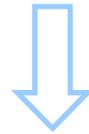


# THE NEXT GENERATION OF ADHD CHILD TRAINING: FROM IMPULSIVE BEHAVIOR TO MINDFULNESS FOR VALUE-BASED CHOICES

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Angela Valli, Massimo Molteni**

*Children with **ADHD*** have problems with:

- Focusing, sustaining and shifting attention
- Being distracted from goals and plans
- Inhibiting a automatic response



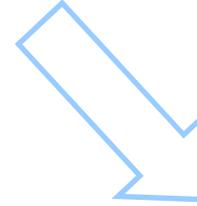
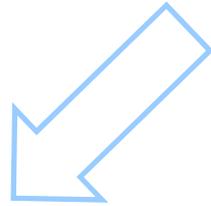
**Inattention**  
**Impulsivity**  
**Hyperactivity**

School impairment

Social impairment

Family impairment

# EVIDENCE-BASED TREATMENTS



## Medication (stimulants)

- Short term effect
- Side effects
- Low treatment fidelity

## Cognitive-behavioral treatments

- Limited long term effects
  - Low generalization of the learned skills to other settings
- (Chambles and Ollendick 2001;  
Pelham and Fabiano, 2008)

ADHD:  
ALTERATED BEHAVIOR REINFORCEMENT AND  
DEFICIENT EXTINCTION OF PREVIOUSLY REINFORCED BEHAVIOR (Salgvolden et al.,  
2005)



NEED FOR TREATMENTS BASED ON CONTINGENCY-GOVERNED BEHAVIOR



TREATMENTS BASED ON RULE-GOVERNED BEHAVIOR



INNER AND EXTERNAL CONTEXT AS GUIDE FOR MY CHOICES

<b>TRADITIONAL TREATMENT</b>	<b>ACT-BASED TREATMENT</b>
Psycho-Education: understand emotions (i.e.anger) and describe physiological arousal related to emotion	Notice and be aware of feelings
Emotional management training	Acceptance
Relaxation and self control to cope with emotion	Mindfulness and Acceptance
Perspective taking to help us to become a good problem solver	Perspective taking to promote psychological flexibility and Committed Action.
Application of social problem solving to different environments	Values and Committed Action

# Creating metaphor...



## WHAT?

### Treatment structure

- 25 group sessions
- Pre and post interview with parents and child
- Test and re-test with Conners ' Parent Rating Scales (Conners, 2001) and Clinical Global Impression Scale (CGI, )
- Duration: 1.5 hrs
- 2 trainers and 1 observer

## WHEN?

### Frequency

Weekly

## WHO?

### Participants

- Inclusion criteria  
ADHD (DSM IV TR)  
Age: 8 -13  
Parents attending parent training
- Exclusion criteria  
IQ<85  
Developmental disorders  
Language comprehension disorder

## WHERE?

### Our setting

Child Psychopathology Unit, Scientific Institute, IRCCS Eugenio Medea, Bosisio Parini, Lecco, Italy

## WHY?

### Aim of the treatment

To improve psychological flexibility

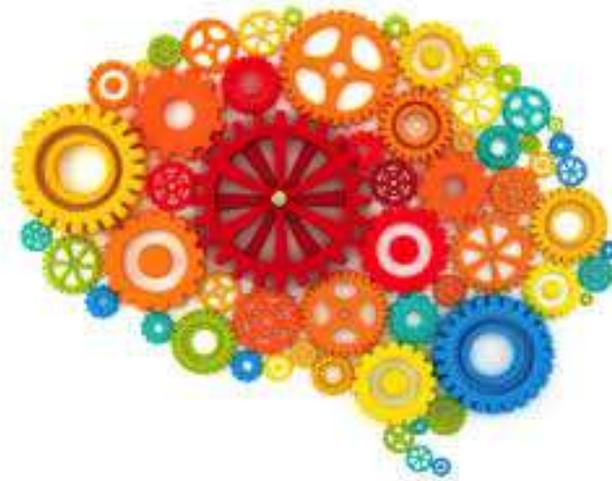
# Session structure

- Review previous session through homework
- Group activities
- Mindfulness exercises
- Assign homework
- Free time



# Principles and Procedures (1)

- Reinforcement
- Extinction
- Generalization
- Discrimination
- Pairing
- Modeling
- Shaping of responses
- Manipulation Motivational Operations
- Positive reinforcement contingencies



# Principles and Procedures (2)



Generalised conditioned reinforcers = token economy



## 1. ACTIVITY

## 2. GONG

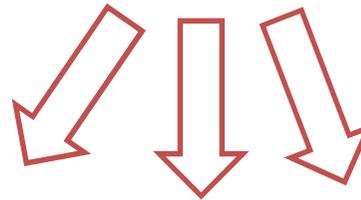


### TARGET BEHAVIOR

Be willing: openness and engagement in the activity, our main purpose concerns the commitment in the activities, not to achieve it.

