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RETMAN RATIONAL STORIES VERSUS RATIONAL PARENTING PROGRAM FOR THE TREATMENT OF CHILD PSYCHOPATHOLOGY: EFFICACY OF TWO FORMATS OF RATIONAL-EMOTIVE BEHAVIOR THERAPY

Oana A. GAVIŢA[*] *& Andreea CĂLIN*

Babeş-Bolyai University, Cluj-Napoca, Romania

Abstract

Cognitive-behavioral therapy (CBT) is considered the golden standard of psychotherapy for various child psychological problems. However, less is currently known about the best format to deliver CBT to children. The purpose of the current study was to investigate the efficacy of two formats of delivering a specific form of CBT (namely rational emotive behavioral therapy; REBT/CBT) in reducing externalizing and internalizing problems of elementary school children. Our sample consisted of 32 children presenting externalizing and internalizing problems, who were assigned either to the RETMAN rational stories group (15 children) or to a short Rational Parenting Program (sRPP) group (17 children). Results support the efficacy of both types of REBT interventions in reducing externalizing and internalizing problems of children. Better results were observed in the RETMAN group compared to the sRPP for teacher-reported externalizing syndromes, child-reported anger experienced in school, and irrational demands for fairness. In turn, the sRPP had better outcomes for the laxness and verbosity dimensions of parenting. Implications of the current research are discussed for choosing the most adequate treatment for child psychopathology.

Keywords*:* rational stories, parenting program, REBT/CBT

The most frequent psychological problems among children and adolescents fall into two main categories, namely externalizing and internalizing problems. While externalizing problems reflect disruptive, aggressive, and antisocial behaviors, internalizing disorders refer mainly to somatic complaints, anxiety disorders, and depression (see DSM-IVTR; APA, 2000). Estimates of

[*] Correspondence concerning this article should be addressed to:
E-mail: oanadavid@psychology.ro

childhood psychopathology range from 6% to 25% of children and adolescents (Flouri, Buchanan, & Bream, 2000). It is currently recognized that without timely and adequate treatment, child internalizing and externalizing disorders can become chronic and/or co-morbid in adults, with huge costs for the affected population (Nock, 2003).

In terms of the etiopathology of child psychopathology, current approaches are considering the full configuration of child and parent vulnerability factors (Gavita, Capris, Bolno, & David, 2012), plus the contextual and genetic factors together, for describing the relationships between parenting and child behaviors. A large body of literature (see Burke, Loeber, & Birmaher, 2004) has shown that poor parenting practices are related to disruptive behaviors (e.g., Frick et al., 1992; Haapasalo & Tremblay, 1994), while positive parenting practices represent protective factors against them (McCord, 1991). However, the effects of parenting behaviors cannot be separated from parental emotions (Kaplan & Liu, 1999), since parents can also model the tendency towards psychopathology through their own affective reactions (Gerull & Rapee, 2002).

Based on the cognitive-behavioral conceptualization (Ellis, Wofe, & Moseley, 1967), children presenting internalizing or externalizing psychopathology are learning from their environment dysfunctional thinking and maladaptive patterns, which are then working as endogenous vulnerability factors. Thus, parents' dysfunctional cognitions and emotions have been proposed as important factors to be targeted in cognitive-behavioral parenting programs for children presenting both externalizing and internalizing psychopathology (Gavita, Joyce, & David, 2011; Kazdin & Whitley, 2003). Therefore, current psychotherapeutic interventions have been focused on addressing maladaptive emotion-regulation strategies in both children and their parents (Gavita & Joyce, 2008; Gavita, David, Bujoreanu, Tiba, & Ionutiu, 2012).

Cognitive-behavioral therapy for child psychopathology

Cognitive-behavioral therapy (CBT) is one of the most documented types of therapy for the treatment of various child psychological problems. From the cognitive-behavioral perspective, cognitive processes play an important role in the psychological adjustment and mental health of children. Hence, in CBT, children will learn to change their maladaptive thinking patterns in order to internalize more adaptive thinking processes, with positive consequences on their behaviors and emotions. Irrational cognitions represent a central component of the REBT/CBT, being categorized (see for details David, Schnur, & Belloiu, 2002) into: demandingness (DEM; e.g., when a child thinks "I must get a high grade"), awfulizing/catastrophyzing (AWF; e.g., "Since I got a low score on the test, it is awful."), self-downing (SD; e.g., "I am stupid and thus worthless"), and low frustration tolerance (LFT; "I can't stand this situation"). Each of these patterns has been connected in the literature with dysfunctional emotional and behavioral

reactions (see Ellis, David, & Lynn, 2010). Hence, REBT/CBT teaches children rational alternative beliefs: preferences (PREF) rather than DEM, badness (BAD) rather than AWF, unconditional self-acceptance (USA) rather than SD, and frustration tolerance (FT) rather than LFT, in order to promote healthy emotions.

Although cognitive-behavioral interventions have been extensively documented in recent years relative to their efficacy in treating a variety of child psychopathology (Kazdin & Nock, 2003), there is yet little research to comparatively investigate which are the most efficient modalities for delivering them (e.g., directly to children, using parents as agents of change, and/or both. Let us briefly analyze as follows two main modalities of delivering REBT/CBT in the treatment of child psychopathology.

Parental programs. Among the best researched formats of REBT/CBT for child psychopathology, currently considered treatment of choice for child conduct disorder (NICE, 2006), are group parenting interventions (i.e., parenting programs/training). Parent programs have been either delivered solely to the parents or combined with child therapy sessions (Lundahl, Risser, & Lovejoy, 2006). The philosophy of the parenting programs approach to treating child psychopathology is to involve parents as agents of change for their children. Despite the extensive empirical data showing their efficacy, there are several limitations of these interventions, such as high drop-out rates (i.e., higher than 50%; Goodman, 2002). In order to overcome these limitations, researchers have started to implement the principle of minimal intervention, with minimal input from the therapist and a minimal duration, so that parents are able to attend. Based on this, short versions of parental programs have been recently proposed, with smaller number of sessions (i.e., between 1 to 7 sessions), as compared to the standard parent programs (see Lundahl, Risser, & Lovejoy, 2006).

