

Effects of a REBT Based Training on Children and Teachers in Primary School

Chiara Caruso¹ · Lidia Angelone¹ · Elisa Abbate¹ ·
Valentina Ionni¹ · Claudia Biondi¹ · Cinzia Di Agostino¹ ·
Alice Mobili¹ · Roberta Verità¹ · Riccardo Navarra⁴ ·
Giovanni Maria Ruggiero^{1,2,3,5,6} · Clarice Mezzaluna^{1,2,3}

Published online: 12 April 2017

© Springer Science+Business Media New York 2017

Abstract Rational Emotive Education (REE) is a psychological educational program offering a preventative psycho-educational curriculum to children in order to teach them emotional literacy skills. REE helps children by teaching them to challenge irrational thinking, to minimize their reactions to disappointment and frustrations, to cope more effectively with problems, and to more fully accept themselves. The efficacy of REE training for children and teachers was examined in a sample of 211 third grade students from nine different classes and 26 teachers. Each class was randomly assigned to one of three different groups, two experimental groups and a control group, each receiving different training. First objective of our study was to evaluate the efficacy of a REE training based on storytelling in changing children's irrational beliefs. Second objective of our study was to observe the efficacy of a teachers' training similar to that applied in REBT-focused school consultation groups in enhancing their self-efficacy. Results show an improved tendency in children to think rationally and an enhanced perception of self-efficacy in teachers for those groups that underwent the training compared to the control group. Our results suggest that REBT based trainings for children and teachers

✉ Chiara Caruso
info.chiaracaruso@gmail.com

¹ Cognitive Psychotherapy School and Research Center, Studi Cognitivi, Viale Secondo Moretti 44, 63039 San Benedetto del Tronto, AP, Italy

² Cognitive Psychotherapy School and Research Center, Studi Cognitivi, Milan, Italy

³ Cognitive Psychotherapy School and Research Center, Studi Cognitivi, Modena, Italy

⁴ Department of Neuroscience and Imaging, "G. d'Annunzio" University, Via dei Vestini 31, 66100 Chieti, Italy

⁵ Sigmund Freud University, Ripa di Porta Ticinese 77, 20143 Milan, Italy

⁶ Sigmund Freud University, Freudplatz 1, Messestraße 1, 1020 Vienna, Austria

should be integrated into the classroom curriculum in order to prevent mental health problems and encourage positive social and emotional well-being.

Keywords Rational Emotive Education · Primary school · Children · Teachers · Prevention

Introduction

Primary school is one of the first educational environments in which children acquire not only cognitive and academic skills, but also relational and emotional management skills. Therefore, it is necessary to intervene with educational training that is not limited to only providing scholastic knowledge, but also geared towards improving children's skills the emotional-affective dimension (Knaus 1977a, b, 2004; Knaus and Haberstroh 1993). This is in line with the current of Social and emotional learning (SEL).

SEL promotes students' social and emotional skills such as problem and feeling identification, goal setting, conflict-resolution strategies, and interpersonal problem-solving skills (Elias et al. 1997; Zins and Elias 2006). Through SEL programs children "acquire the knowledge, attitudes, and skills to recognize and manage their emotions, set and achieve positive goals, demonstrate caring and concern for others, establish and maintain positive relationships, make responsible decisions, handle interpersonal situations effectively" (Payton et al. 2008). Several studies show that SEL has a positive impact in reducing problem behaviors, promoting positive adjustment, and enhancing academic performance (Diekstra 2008; Greenberg et al. 2003; Wilson et al. 2001; Weissberg et al. 2003; Zins et al. 2004).

Already in 1972, Albert Ellis supported the necessity to provide a preventative psycho-educational curriculum to children in order to teach them emotional literacy skills.

The Rational Emotive Behaviour Therapy (REBT) proposed by Albert Ellis teaches people that their emotions do not directly stem from activating events but from their belief systems about those activating events (Ellis 1962). According to the ABCDE model, central to REBT, people experience activating events (A), about which they have rational or irrational beliefs (B). These beliefs lead to emotional, behavioral, and cognitive consequences (C). Rational beliefs (RBs) lead to functional consequences, while irrational beliefs (IBs) lead to dysfunctional consequences. REBT encourages people to actively dispute (D) their IBs and to assimilate more efficient (E), functional and adaptive beliefs, leading to emotional, cognitive, and behavioral changes (Ellis 1962, 1994; Walen et al. 1992; David et al. 2005).