### TARGET BEHAVIOR

Silence  
Breathe  
Pay attention



Target behavior activity



Target behavior activity + target behavior GONG



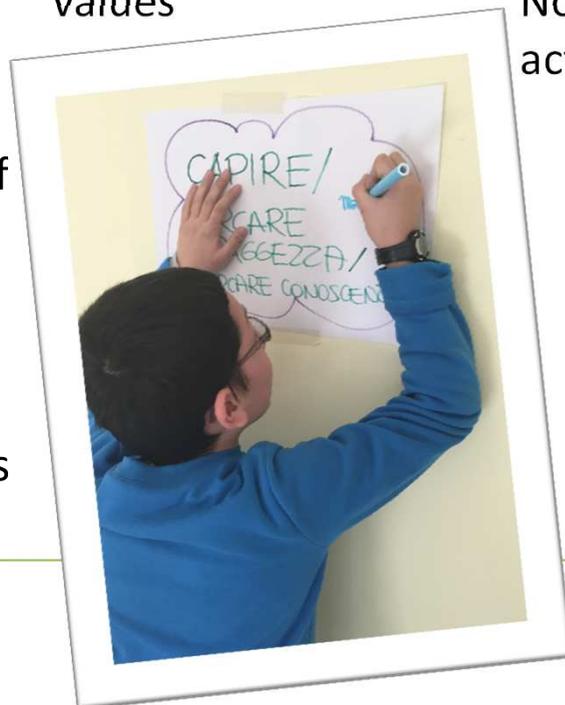
No target behavior



**EXT**

## SESSIONS 1-9

GOALS	PROCESSES	EXERCISES
<p>Presentation and motivation to collaborate in a group context</p> <p>Introduce personal values</p> <p>Develop mindfulness abilities</p> <p>Use emotions as a discriminative stimulus of an action that is compatible with context</p> <p>Using present moment awareness to build self as context</p>	<p>Contact with the present moment</p> <p>Defusion</p> <p>Acceptance</p> <p>Self as context</p> <p>Values</p>	<p>Values card</p> <p>Introduce the metaphor</p> <p>Focus on environment through five senses</p> <p>Focus on breath</p> <p>Focus on emotion: imagine, shape and draw it; describe triggers, emotions and behavioral consequences</p> <p>Note feelings and thoughts during activities</p> <p>Build our chessboard</p> <p>Note who notes</p>