There are only few studies conducted to date that investigate the efficacy of the short cognitive-behavioral parental programs. However, there is promising data showing positive effects of such programs, on both child functioning and parent practices, compared to control groups, or even compared to the longer standard parental programs (see Lim, Stormshak, & Dishion, 2005; Gavita et al., 2012; Joachim, Sanders, & Turner, 2009; Kling, Forster, Sundell, & Melin, 2010). The main mechanisms of change involved in these parental programs are positive parenting, doing homework tasks, parental distress (see Kling et al., 2010; Gavita, 2011). Taking into account these developments, short parental programs can be considered an efficient and accessible intervention for child psychopathology.

Therapeutic Stories. Long before current evidence-based treatments for child psychopathology existed, stories were traditional methods for modeling behaviors by means of metaphors. Therefore, another documented format of REBT/CBT in the treatment of child psychopathology are therapeutic stories for children. Indeed, REBT/CBT has strongly promoted this type of intervention (Waters, 1980).

Rational stories (Waters, 1980) are a type of therapeutic stories, aiming to reduce irrational beliefs and teach children rational thinking patterns in order to change their emotional and behavioral reactions. The advantages provided by REBT/CBT therapeutic stories are the modeling role that their characters can play for child behaviors: in helping children to reflect and take an active stance for changing their own thinking, emotions and behaviors, solving problems, reducing resistance, and enhancing motivation (Land, 2007).

Currently, therapeutic stories can be delivered as part of parental programs (e.g., homework, bibliotherapy) and/or independently, are often based on metaphoric content, and are typically considered efficient in reducing child psychopathology (see Parker & Wampler, 2006; Pomerantz, 2006).

Objectives and hypotheses

The main purpose of the current paper is to investigate the comparative efficacy of two formats of REBT/CBT (i.e., parental programs versus therapeutic stories), in reducing externalizing and internalizing disorders of elementary school children. The two REBT/CBT programs are: (1) the short Rational Parenting Program (sRPP), and (2) the RETMAN rational stories (RETMAN). More precisely, we aimed to investigate the differential impact of the two treatment approaches in affecting relevant emotional, behavioral, and cognitive dimensions reported by children, parents, and teachers. Taking into account the previous support for parenting programs (e.g., Lundahl, Risser, & Lovejoy, 2006) we consider the sRPP as a reference treatment. The second objective was to identify specific mechanisms of change for each of the programs. More precisely, we proposed that, while the effects of the sRPP will be accounted for by the changes in parenting, parental distress, and irrational thinking, the effects of the RETMAN will be mainly explained by reducing irrational thinking in children.

Method

Participants

32 children and their parents (78.1% mothers and 21.9% fathers, mean age 37.25 years, *SD* = 2.92) participated in this study. Children were 65.6% boys (21) and 34.4% girls (11), having mean age of 8.9 years (*SD* = .89). The inclusion criterion for children was their score on the Achenbach System of Empirically Based Assessment (ASEBA; Achenbach & Rescorla, 2000; 2001); they had to score over the subclinical cut-off score of the DSM empirically derived scales (percentile 93), reported either by the parents or teachers. The distribution of the children on the DSM-oriented scales is presented in Table 1; percentages refer to children having over the subclinical threshold of problems.

Table 1. Sample distribution over the inclusion criteria

Inclusion criteria	N	%
Inclusion DSM category for children		
Affective Problems	8	25%
Anxiety Problems	12	37,5%
Somatic Complaints	1	3,1%
Attention Deficit/Hyperactivity Problems	7	21,9%
Oppositional Defiant Problems	7	21,9%
Conduct Problems	10	31,3%

We excluded cases in which children were in individual psychotherapy or concurrent types of interventions (i.e., other types of psychological support, or receiving psychiatric treatment/medication). Eligible participants were allocated in two intervention groups: 15 children were included in the RETMAN rational stories intervention, and the parents of 17 children were included in the short Rational Parenting Program (SRPP).

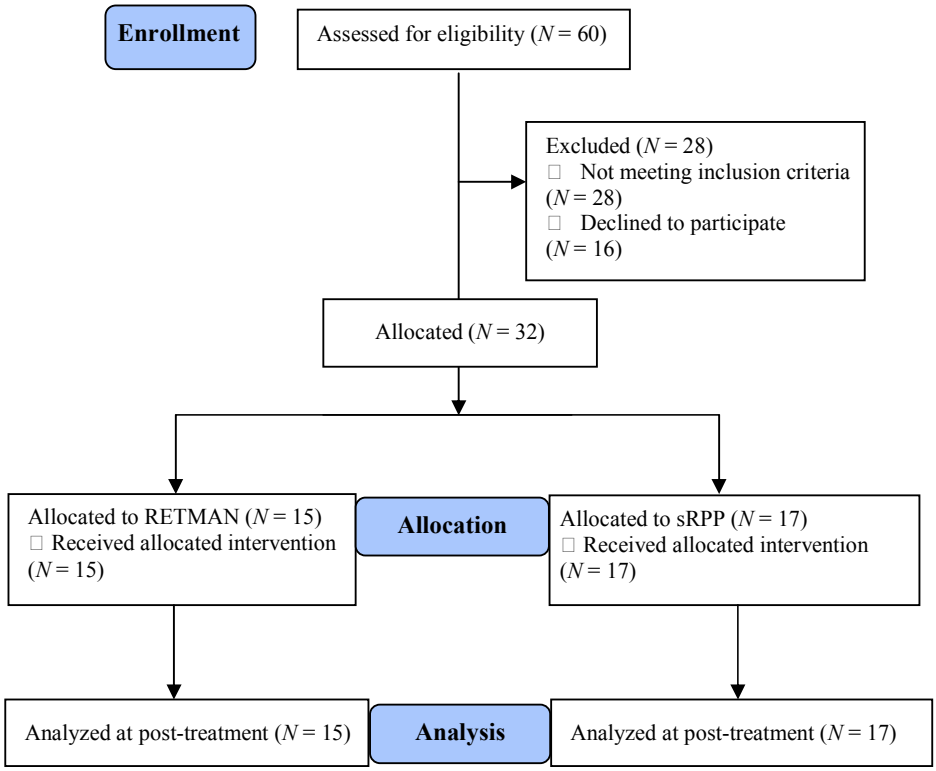

Figure 1. Flow Diagram of the progress through the phases of the trial (i.e., enrollment, intervention allocation, and data analysis)

