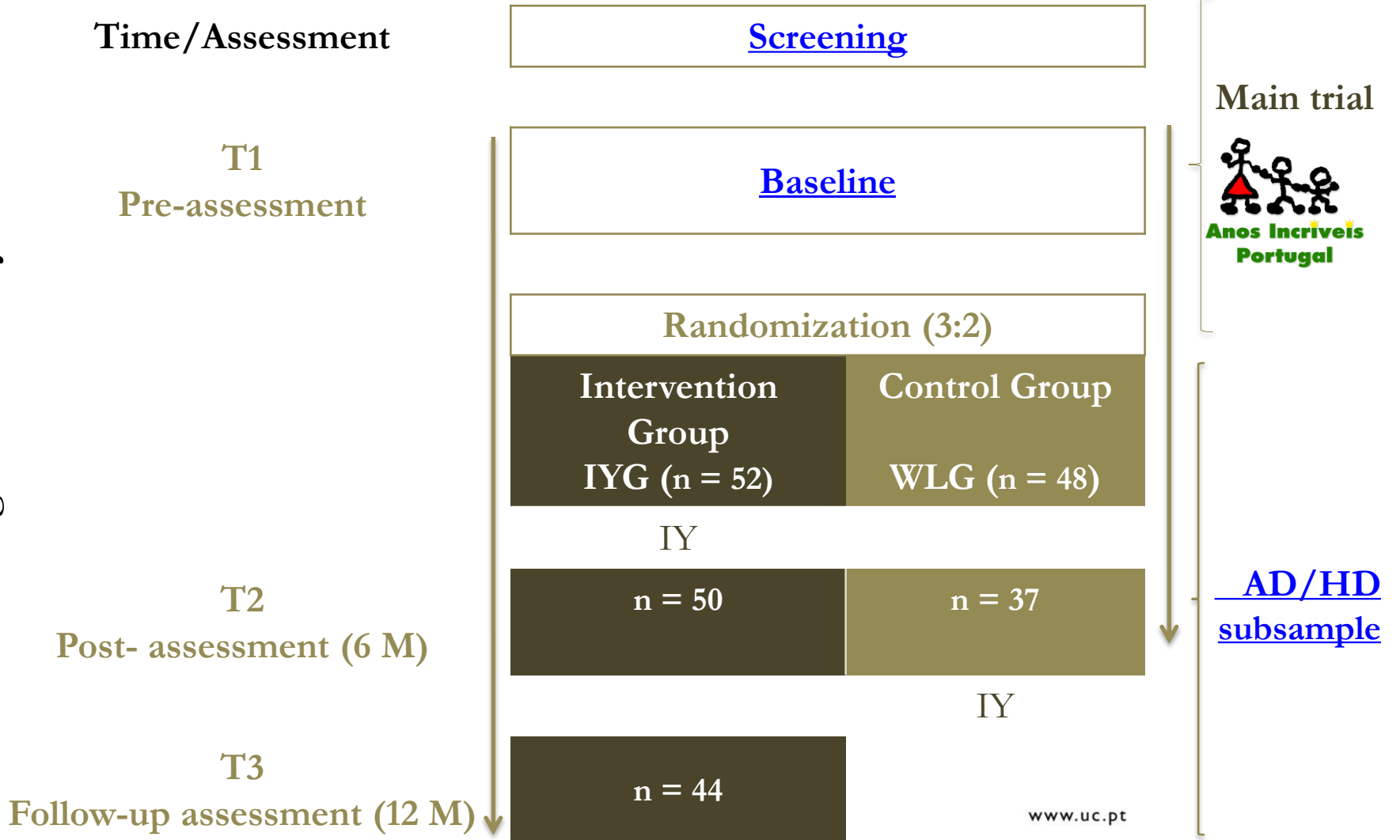
Study design  
Participants  
Procedures  
Instruments  
Intervention