## SESSIONS 10-13

### GOALS

Perspective taking

### PROCESSES

Defusion

Contact with the Present Moment

Acceptance

### EXERCISES

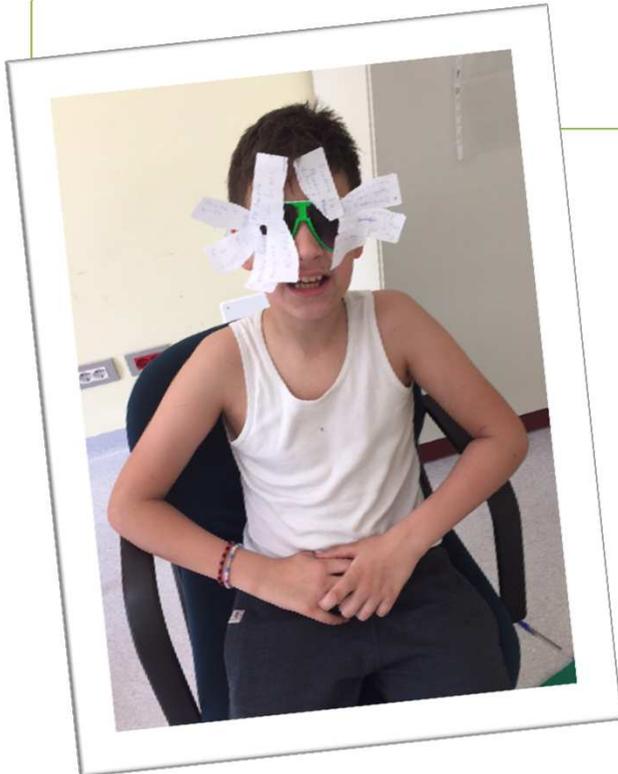
Optical illusions

Watch some landscapes from different views

“Take off your glasses” exercise

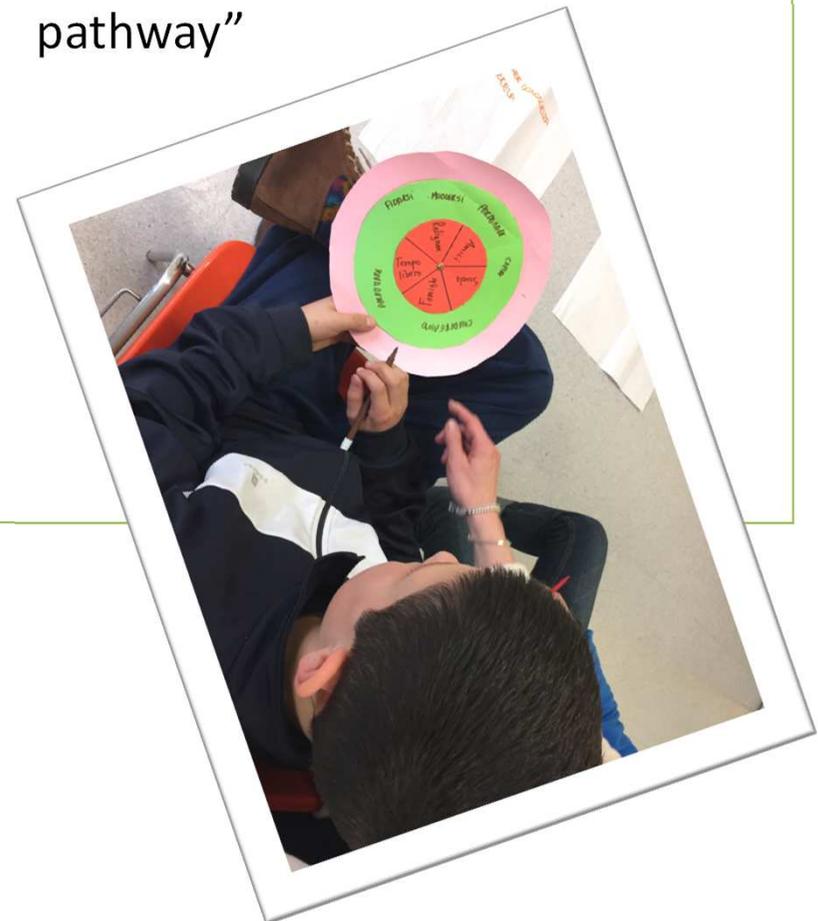
Observe stimuli and situations from different point of view