Measures

The main child outcome measure was the Achenbach System of Empirically Based Assessment (ASEBA): *Child Behavior Checklist (CBCL)* and *Teacher Report Form (TRF)* 6-18, in order to measure the internalizing and externalizing problems of children. The secondary child outcome measure was the *Multidimensional School Anger Inventory (MSAI)* for identifying the level of adaptive and maladaptive anger.

Mechanism of change variables were measured (1) for the children, with the *Child and Adolescent Scale of Irrationality (CASI),* for identifying the level of child irrational and rational cognitions, and (2) for the parents, with the *Parental Rational and Irrational Beliefs Scale (Parenting RIBS)* for identifying the level of parental irrational and rational cognitions. *The Parenting Scale,* was used for measuring parental practices, and *The Parental Stress Scale,* for measuring parental emotional distress.

Child Measures

Outcomes

Primary child outcome. *The Achenbach System of Empirically Based Assessment* – (ASEBA; Achenbach & Rescorla, 2000; 2001). The ASEBA system for children aged between 6 and 18 year is comprised of the *Child Behavior Checklist (CBCL)* and the *Teacher Report Form (TRF*; Achenbach, 1991). The TRF evaluates behavior problems that a child may display in the kindergarten or school, with the Problem Section being used in this study. Each item on the Problem Section of the TRF contains a statement about the child's behavior. The parent/teacher selects the response that assesses how well each statement describes the child, either currently or within the previous two months. Response choices include: "Not True" (0), "Somewhat or Sometimes True" (1), and "Very True or Often True" (2). The empirically- based syndromes (internalizing syndromes [IntSyndr] and externalizing syndromes [ExtSyndr] subscales) scored from the CBCL 6-18 and TRF reflect actual patterns of problems of preschool and school children, derived from factor analyses that were coordinated between the instruments. The CBCL 6-18 and TRF were scored based on the empirically-based syndromes and profile of DSM (Diagnostic and Statistical Manual; APA, 2000) oriented scales (Affective Problems [AfP], Anxiety Problems [AnP], Somatic Complaints [SomC], Attention Deficit/Hyperactivity Problems [AD/HP]; Oppositional Defiant Problems [ODP] and Conduct Problems [CP])..

Secondary child outcome. *The Multidimensional School Anger Inventory-Revised (MSAI-R; Smith, Bates, & Laughlin, 1998).* The MSAI-R was developed to measure the affective, cognitive and behavioral dimensions of anger in school settings. The MSAI measures intensity of anger as reaction to school specific situations, the level of hostility experienced in school context, and also positive and negative displays of anger in students. The scale includes 54 items

based on a five-point Likert scale, from 1 to 4 (1 – strong disagreement and 4 – strong agreement). The MSAI is scored based on four main factors: Anger Experience (AngExp), Hostile/Cynical Attitudes (AngHost), Destructive Expression of Anger (AngDestr), and Positive Coping (AngPosC). The scale was validated for children between 10 and 18 years and has good psychometric properties (Smith, Bates, & Laughlin, 1998).

Hypothesized mechanism of change. *The Child and Adolescent Scale of Irrationality - (CASI; Bernard & Cronan, 1999).* The CASI was developed for measuring irrational cognitions in children and adolescents and is comprised of 28 statements for which child expresses agreement/disagreement on a 1 to 5 points Likert scale (1-strong disagreement; 5- strong agreement). We used the following subscales of the instrument: demandingness for fairness (DEM-F), low frustration tolerance for work (LFT-W), and low frustration tolerance for rules (LFT-R). The CASI has adequate psychometric properties (Cronbach's α = .84; Trip & Popa, 2005).

Parental Measures

Hypothesized mechanism of change

The Parenting Scale - (PS; Arnold, O'Leary, Wolff, & Acker, 1993). The PS measures parental inefficient practices, based on 30 items, each offering response options on a Likert scale from 1 to 7 (1 corresponding to inefficient practices and 7 to efficient parenting practices). The scale is structured on three factors, based on parental styles theory: over-reactivity (Over-R), laxness (Lax) and verbosity (Verb). Over-reactivity corresponds to the authoritative parenting style described by Baumrind (1968); the laxness factor corresponds to permissive style of parenting, while verbosity refers to rewarding unwanted behavior by parents. The three subscales have very good psychometric properties (α Cronbach between .63 and .83; test-retest reliability between .79 and .83; Karazsia, Dulmen, & Wildman, 2008).

The Parental Stress Scale - (PSS; Berry & Jones, 1995). The PSS is a self-report scale comprising 18 items which refer to both positive themes of parenthood (i.e., emotional benefits, self-enrichment, personal development) and negative indicators (i.e., demands on resources, opportunity costs, and restrictions). Parents are asked to agree or disagree by rating each item on a five-point Likert scale in terms of their typical relationship with their child, from strongly disagree to strongly agree. The scale can be used for the assessment of parental stress, for parents (for both mothers and fathers) of children with and without clinical problems. Higher scores indicate greater stress. The Parental Stress Scale demonstrated good internal reliability (Cronbach's α = .83), and test-retest reliability (r = .81; Gavita, 2011).