Bernard (2004) and Ellis and Bernard (2006) propose that children's irrational beliefs are a major contributor to emotional distress. DiGiuseppe and Bernard (2006) stated "As with adults, rational-emotive behavior therapy (REBT) hypothesizes that children's disturbed emotions are largely generated by their beliefs (Ellis 1994). Irrational beliefs and distortions of reality are likely to create anger, anxiety, and depression in children just as they do with adults". In the 43rd annual

conference of the Australian Psychological Society, Bernard (2008) stated that the essentials of REBT applied to young people include: first, teaching them an emotional vocabulary, to help children and adolescents conceptualize relationships among thinking, feeling and behaving; second, teaching them disputing strategies to identify and change irrational behavior; and third encouraging young people to use rational rather than positive self-statements by assigning them homework to practice new ways of thinking, feeling and behaving. Bernard (2008) affirmed that, to prevent mental health problems and encourage positive social and emotional well-being there is a need to:

- (a) Promote self-Acceptance in children, teaching them to never rate themselves in terms of their behavior and to separate judgments based on their actions from those based on self-worth;
- (b) Learn frustration tolerance, explaining to them that frustration and obstacles are a normal part of life;
- (c) Learn the acceptance of others, teaching them to rate people by their actions and to separate judgments of people's actions from judgments about their self-worth.

Rational Emotive Education (REE), an extension of REBT, was developed by Knaus (Knaus 1977a, b) with the intent of offering a "preventive-interventionist approach by which children can be taught sane mental health concepts and the skills to use these concepts". We suppose that REE can be thought as a practical model to promote SEL in school context.

REE is a psychological educational program composed of structured lessons. This kind of training helps children by teaching them to challenge irrational thinking, to minimize their reactions to disappointment and frustrations, to cope more effectively with problems, and to more fully accept themselves (Knaus 1977a, b). Starting from Knaus (1974a, b), REE has been applied in schools as a form of prevention and intervention. Numerous studies were conducted demonstrating the efficacy of REE in reducing anxiety (Knaus and Bokor 1975; Brody 1974), increasing tolerance for frustration (Brody 1974), reducing impulsivity (Meichenbaum 1977) and improving the ability to cope with general problematic situations (Lafferty et al. 1964; Glicker 1968; Ellis 1972a, b; DeVoge 1974; Katz 1974; DiGiuseppe 1975; Knaus and McKeever 1977). Watter (1988) argued that REE modified anxiety levels as well as increased self-esteem and frustration tolerance in primary school children, making them more skilled at coping with emotionally difficult situations. Moreover, DiGiuseppe and Kassino (1976) demonstrated that REE led to lowered trait anxiety and neuroticism scores in a group of fourth and eighth grade students, compared to alternate treatment and no treatment controls. Rosenbaum et al. (1991) examined the impact of REE on the locus of control, rationality and anxiety in primary school children. Their results indicated that REE was effective in increasing children's perception of internal control and rationality.

Hajzler and Bernard (1991) reviewed 21 studies with nonclinical, learning disabled, high-risk, low self-esteem and anxious children, and a mixed group of

single studies populations of school-aged children, to determine the efficacy of REE. Their findings showed the effectiveness of REE in decreasing irrationality, increasing the internal locus of control, and decreasing the anxiety, particularly with learning disabled students.

Gonzalez et al. (2004) conducted a meta-analysis on 19 studies with 1021 subjects (children and adolescents under age 18). The investigation focused on behavioral and emotional problems such as conduct disorders, aggression, anxiety, disruptive classroom behavior, attention-deficit/hyperactivity disorder, low self-esteem, low self-concept, general anxiety, and low academic achievement. The authors found that REBT had a significant impact in decreasing disruptive behaviors in children and adolescents, and that children benefited more from REBT than adolescents. Adomeh (2006) showed that emotional adjustment problems could be solved psychologically, indicating that REBT effectively reduced the levels of anxiety and stress in adolescents and that this was useful for managing the classroom climate in order to facilitate the teaching/learning process.