Note blind spot



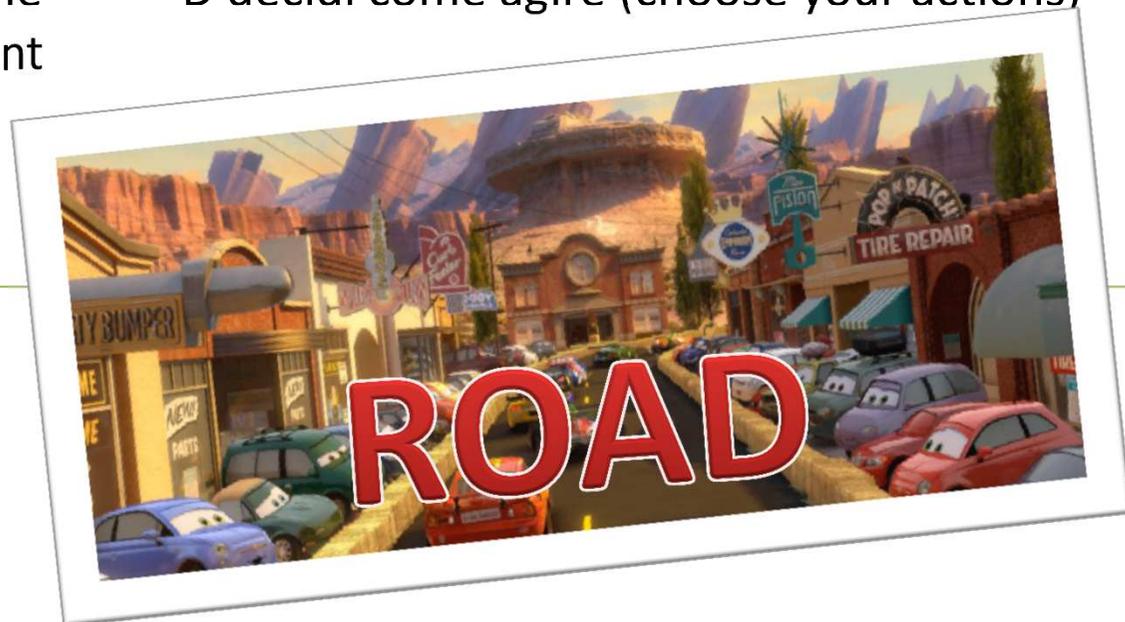
## SESSIONS 14-17

GOALS	PROCESSES	EXERCISES
Identify personal values in life domains	Values	Values cards Create “values compass”
Identify committed actions consistent with them	Committed action	
Identify barriers (feelings, thoughts and external stimuli)	Defusion	Draw my personal “values pathway”
	Acceptance	
	Contact with the present moment	
	Self as context	



## SESSIONS 18-22

GOALS	PROCESSES	EXERCISES
Review previous session	Values	ROAD model:
	Committed action	R respira (breath)
	Defusion	Osserva (observe)
	Acceptance	A ascolta i tuoi valori (follow your values)
	Contact with the present moment	D decidi come agire (choose your actions)
	Self as context	



# SESSIONS 23-25

- GOALS

Re-elaborate in a creative way what we have learnt

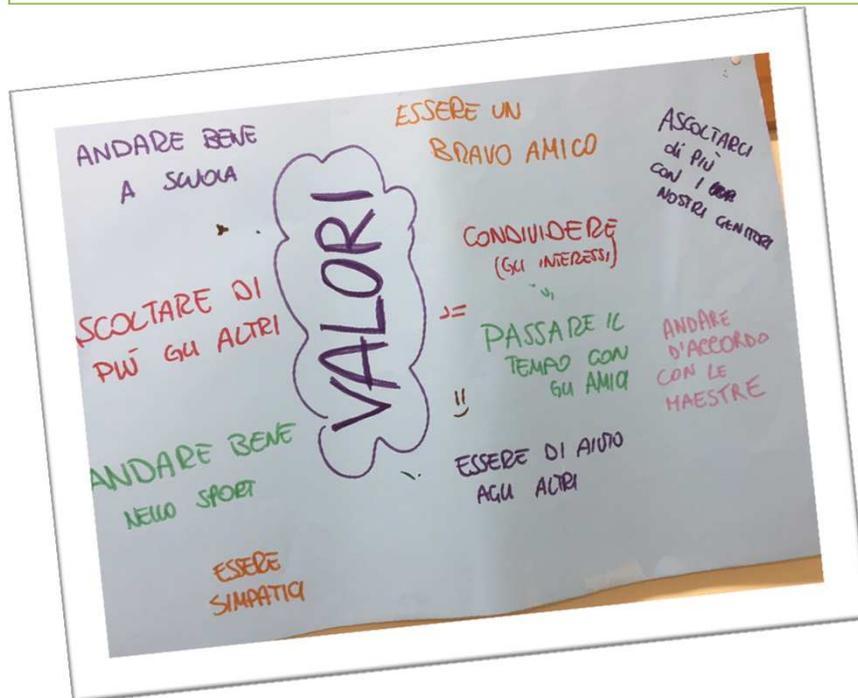
- PROCESSES

Values  
Committed action  
Defusion  
Acceptance  
Contact with the present moment  
Self as context