# Study Design

Methods

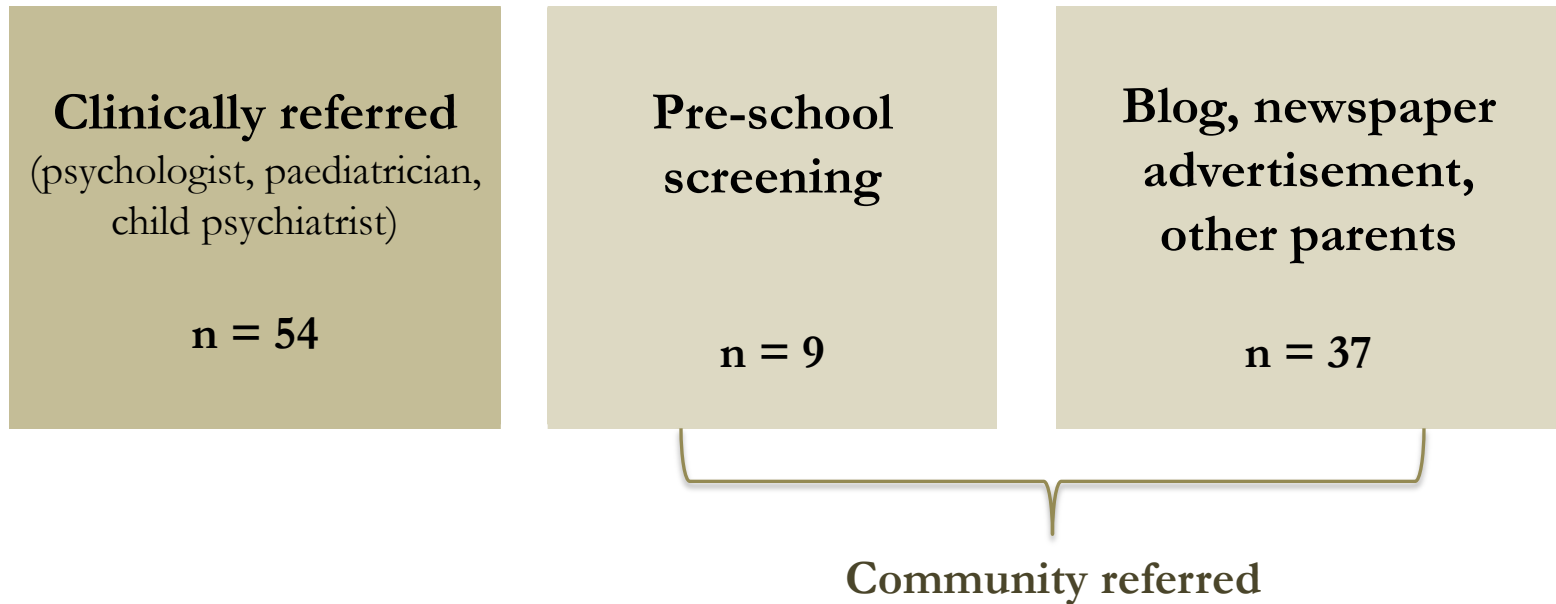
Longitudinal Study





# 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
<b>Socio-demographic data</b>		
Age (months)	55.92 ± 10.9	55.71 ± 11.03
Gender (male)	71%	73%
<b>Clinical Characteristics</b>		
<b>AD/HD behaviors</b>		
WWPAS ( ≥ 95 <sup>th</sup> percentile)	65%	58%
PKBS-O/I (85 <sup>th</sup> to 94 <sup>th</sup> percentile)	29%	30%
PKBS-O/I ( ≥ 95 <sup>th</sup> percentile)	56%	49%
<b>Social Skills</b>		
PKBS-SS ( ≤ 15 <sup>th</sup> percentile)	63%	56%
<b>Oppositional/aggressive comorbid behaviours</b>	<b>79%</b>	<b>70%</b>

# 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<sup>a</sup>: Medium

42%

48%

### Clinical Characteristics

Depressive symptoms ( $\geq 17$ )

23%

29%

AD/HD symptoms ( $\geq 9$  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

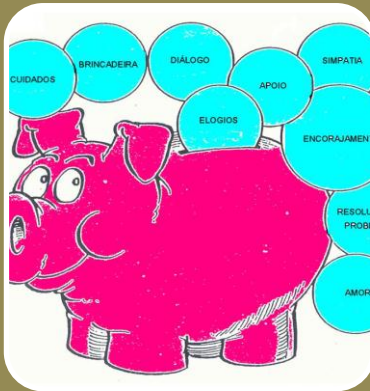
*Programme Satisfaction*: Self-reported Measures

**Weekly Satisfaction Questionnaire** Webster-Stratton, 2001

**Final Satisfaction Questionnaire** Webster-Stratton, 2001

# Intervention

Methods



## Aims ( ↑ protetive 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 strenghten 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

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## Pre-Post Comparison: Study I