The Parental Rational and Irrational Beliefs Scale - (P-RIBS; Gavita, DiGiuseppe, David, & DelVecchio, 2011). P-RIBS was developed to measure rational and irrational cognitions of parents. The P-RIBS has 20 items and

parents are asked to express, on a Likert scale from 1 to 5, their agreement with each statement (1-strong disagreement to 5-strong agreement), based on the thoughts they have had in a situation when their child disobeyed. The scale has three subscales: irrational beliefs [IBs], rational beliefs [RBs], and global evaluation [GE]), and a total score. A low total score indicates a high level of irrationality. The P-RIBS has adequate psychometric properties (Cronbach's α between .83 and .78; Gavita, DiGiuseppe, David, & DelVecchio, 2011).

Procedure

Children allocated to both conditions received the interventions in the school where they were studying. Children that were part of the same class were assigned to the same study arm based on cluster randomization. The group parenting program was selected since this type of interventions is currently considered treatment of choice for child behavioral problems (see NICE, 2006); furthermore the short Rational Parenting Program had been previously tested (Gavita, David, Bujoreanu, Tiba, & Ioutiu, 2012), and thus was considered reference condition for investigating the efficacy of the RETMAN rational stories intervention. Following completion of the intervention, participants were re-assessed using the child, parent-, and teacher-report measures.

Therapists. The same therapist, certified in cognitive-behavioral therapy according to the standards of the European Association for Behavioral and Cognitive Therapies (www.eabct.com), implemented both conditions, assisted by the class teachers. Two manuals were used for this study: the short Rational Parenting Program (Gavita et al., 2012), and the RETMAN rational stories intervention based on the stories developed by David (2006).

Treatments

The short Rational Parenting Program (sRPP)

The sRPP is a curricula based on REBT, which is effective in the management of child behavioral problems (Gavita, 2011; Gavita et al., 2012). The sRPP consisted of three weekly sessions, of two hours each. Each session included video vignettes (SOS Help for Parents series; Clark, 1996) for modeling positive parenting and discussions based on the themes presented. At the end of each session, parents received handouts, forms, and homework assignments. The three sessions were structured as follows:

1. Emotion-regulation in parents and children: The ABC model of emotional reactions. The basic rules in positive child disciplining; rewarding child behaviors and building positive relations;

2. Techniques for managing child unwanted behaviors: family rules and functional analysis of behaviors; effective instructions, active ignoring.

3. Time-out and token economy as methods for managing behaviors in children. Efficient communication with the child, and building problems solving skills.

The sRPP emphasizes the parental emotion-regulation component, and thus the homework assignments after each session included the parental "Psychological Pills" (PsyPills) (Gavita, DiGiuseppe, & David, 2013; Appendix 1). PsyPills are rational thinking statements that were elaborated based on REBT theory (by David, 2006a). PsyPills promote rational beliefs (i.e., PRE, BAD, FT, USA) and aim to reduce irrational beliefs (i.e., DEM, AWF, LFT, SD); they are summarized in a Decalogue of Rationality and in specific PsyPills for various clinical conditions [e.g., anxiety (targeting mainly DEM and AWF), depression (targeting mainly DEM and SD), anger (targeting mainly DEM and LFT)]. Parental PsyPills (see Appendix 1) had to be used by parents between the sessions, by reading them each day.

The RETMAN rational stories intervention (RETMAN)

RETMAN is a cartoon character which was invented in order to make the principles of REBT more accessible among children and adolescents. The first RETMAN concept was developed at the Albert Ellis Institute, USA, in the 1980s (Merriefield & Merriefield, 1979), and was inspired by the name **R**ational **E**motive **T**herapy (RET was the name used at the time for current REBT). RETMAN was "reloaded", with the character having his own story (e.g., he is coming from a planet called Rationalia) and adventures in the book called "*Retmagic and the wonderful adventures of RETMAN*" (David, 2010; see for details http://www.retman.ro). For the original RETMAN story see here http://www.psychotherapy.ro/meet-retman/the-retmagic-of-retman/.

The RETMAN intervention was delivered in group setting, based on the *RETMAN* rational stories (David, 2010). This intervention was also delivered over three weeks, at the same time with the sRPP. There were three 40-minute sessions each week (a total of nine sessions during the three weeks). Each session was based on reading a story from the book and discussing the actions of the great wizard therapist. In the book, RETMAN takes the stance of a wizard psychotherapist, who helps children when they are suffering (i.e., anxiety, depression, anger, guilt) and teaches them how to be happy (by learning rational beliefs). The "magic" that RETMAN practice is called "Retmagic", and it is embedded in its five "secrets" for a healthy mood. RETMAN summarizes its "secrets" after the stories in the form of PsyPills ("psychological pills") for children (David, 2006; Appendix 2), which are derived from the ten commandments of rationality (David, 2006; Appendix 3). The commandments of rationality were previously tested and proved efficacious in reducing anxiety in teenagers (Lupu & Iftene, 2009).

The main themes included in the RETMAN intervention sessions were: understanding the connection between thinking and feeling, how irrational thoughts are causing unhealthy emotions, how to change irrational thinking with rational thinking, the consequences of rational thinking, and how RETMAN teaches children to think rationally. At the end, each child received a PsyPill (David, 2006) to use when feeling distressed. At the end of each session children

received as homework (1) the story, the comics *RETMAN (see here http://www.psychotherapy.ro/meet-retman/the-retmagic-of-retman/),* and the PsyPills (including the *Decalogue of Rationality*) – *how to get rid of depression, anxiety, and anger* – to read with their parents, and (2) a form containing a game based on the main characters in the story to be solved at home. The last group session consisted of a play organized based on the first story in the book - A v*isit on the Rationalia* - in which the children played the characters.

Data Analysis and Statistics

An alpha level of .05 was used for statistical tests. Univariate analyses showed that the data were suitable for further analyses, presented as follows. In the second step, for analyzing the hypothesized mechanisms of change, we used bootstrapping procedures for testing the indirect effect of the mediation (Preacher & Hayes, 2004).

Results

I. Descriptive analyses

Table 2 shows the means and standard deviations for each of the variables by condition and by assessment time.

II. Attrition

No dropout was registered due to the fact that the programs were delivered in the school and parents/children were offered extra sessions in case they missed them.