- EXERCISES

Create video

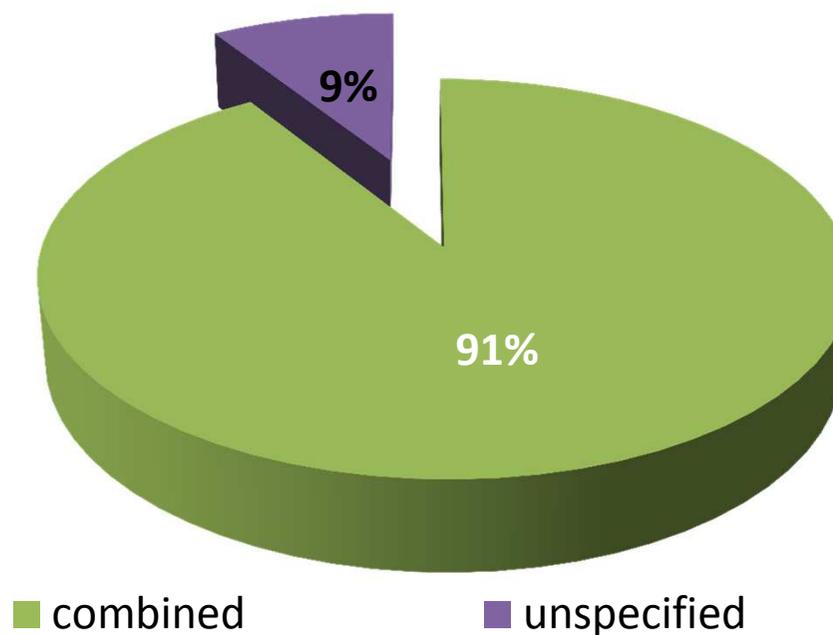
Watch the video with parents



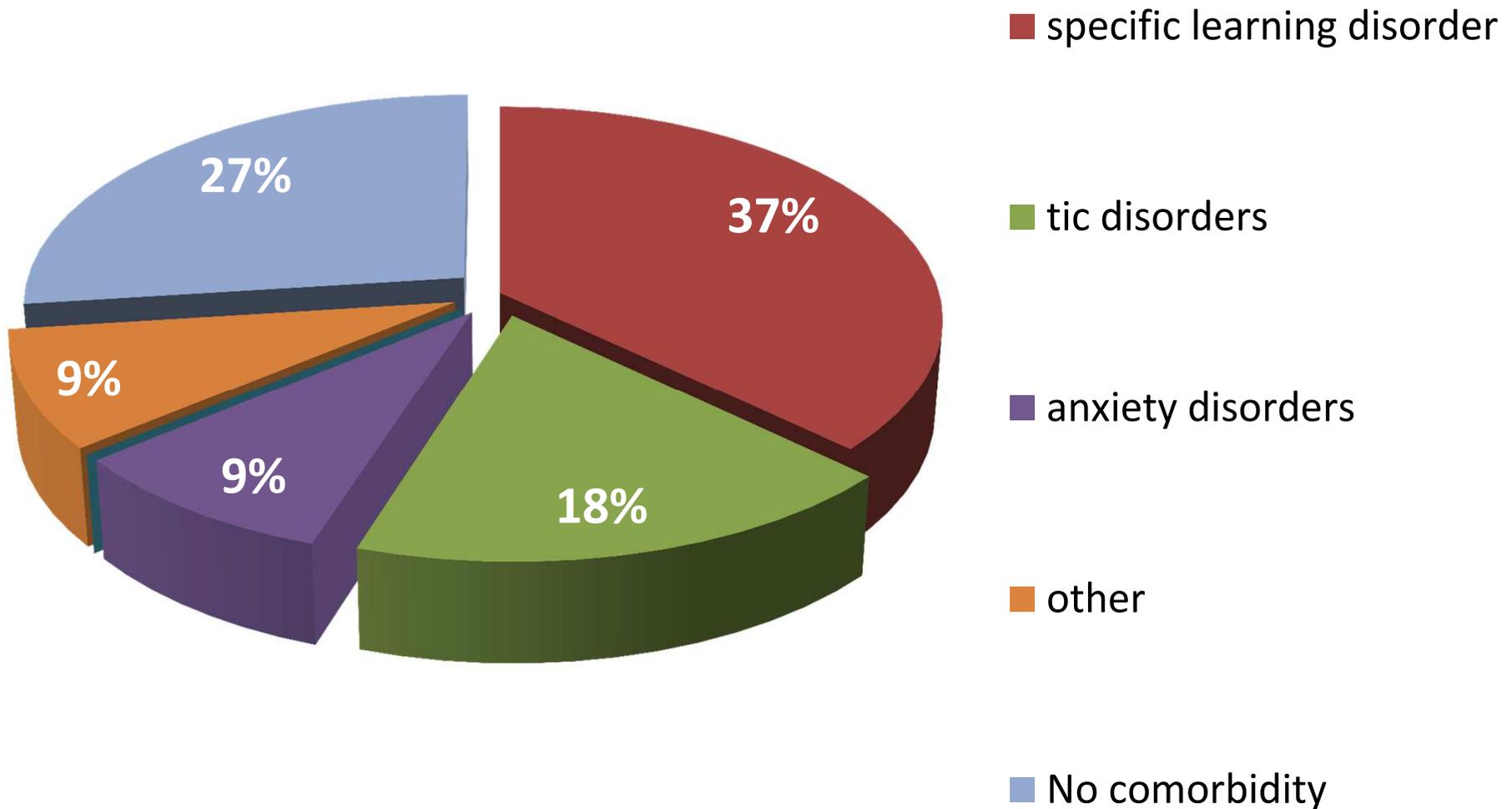
# SUBJECTS

<b>N= 11</b>	<b>Min</b>	<b>Max</b>	<b>Average</b>	<b>SD</b>
Age	9,5	12,9	11,19	1,064
I.Q.	71	124	92,27	16,33
S.E.S.	30	80	58,18	18,34

# DIAGNOSIS



# COMORBIDITY



# RESULTS

## Conners' Parent Rating Scales-Revised: Long version

(CPRS-R:L Conners, 2014)

	PreCT	PostCT	T test
	M (sd)	M (sd)	T (p)
Cognitive problems/Inattention	74.6 (10.8)	67.7 (10.9)	2.4 (.039)
Hyperactivity	71 (10)	64.5 (10)	4.8 (.001)
Conners' ADHD Index	76.2 (10.4)	69.8 (13.9)	3.3 (.009)
Global Index Restless-Impulsive	73.5 (10.7)	66.4 (11.7)	2.5 (.035)
DSM-IV Hyperactive-Impulsive	68.7 (14.2)	63.4 (9.8)	2.2 (.053)
DSM-IV Total	75.2 (10.1)	68.2 (11.2)	4.4 (.002)
DSM-IV Hyperactive-Impulsive Symptoms	2.3 (1.6)	1.5 (1.4)	2.4 (.037)

## ***Attention problems***

Fails to **complete assignments**

Needs close supervision to get through assignments

Avoids, expresses reluctance about, or has difficulties **engaging** in tasks that require sustained **mental efforts** (such as schoolwork or homework)

Has trouble **concentrating** in class

Fails to give **close attention to detail** or makes careless mistakes in schoolwork, or in other activities

Does not **follow through on instructions** and fails to finish schoolwork, chores, or duties in the workplace