Results

### Preliminary analysis: baseline

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

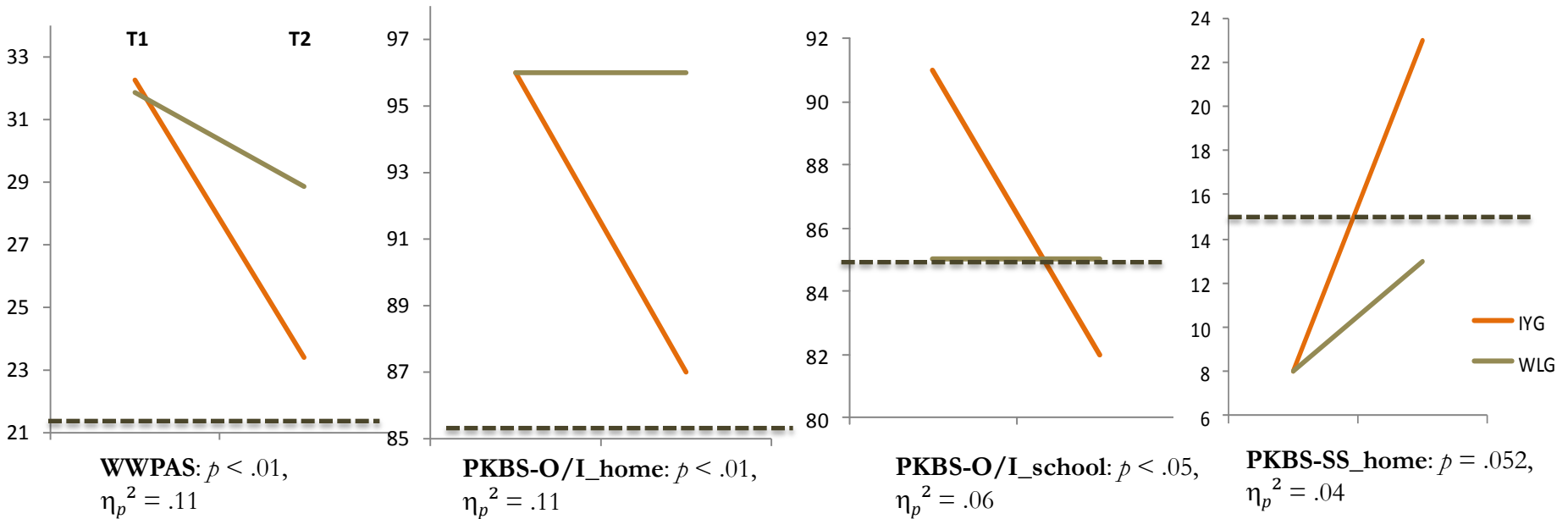
### Attrition

- **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 > WLJ**

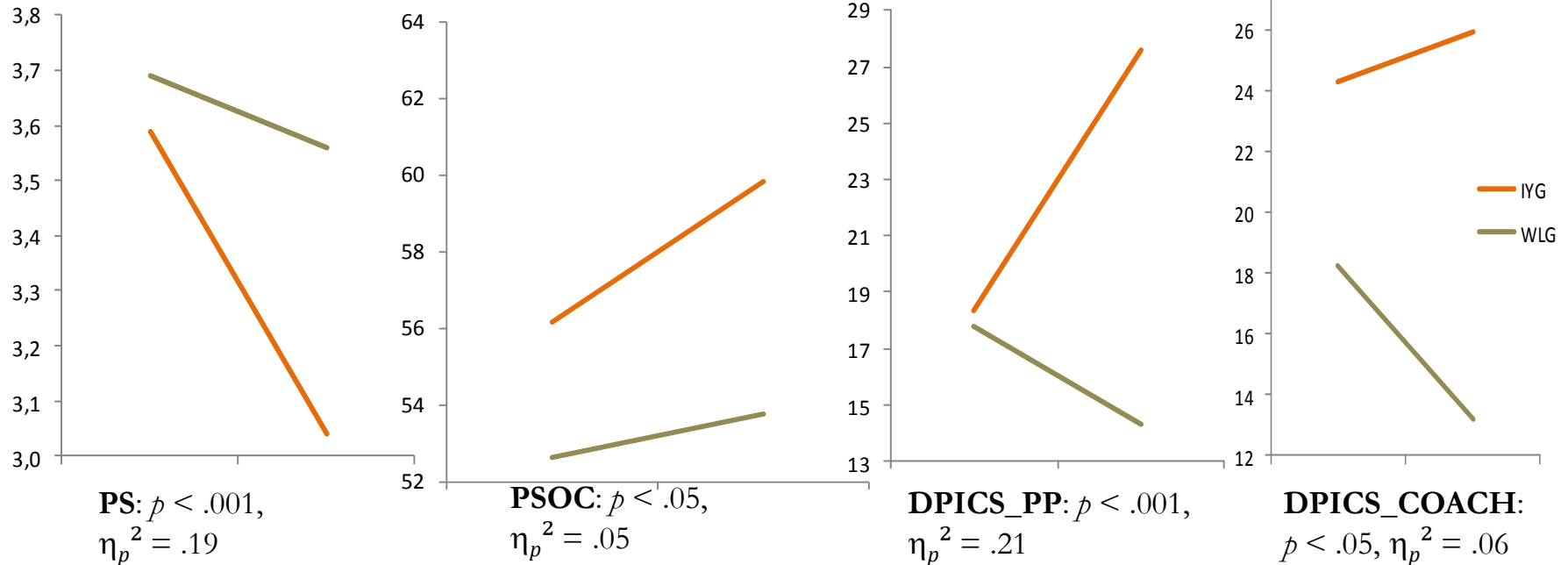
### Statistical Marginal interaction effects (group X time):