III. Missing data

We minimized the risk of missing data by avoiding unobserved measurements as much as possible. Missing or incomplete data were imputed with the average score of the completed items when no more than four items were missing.

IV. Pre-treatment analyses

We compared both conditions on the pre-treatment variables to determine if there were any significant differences between them before treatment. The initial levels of externalizing syndromes reported by teachers (TRF) were significantly lower in the RETMAN group compared to the sRPP group ($t(30) = 2.44$, $p = .021$). Thus, this initial level was used as covariate when analyzing the effect of the interventions at post-test. No other differences were obtained based on the initial reports, neither in terms of continuous or categorical analyses between the two groups.

Table 2. Descriptive data at pre-test and post-test for the RETMAN and sRPP conditions

Outcome type	Report type	Variables	PRE-TEST				POST-TEST			
			RETMAN (*N* = 15)		sRPP (*N* = 17)		RETMAN (*N* = 15)		sRPP (*N* = 17)	
			M	*AS*	*M*	*AS*	*M*	*AS*	*M*	*AS*
Child variables	Teacher report	IntSyndr	4.06	4.63	6.00	4.58	3.06	3.55	5.41	3.67
		ExtSyndr	5.80	3.82	9.23	4.08	3.33	2.87	6.35	3.01
	Parent report	IntSyndr	6.80	4.00	6.76	3.81	4.80	2.98	4.29	3.25
		ExtSyndr	9.40	4.70	10.47	5.55	6.73	3.80	7.11	4.04
		AffP	4.73	1.79	4.76	1.75	3.20	1.26	3.35	1.32
		AnP	4.00	2.95	3.70	2.20	2.40	1.50	1.82	1.50
		SomC	0.40	0.63	0.52	0.62	0.40	0.63	0.49	0.56
		AD/HP	4.13	2.44	5.11	2.66	3.26	2.05	4.29	2.61
		ODP	2.13	1.76	2.70	2.22	1.66	1.71	2.00	1.80
		CP	4.33	3.61	5.94	3.38	3.00	2.50	3.47	2.37
	Child report	DEM-F	16.00	1.96	17.58	2.37	14.66	2.09	17.41	2.67
		LFT-W	18.93	4.57	18.58	5.70	16.06	2.76	18.41	4.84
		LFT-R	23.60	4.88	22.23	5.58	19.66	3.43	20.23	5.59
		AngExp	33.20	5.97	34.52	5.76	29.86	4.64	34.41	5.84
		AngHo	10.73	0.70	11.88	2.71	9.13	2.32	10.29	3.25
		AngDestr	13.00	3.11	11.52	2.89	10.73	2.21	11.11	2.64
		AngPosC	14.06	0.88	14.58	1.50	16.80	2.51	16.00	2.06
Parent variables	Parent report	IBs	28.26	6.71	29.29	7.15	23.60	6.95	28.23	5.26
		RBs	37.66	2.35	36.70	3.85	41.60	4.22	39.47	2.74
		PS Lax	42.66	4.41	43.47	4.78	41.80	3.48	38.41	4.04
		PS OverR	41.80	4.88	43.47	4.91	39.86	4.24	39.64	3.23
		PS Verb	34.66	4.80	35.70	4.05	33.46	4.24	28.00	2.82
		PSS	37.93	6.22	38.58	6.76	34.53	4.30	35.70	3.70

Note: IntSyndr = Internalizing syndromes; ExtSyndr = Externalizing syndromes; AffP = Affective problems; AnP = Anxious problems; SomC = Somatic complaints; AD/HP = Attention Deficit/Hyperactivity problems; ODP = Oppositional problems; CP = Conduct problems; DEM-F = CASI, DEM for fairness; LFT-W = CASI LFT work; LFT-R = CASI LFT rules; AngExp = MSAI –R, Anger experienced; AngHo = MSAI –R, Hostile Attitudes; AngDestr = MSAI –R, Anger – Destructive expression; AngPosC = MSAI –R, Anger – Positive coping; IBs =P-RIBS, Irrational Beliefs; RBs = P-RIBS Rational Beliefs; PS = Parenting Scale; Lax = PS Laxness; OverR = PS, Over-reactivity; Verb = PS, Verbosity; PSS = Parent Stress Scale.

V. Post-treatment analyses

Between groups inferential analyses

Child outcomes: continuous analyses

Primary outcomes. We compared the externalizing syndromes reported by the teachers (TRF) at post-test using as covariate their initial levels; significant differences were found, favoring the RETMAN group ($F(1,30) = 5.63$, $p = .024$, Cohen's $d = 1.02$). No other significant differences were observed between the two groups based on parent or teacher reports of child emotional or behavioral problems (all ps > .05).

Secondary outcome. In terms of the child anger in school context (MSAI), significantly lower levels of anger were reported by the children in the RETMAN condition, compared to the sRPP condition ($t(30) = 2.41$, $p = .02$, Cohen's $d = .86$). No other differences in child-reported anger were found between the two groups after the interventions (all ps > .05).

Hypothesized mechanisms of change. Comparisons between groups for the level of irrational cognitions reported by the children (CASI) show a significantly higher reduction in irrational demands for fairness in the case of children in the RETMAN condition compared to the sRPP condition ($t(30) = 3.20$, $p = .003$, Cohen's $d = 1.14$). No other differences were obtained between the two groups in terms of child-reported irrational cognitions after the programs (all ps > .05).

Child outcomes: categorical analyses

We analyzed the proportion of response rates for children in each condition, at post-treatment. Response rates are used to assess the clinical significance of the treatment conditions and refer to the children that no longer meet the inclusion criteria.

Response rates for externalizing syndromes after the intervention were 88.2% in the sRPP and 93.3% in the RETMAN condition, in terms of the CBCL; for the TRF, we obtained 94.1% response rates in the sRPP, and 80% in the RETMAN condition.

In terms of internalizing syndromes, we obtained response rates of 94.1% in the sRPP and 93% in the RETMAN group on the CBCL; for the TRF, response rates were 88.2% in the sRPP group and 86.7% in the RETMAN group.