**Forgetful** in daily activities

**Loses** things necessary for tasks or activities

Is always «on the go» or acts as if **driven by a motor**

Hard to **control** in malls or while grocery shopping

**Runs** about or **climbs**

**Restless** in the «squirmy» sense

Has difficulty **waiting** in lines or awaiting turn in games or group situations

Will **run around** between mouthfuls at meals

Has difficulty playing or engaging in leisure activities quietly

**Blurts out answers** to questions before the questions have been completed

**Excitable, impulsive**

***Hyperactivity***

***Impulsivity***

# RESULTS

## Clinical Global Impressions (CGI), Severity Scale

	PreCT	PostCT	T test
	M (sd)	M (sd)	T (p)
<b>CGI Severity Scale</b>	4 (0,81)	2,9 (0,87)	11 (<,001)

## CGI Severity score

1 = Normal not at all ill, symptoms of disorder not present past seven days

2 = Borderline mentally ill subtle or suspected pathology

3 = Mildly ill

clearly established symptoms with minimal, if any, distress or difficulty in social and occupational function

4 = Moderately ill

overt symptoms causing noticeable, but modest, functional impairment or distress; symptom level may warrant medication

5 = Markedly ill

intrusive symptoms that distinctly impair social/occupational function or cause intrusive levels of distress

6 = Severely ill

disruptive pathology, behavior and function are frequently influenced by symptoms, may require assistance from others