- Marginal increase on reported (home)/observed social skills: **IYG > WLJ** **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



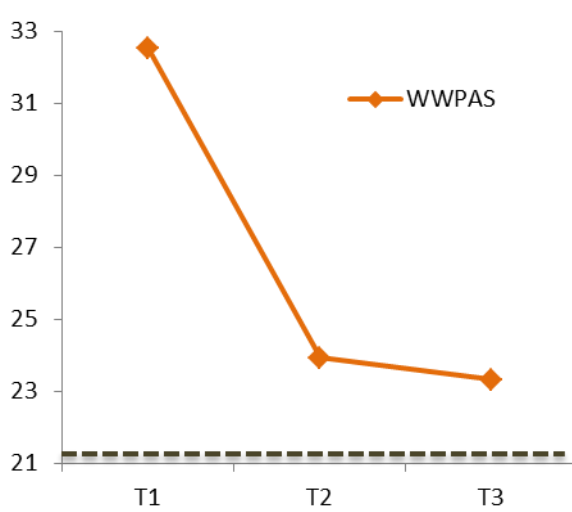
### Statistical Significant interaction effects (group X time):

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

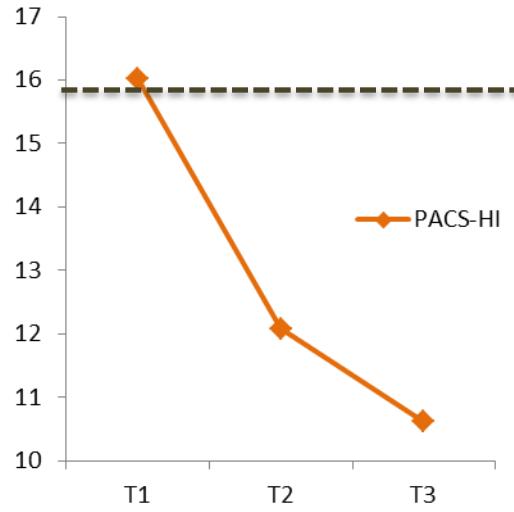
## 12-month effects: Study 2 (children variables)

Results

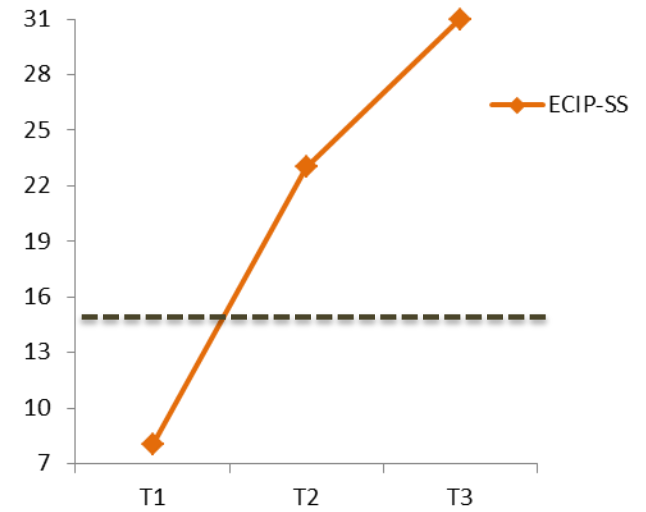
Repeated measures GLM; Time: within-subjects