Categorical comparisons showed no significant differences in terms of response rates on the child outcomes between the two conditions (all ps>.05).

Parental measures

Significant differences were obtained when comparing improvements in dysfunctional parenting at post-treatment, favoring the sRPP group compared to the RETMAN condition, in terms of laxness ($t(30) = 2.51$, $p = .017$, Cohen's $d = .91$) and verbosity ($t(30) = 4.33$, $p = .001$, Cohen's $d = 1.57$). Significant differences were obtained between the groups at post-test on irrational cognitions (P-RIBS) reported by the parents ($t(30) = 2.14$, $p = .041$, Cohen's $d = .78$), with greater reduction in the RETMAN group compared to the sRPP group. No

differences were obtained between the two groups at post-treatment in terms of parental distress ($p > .05$).

Within groups inferential analyses

In order to maintain the type I error at a minimum level, we adjusted the significance level to .01 for the subgroup analyses (Feise, 2002).

Table 3 presents changes from pre- to post-test for teacher and parent reports of child psychopathology.

Table 3. Within groups comparisons (pre-post) for the child measures (I)

		Teacher		Parent report							
Group	Coef	Ext Syndr	Int Syndr	Ext Syndr	Int Syndr	AfP	AnP	SomC	AD/H P	ODP	CP
sRPP *N* = 17	*t*	3.48*	.90	3.71*	2.91	1.76	3.51*	-1.00	3.04*	1.37	6.76*
	p	.003	.337	.002	.010	.096	.003	.33	.008	.188	.001
	d	1.74	.45	1.85	1.45	.88	1.75		1.52	.68	3.38
RETMAN *N* = 15	*t*	2.24	1.70	3.91*	2.35	1.91	3.40*	1.00	1.94	1.46	3.83*
	p	.041	.111	.002	.034	.076	.004	.334	.072	.164	.002
	d	1.19	.90	2.08	1.25	1.02	1.81	.53	1.03	.78	2.04

Note: IntSyndr = Internalizing syndromes; ExtSyndr = Externalizing syndromes; AffP = Affective problems; AnP = Anxious problems; SomC = Somatic complaints; AD/HP = Attention Deficit/Hyperactivity problems; ODP = Oppositional problems; CP = Conduct problems. *Comparisons were significant at the .01 level.

Table 4 presents changes from pre- to post-test for child reports of anger and irrational cognitions.

Table 4. Within groups comparisons (pre-post) for the child measures (II)

		Child report						
Group	Coef	DEM -F	LFT-R	LFT -W	Anger Experience	Anger Hostility	Anger Destructive	Anger PosC
sRPP	*t*	.24	3.15*	1.13	2.81	2.59	-.23	-3.28*
N=17	*p*	.808	.006	.272	.012	.020	.814	.005
	d	.12	1.57	.56	1.40	1.29	.11	-1.64
RETMAN	*t*	2.04	1.96	3.19*	5.16*	2.79	3.77*	-4.15*
N=15	*p*	.06	.07	.002	.001	.014	.002	.001
	d	1.09	1.04	1.70	2.75	1.49	2.01	2.21

Note: DEM-F = CASI, DEM for fairness; LFT-W = CASI LFT work; LFT-R = CASI LFT rules; AngExp = MSAI –R, Anger experienced; AngHo = MSAI –R, Hostile Attitudes; AngDestr = MSAI –R, Anger – Destructive expression; AngPosC = MSAI –R, Anger – Positive coping. *Comparisons were significant at the .01 level.

Table 5 presents changes from pre- to post-test for parent reports of parent distress, parenting and parental irrational cognitions.

Table 5. Within groups comparisons (pre-post) for parent measures

		Parent report					
Group	Coef	PSS	PS Lax	PS OverR	PS Verb	IBs	RBs
sRPP	*t*	2.67	6.07*	3.66*	8.73*	.83	-4.58*
N=17	*p*	.016	.001	.002	.001	.41	.001
	d	1.33	3.03	1.83	4.35	.41	2.29
RETMAN	*t*	1.512	1.000	3.73*	1.369	1.41	-3.06*
N=15	*p*	.153	.334	.002	0.19	.18	.008
	d	.80	.53	1.99	.72	.75	-1.63

Note: PS = Parenting Scale; Lax = PS Laxness; OverR = PS, Over-reactivity; Verb = PS, Verbosity; PSS = Parent Stress Scale; IBs =P-RIBS, Irrational Beliefs; RBs = P-RIBS Rational Beliefs. *Comparisons were significant at the .01 level.

VI. Mechanisms of change analyses

We considered several steps recommended in exploring the mechanisms of change involved in the clinical interventions (see Kazdin & Nock, 2003; Weersing & Weisz, 2002).

First, it is necessary to determine whether the interventions are efficacious. We found differences between the two conditions on two of the outcomes (externalizing syndromes reported by the teachers [TRF] and anger experience reported by the children), enabling us to explore the mechanisms of change in the RETMAN rational stories intervention. Second, the influence of the intervention on the hypothesized mechanisms of change needs to be analyzed. We obtained differences for RETMAN in terms of irrational cognitions, which we will analyze as mechanisms of change. Third, it is necessary to look at how hypothesized mechanisms of change influence the outcomes. Finally, the question must be answered of whether intervention effects can be accounted for by the hypothesized mechanisms of change. We focus on the third and fourth conditions as follows and we drop the analysis of the variables, from one step to the other, if they do not fit the previous criterion.

The type of condition (RETMAN vs. sRPP) was "dummy" coded as an independent variable (see Kazdin & Nock, 2003). Residual differences pre-posttest on child externalizing score, measured by the externalizing syndromes subscale of the TRF and school experienced anger (MSAI), were the outcome variable. The relation between the intervention (A) and therapeutic change (C) must be reduced after statistically controlling for the proposed mediator (B).