7 = Among the most extremely ill patients

pathology drastically interferes in many life functions; may be hospitalized

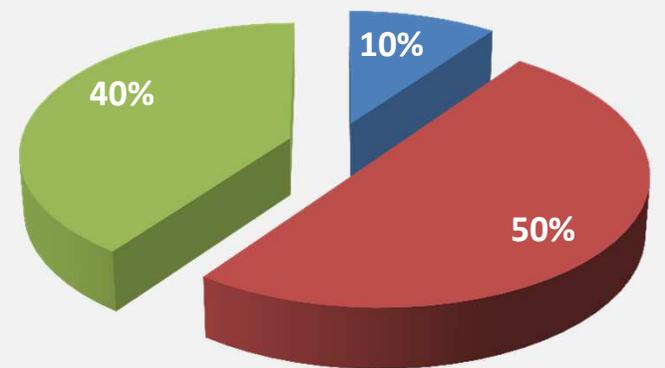
## CGI Improvement

1 = Very much improved	nearly all better; good level of functioning; minimal symptoms; represents a very substantial change
2 = Much improved	notably better with significant reduction of symptoms; increase in the level of functioning but some symptoms
3 = Minimally improved	slightly better with little or no clinically meaningful reduction of symptoms. Represents very little change in basic clinical status, level of care, or functional capacity
4 = No change	symptoms remain essentially unchanged
5 = Minimally worse	slightly worse but may not be clinically meaningful; may represent very little change in basic clinical status or functional capacity
6 = Much worse	clinically significant increase in symptoms and diminished functioning
7 = Very much worse	severe exacerbation of symptoms and loss of functioning

## CGI Improvement

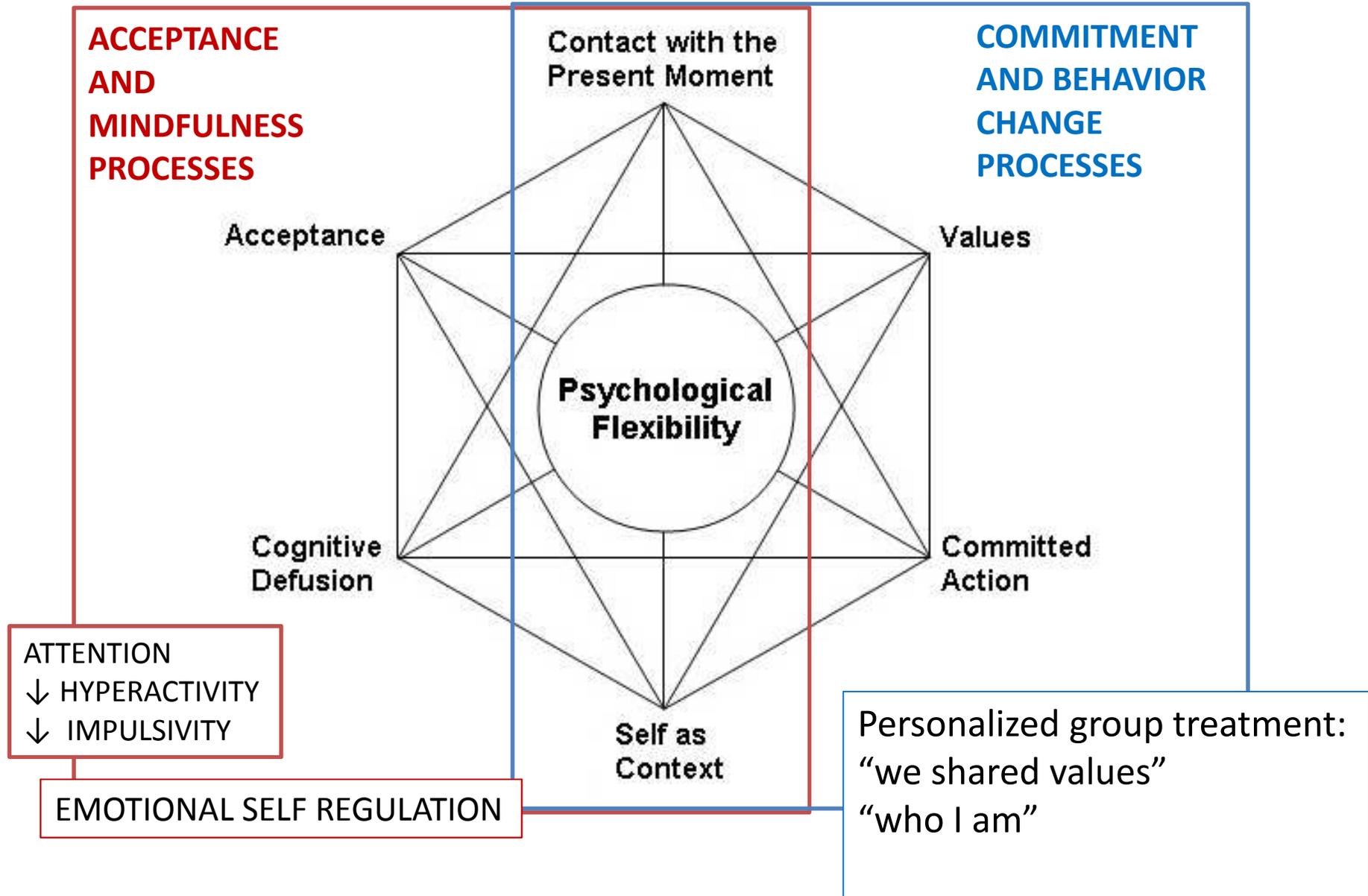
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**CGI Improvement: 100% < 4**