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):

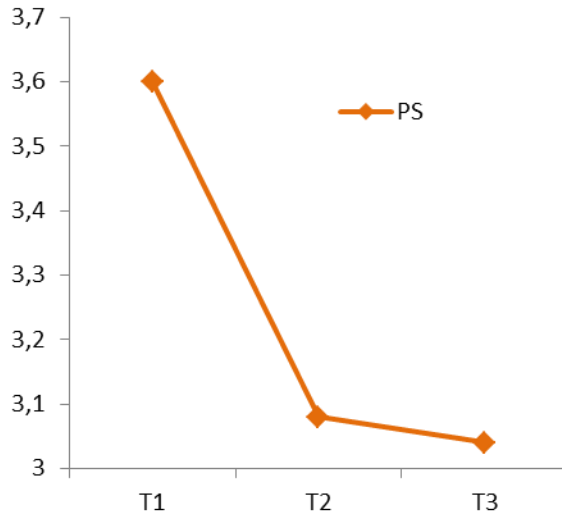
- Changes remained stable, no significant statistical differences between T2-T3 (ES: <.01 to .05)
- Exception: **Significant statistical decrease in children AD/HD behaviours** (mother's interview) from T2 to T3



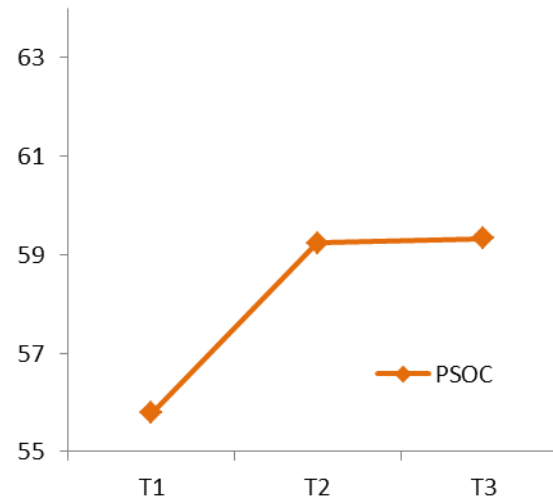
## 12-month effects: Study 2 (*mothers' variables*)

Results:

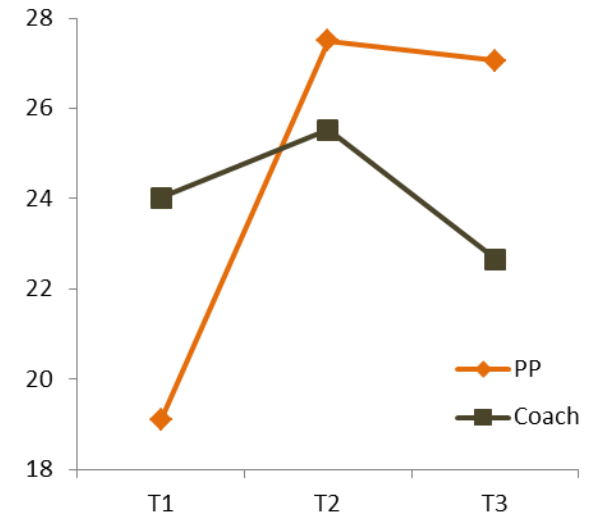
Repeated measures GLM; Time: within-subjects



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

**30%** reduction of initial baseline scores = clinically significant improvement

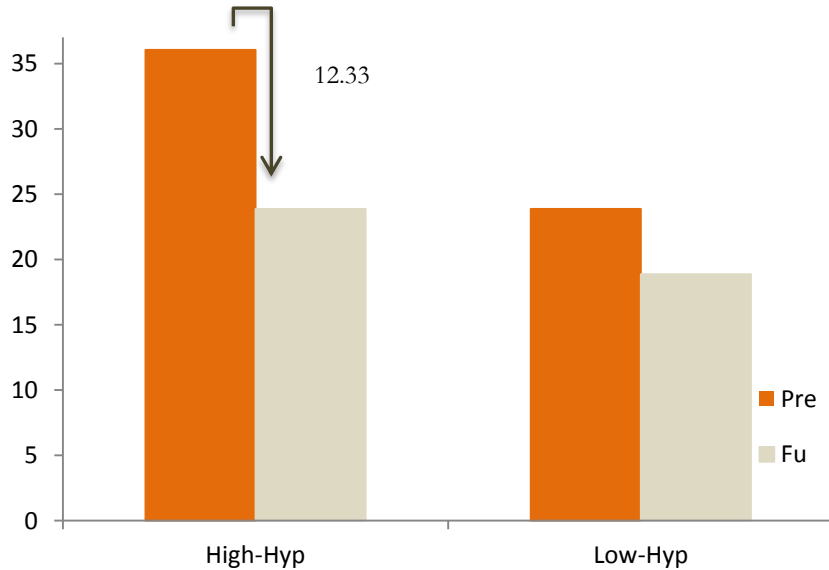
Axberg et al., 2007; Webster-Stratton et al., 1989