In order to test the indirect effect of the mediation, we used bootstrapping procedures resampled 1000 times and used the percentile method to create 95%

confidence intervals. The bootstrap test of the indirect effect provides an estimated standard error and a confidence interval for population value. The preconditions for using bootstrap are that (a) there exists an effect to be mediated and (b) the indirect effect to be statistically significant in the direction predicted by the mediation hypothesis (Preacher & Hayes, 2004). The indirect effect is significantly different from zero at $p < .05$, and thus mediation occurs, when zero is not in the 95% confidence interval. We chose bootstrap analysis against other formal approaches (i.e., Baron & Kenny, 1986) since it is considered to provide a more powerful strategy for testing mediation (Preacher & Hayes, 2004).

We considered the level of externalizing syndromes reported by parents (TRF) at post-treatment as the dependent variable, child-reported demandingness for fairness as mediator variable (considered the delta residual change between pre and post- intervention levels) and the group (dummy coded) as the independent variable. Bootstrap test estimated an indirect effect of child demandingness for fairness on child externalizing syndromes of .33 (*SE* =.35) with a 95% confidence interval (corrected and accelerated) between -.15 and 1.26, which shows the indirect effect is not significantly different from 0 at $p < .05$.

We afterwards considered the level of experienced anger reported by children at post-treatment as dependent variable, child reported demandingness for fairness as mediator variable (considered the delta residual change between pre and post- intervention levels) and group (dummy coded) as independent variable. Bootstrap test estimated an indirect effect of child demandingness for fairness on child experienced anger of .12 (*SE* = .37) with a 95% confidence interval (corrected and accelerated) between -.48 and 1.07, which shows the indirect effect is not significantly different from 0 at $p < .05$.

Discussion and conclusions

This study investigated the efficacy of two types of short REBT/CBT interventions for child affective and behavioral problems. Our results show that both the sRPP and the RETMAN rational stories intervention had a positive impact on child emotional and behavioral problems (from pre to post-tests). However, some changes in child and parent variables were specific to each program (some of them as we hypothesized).

The RETMAN intervention produced large effect changes in child externalizing syndromes reported by teachers at the end of the intervention, compared to the sRPP condition. Also, the RETMAN intervention resulted in high magnitude changes in child reported anger experienced in school, compared to the sRPP condition. In terms of child beliefs, significant reductions were obtained in the case of the RETMAN intervention compared to the sRPP, but only for child demands for fairness. Moreover, the RETMAN intervention had better outcomes compared to the sRPP in reducing parental irrational cognitions. This

suggests that the metaphoric approach was more effective than the didactic approach in targeting parents' irrational cognitions.

As hypothesized, significant intergroup differences, favoring the sRPP were obtained at post-test for parenting dimensions of laxness and verbosity. Not only these comparative effects were significant, but it is important to mention that they were high in magnitude, showing rather specific changes in each program. No differences were obtained in parent's distress between the conditions (at the restrictive .01 significance level). This is surprising since, while the sRPP was directly focused on parent distress, the RETMAN intervention only tangentially targeted it, by means of the stories read by parents for their children. Thus, our findings show that parents could also emotionally benefit from reading rational stories with their children.

While both programs produced changes from pre- to post-test in most of the variables, the higher effect changes were in the area of externalizing disorders (oppositional problems, attention deficit/hyperactivity, and conduct problems). However, internalizing syndromes were also affected by both interventions (affective and anxiety problems), with medium to large effect sizes fro pre- to post-tests. A surprising effect was obtained for somatic complaints as reported by parents, which were reduced significantly in the RETMAN group.

An interesting finding was that in both groups we obtained an increase in adaptive anger (i.e., annoyance). This shows that either through their parents or directly through story characters, children were able in the end to regulate their anger and experience a functional annoyance when confronted with negative events. This is line with the binary model of distress, as proposed by David, Montgomery, Macavei, & Bovbjerg (2005).

Since we obtained intergroup differences in the main child outcomes favoring the RETMAN condition, we investigated its mechanisms of change, using the sRPP as reference condition. We were not able to find a mediating effect for child demands for fairness for changes in child externalizing syndromes or for changes in experienced anger. This could mean that there were other mechanisms not taken into account, responsible for these changes (e.g., teacher expectancies) or the fact that we had insufficient statistical power to capture these effects. Future studies should clarify these aspects.

Since the two separate interventions each had specific effects on certain variables, their combined effect might have been superior. This hypothesis needs to be tested in randomized clinical trials in order to determine their separate and combined efficacy for child and parent outcomes.

One of the main limits of the present study was the small sample size. Future studies will need to include a larger sample in order to perform more complex analyses. Also, a combined intervention with both components of parent program and rational stories could allow more specific conclusions for the additive effects of the two treatment strategies.

Although not without limitations, the present study has important implications for the treatment of child psychopathology. Depending on the context where the problem is manifested, our results suggest that we may want to choose various intervention strategies. When externalizing syndromes are a problem at school, or the child reports experiencing anger mainly in school, our study shows that the RETMAN rational stories are advisable as intervention. In turn, the short Rational Parenting Program had better parenting outcomes for laxness and verbosity, which recommends it in cases when child psychopathology is displayed mostly at home. All these effects were of high magnitude, showing specific action for both programs, with more generalized benefits of the RETMAN intervention. Since both programs change irrational thinking, empirical support is offered for the use of the PsyPills when working with both children and parents.

Results showing slightly more generalized improvements for the RETMAN rational stories, compared to the short Rational Parenting Program, considered reference treatment, are encouraging for the RETMAN program. Thus, the wizard therapist RETMAN, with not only fabulous but also evidence-based powers, could give a helping hand to parents in teaching children rational thinking strategies for a better mood.