■ 1      ■ 2      ■ 3

# CONCLUSION



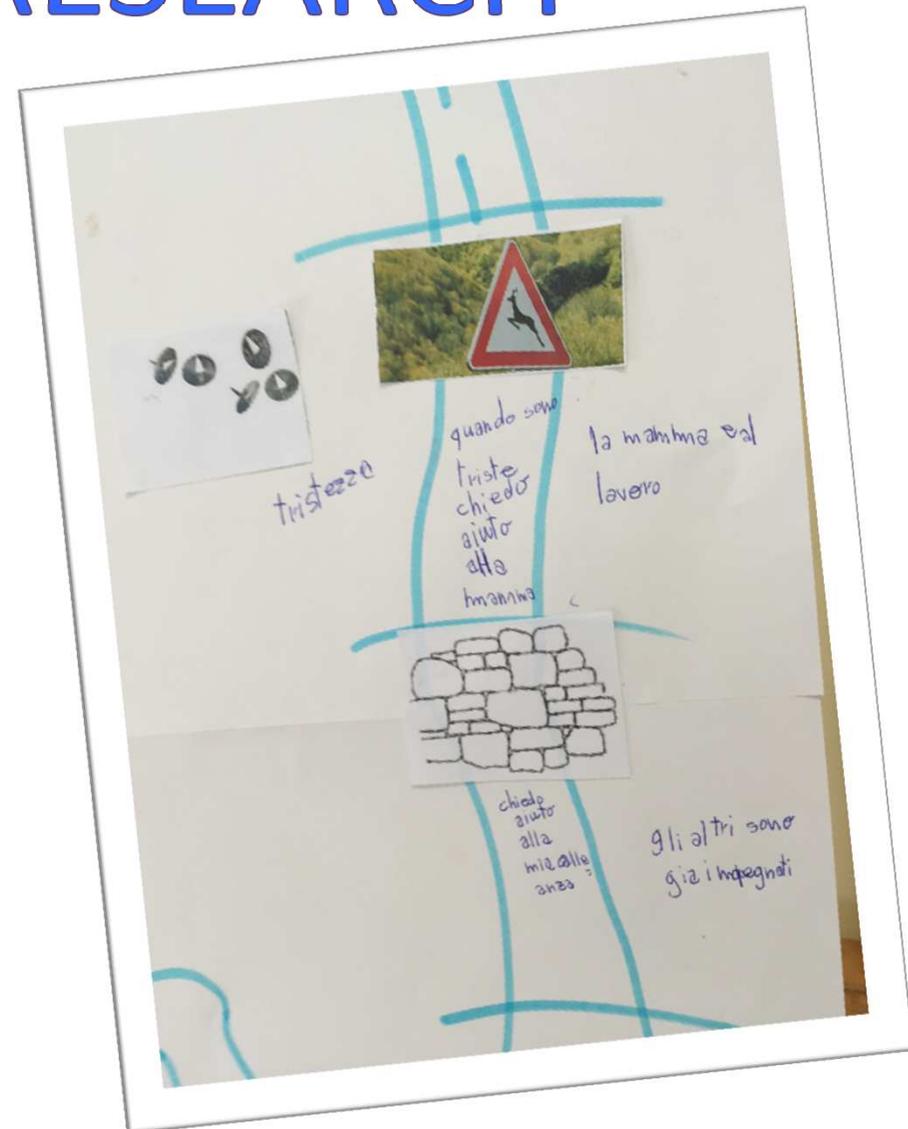
# LIMITATIONS AND FUTURE RESEARCH

No scales addressed the ACT processes

Follow-up to assess long term effects

Parent Training

Teacher involvement



# OUR CHILD TRAINING GROUP