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

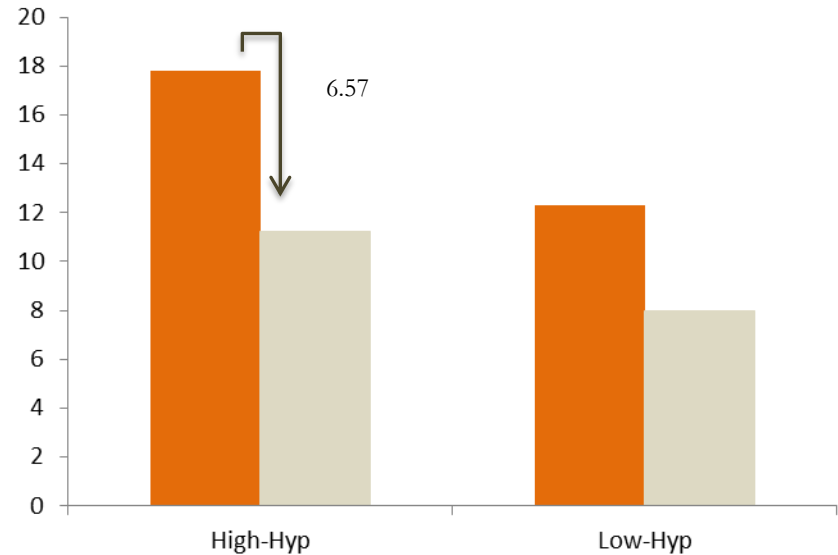
**59% IYG** (12 month follow-up)

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

# Low and High-Hyperactivity at baseline: Study 3



[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

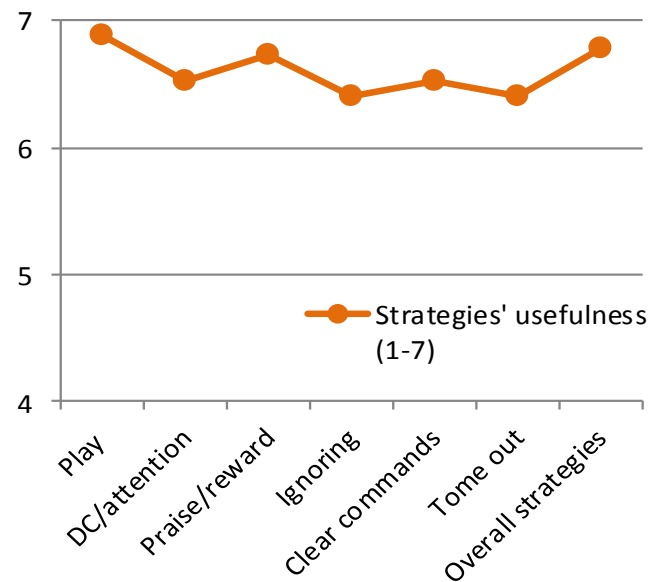
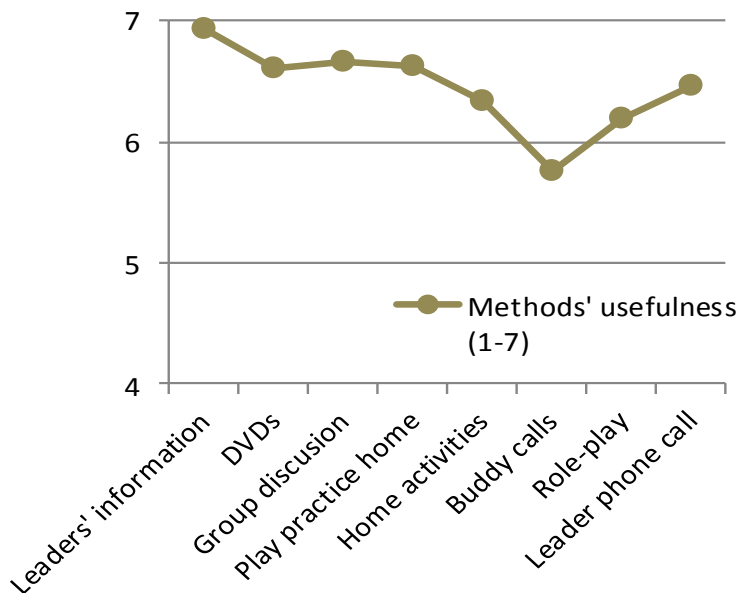
Results  
Descriptive data