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Appendix 1

PsyPills for parents

(Developed by Gavita & David; Gavita, DiGiuseppe, & David, 2013)

- I can accept myself as a parent even when my child does not obey or respect me.
- When my child does not obey, I accept him/her despite this behavior.
- I can accept myself even if sometimes I consider that I am not a good parent; I will do everything in my power to change my inefficient behaviors.
- When I am not a good parent, I can accept my children as being worthwhile and not condemnable.
- When my children do not appreciate or respect me, I can accept that it does not influence my self-worth, their worth in any way and it does not mean that my life is completely bad.
- When I have difficulty parenting, I can accept that it does not influence my self-worth in any way.
- I very much want to be obeyed by my child, but I accept that things do not have to always be how I want.
- I very much want to be a good parent and I am doing everything in my power for this, but if I do not manage to be a good parent all the time, it does not mean that I am worthless; it just shows that I had a poor behavior which can be improved in the future.
- It is preferable to be obeyed by my child, and I am doing efforts for this, but when I do not manage this, it is very bad but not awful, and I can stand it.
- I want very much to be appreciated and respected by my children, and I do my best to get it, but I accept that just because I want and/or worked hard for this, it does not mean that it absolutely must happen.
- It is very bad and unpleasant if my children do not appreciate or respect me, but I can stand it, and try to find solutions, positive alternatives, and/or ways to cope.
- I can stand when my child disobeys me, although it is difficult for me to tolerate it.
- It is unpleasant and unfortunate to be disobeyed by my own child but it is not terrible, and I can find solutions, positive alternatives, and/or ways to cope.

Appendix 2

PsyPills for the Retman group
(David, 2010)

"Psychological pill" for regulating anger, irritation, frustration, and aggressive behavior
I would like things to be different, but I know that my wish does not necessarily come true just because I want to.
I can accept the fact that in life bad or unwanted things can happen to me, even if it is unpleasant.
I can stand if this happens, even if I do not want or like it.
I can tolerate what I feel, even if I do not feel something pleasant.
I can stand the presence of this thought, even if I do not like it.
I can accept the fact that I did this, even if I would have preferred not to do it.
I can accept others' behaviors, even if they are not always doing what I want.

"Psychological pill" for regulating anxiety, panic, fear, and worry
I would like things to be different, but I know that my wish does not necessarily come true just because I want to.
I can accept the fact that in life bad or unwanted things can happen to me, even if it is unpleasant and I did everything possible to avoid them.
It is very unpleasant that something like this happened to me, but it is not the worst thing possible.
I think I can handle even worse situations than what I am facing now.
It is very unpleasant but is not awful if in this situation I will not be able to be in control like I would want to.
It is bad but not catastrophic to feel this kind of emotions.
It is unpleasant but not awful to have this type of thoughts.

"Psychological pill" for regulating depressive mood, and prolonged sadness
I would like things to be different, but I know that my wish does not necessarily come true just because I want to.
I can accept that in life unwanted things happen to me, even if it's sad.
I was wrong behaving this way, but I stay a worthwhile person, through the simple fact that I am a human being.
Maybe this reaction is a sign of weakness but it does not show my value as a person.
Even if I do not always manage things as well as I would want to, I remain a good and worthy person.
I am satisfied with myself even though I know that I am not perfect.

Appendix 3

The Ten Commandments of Rationality (The Decalogue of Rationality)

(David, 2006)

1. IT WOULD BE PREFERABLE that you succeed in everything you attempt, and do everything in your power for this to happen, BUT IF YOU DO NOT SUCEED it does not mean that you are worthless as a person, but that you've had a less desirable behavior, which can be improved in the future.

2. IT WOULD BE PREFERABLE that you succeed in everything you attempt, and do everything in your power for this to happen, BUT IF YOU DO NOT SUCCEED, remember that it is only (very) bad, not catastrophic (the worst thing that could happen to you).

3. IT WOULD BE PREFERABLE that you succeed in everything you attempt, and do everything in your power for this to happen, BUT IF YOU DO NOT SUCCEED, you can tolerate it, and go on enjoying life, even if it's more difficult in the beginning.

4. IT WOULD BE PREFERABLE that the others be nice and/or fair to you, BUT IF THEY ARE NOT, it does not mean that your or they are worthless human beings.

5. IT WOULD BE PREFERABLE that the others be nice and/or fair to you, BUT IF THEY ARE NOT, remember that it is only (very) bad, not catastrophic (the worst thing that could happen to you).

6. IT WOULD BE PREFERABLE that the others be nice and/or fair to you, BUT IF THEY ARE NOT, you can tolerate it, and go on enjoying life, even if it's more difficult in the beginning.

7. IT WOULD BE PREFERABLE that life be fair and easy, BUT IF IT IS NOT, it does not mean that you are worthless as a person, and/or that life is unfair.

8. IT WOULD BE PREFERABLE that life be fair and easy, BUT IF IT IS NOT, remember that it is only (very) bad, not catastrophic (the worst thing that could happen to you).

9. IT WOULD BE PREFERABLE that life be fair and easy, BUT IF IT IS NOT, you can tolerate it, and go on enjoying life, even if it's more difficult in the beginning.

10. THE ONLY THING THAT MUST BE, IS THAT NOTHING MUST ABSOLUTELLY BE!

The Ten Commandments of Irrationality
(David, 2006)

1. YOU MUST succeed in everything you do, OTHERWISE you are worthless as a human being (you are unimportant/ inferior/ weak).

2. YOU MUST succeed in everything you do, OTHERWISE it is awful and catastrophic (the worst thing that could happen to you).

3. YOU MUST succeed in everything you do, OTHERWISE you cannot tolerate it (it is intolerable).

4. The others MUST be fair and/or nice to you, OTHERWISE you are worthless as a human being (you are unimportant/ inferior/ weak) and/or OTHERWISE they are worthless (evil).

5. The others MUST be fair and/or nice to you, OTHERWISE it is awful and catastrophic (the worst thing that could happen to you).

6. The others MUST be fair and/or nice to you, OTHERWISE you cannot tolerate it (it is intolerable).

7. Life MUST be fair and easy, OTHERWISE you are worthless as a human being (you are unimportant/ inferior/ weak) and/or life is unfair.

8. Life MUST be fair and easy, OTHERWISE it is awful and catastrophic (the worst thing that could happen to you).

9. Life MUST be fair and easy, OTHERWISE you cannot tolerate it (it is intolerable).

10. I, THE OTHERS AND/ OR LIFE MUST ABSOLUTELLY…