- 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

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## 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

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## 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

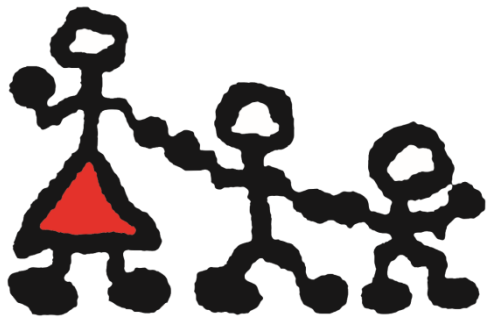




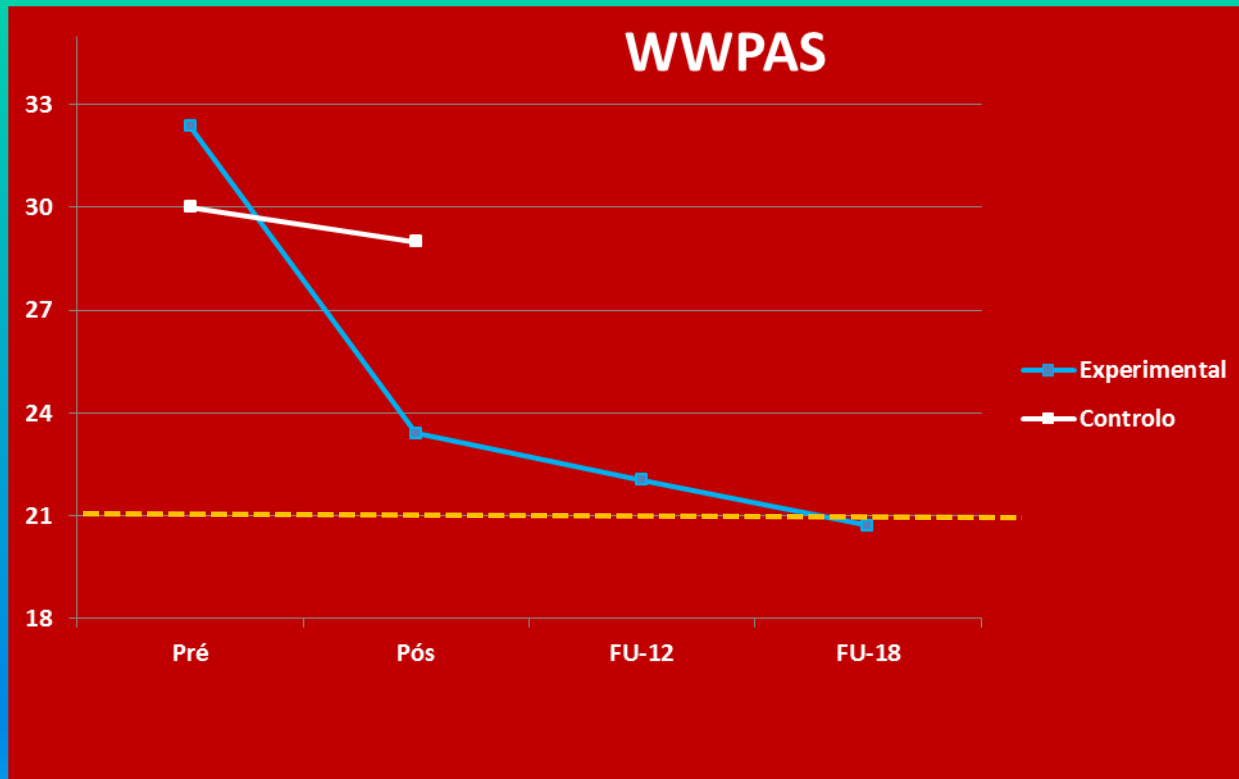
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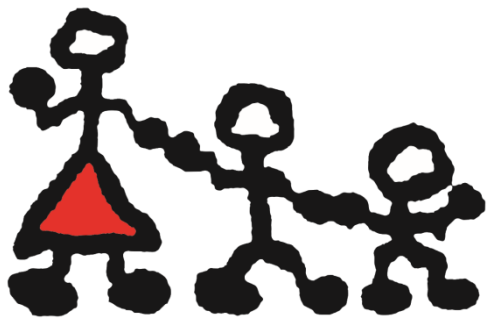
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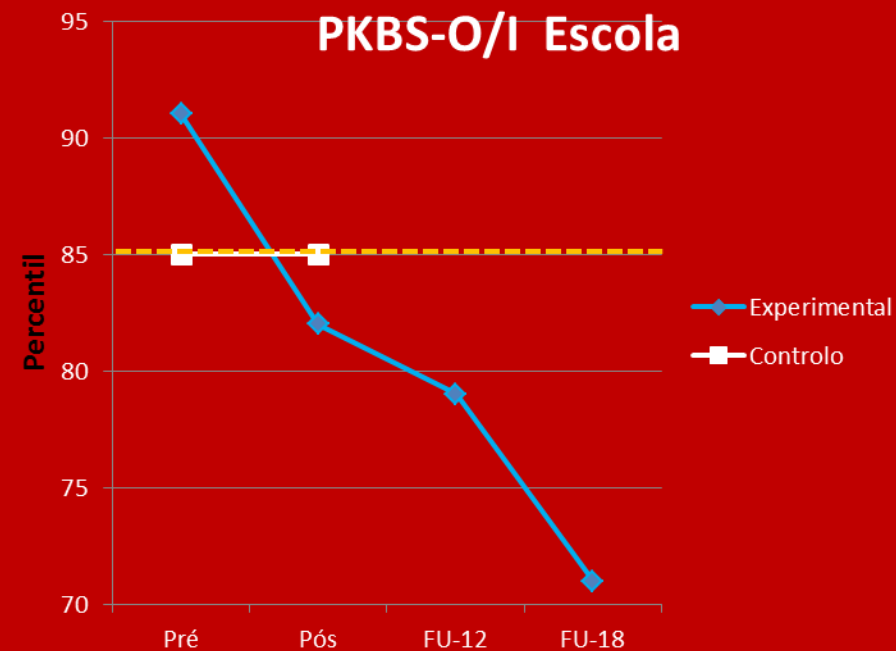
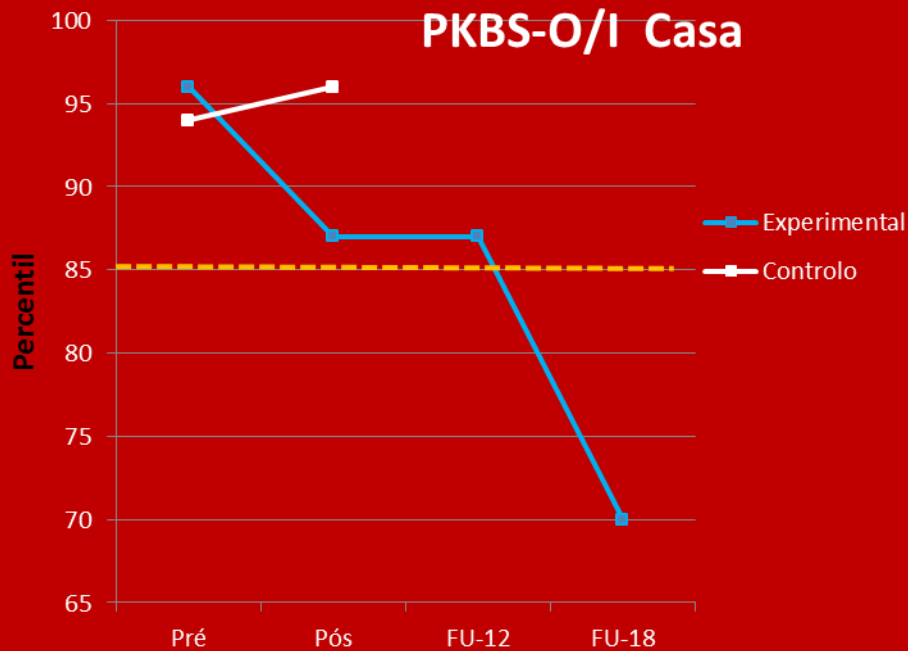
## 4.2 Resultados: Comportamentos de PH/DA - casa



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,  
 $F(2,33) = 6.950, p < .01, \text{Effect size partial } \eta^2 = .263$

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