Trip et al. (2007) conducted a meta-analysis on 26 REE articles and demonstrated that it had a powerful effect on lessening irrational beliefs and dysfunctional behaviors, and a moderate effect on positive inference making and decreasing negative emotions. Their results were in accordance with DiGiuseppe and Bernard (1990) who found that REE was efficient in diminishing irrational beliefs. More recently, Mahfar et al. (2014) demonstrated the effects of REE on decreasing irrational beliefs and stress among residential school students.

Studies were also conducted in order to investigate the impact of REBT on performance and stress levels of teachers. International studies calculated that approximately 60% to 70% of teachers repeatedly showed stress symptoms, and at least 30% of them had burnout symptoms (Antoniou et al. 2000; Capel 1992; Lale 2001; Rudow 1999). Calvete and Villa (1999) found a significant relationship between different types of irrational beliefs, symptoms of stress and burnout among secondary school teachers. More specifically, beliefs of inadequacy caused higher scores on the emotional exhaustion and anxiety scales.

Bermejo-Toro and Prieto-Ursúa (2006) examined the relationship between teachers' irrational beliefs and different measures of distress in 71 secondary education teachers, showing a significant positive correlation.

Teacher self-efficacy may be conceptualized as an individual teacher's belief in their own ability to plan, organize, and carry out activities that are required to reach given educational goals (Skaalvik and Skaalvik 2010). Skaalvik and Skaalvik (2007) found a strong correlation between teacher self-efficacy and teacher burnout. Jerald (2007) found that teachers with a stronger sense of efficacy tended to exhibit greater levels of planning and organization and were more resilient and less critical of students when they made errors. Bernard and DiGiuseppe (1994) proposed the use of REBT principles during consultation with teachers, as a support in dealing with specific problems emerging in the school environment.

The efficacy of REBT-focused school consultation in reducing teachers' unhealthy negative emotions and foster helpful behaviors was proven by different studies. Warren (2010) explored the impact of REBT consultation formats on the efficacy and irrational beliefs of teachers. Classroom management efficacy beliefs

were negatively correlated with irrational beliefs. Warren and Gerler (2013) found consultation decreased self-downing attitudes and authoritarian attitudes toward students. A negative correlation between efficacy beliefs and irrational beliefs was also found in a study of Warren and Dowden (2012) that explored the relationships between teacher efficacy beliefs, irrational beliefs, and negative emotions such as depression, anxiety, and stress. Positive correlation was found between irrational beliefs and depression, anxiety, and stress. In a recent study (Warren 2013) were teachers participating in REBT group consultation, an increase in well-being and improved relationships was observed.

First objective of our study was to evaluate the efficacy of a REE training based on storytelling in changing children's irrational beliefs. Storytelling is an important method to acquire knowledge and produce emotional and behavioural changes by means of metaphors and is considered an effective means to approach child psychopathology (Parker and Wampler 2006; Pomerantz 2006; Blenkiron 2011). A REE training performed by telling fables can be easily applied to children due to its simplicity and the interest that children show in fables. In line with current literature demonstrating the efficacy of REE in diminishing irrational beliefs (DiGiuseppe and Bernard 1990; Trip et al. 2007; Mahfar et al. 2014) we expected to observe a significant reduction of irrational beliefs for children taking part in this training.

Second objective of our study was to observe the efficacy of a teachers' training similar to that applied in REBT-focused school consultation groups (Warren 2013) in enhancing their self-efficacy, as conceptualized by Skaalvik and Skaalvik (2010).

Method

Participants

211 third grade children (104 girls, 107 boys, mean age = 9 years, standard deviation = 0; all Caucasian) and their 26 teachers (25 females, 1 male, mean age = 47.5 years, standard deviation = 9.43, age range 30–60 years; all Caucasian) were recruited to voluntarily participate in this study. We approached three schools located in central Italy and all agreed to participate in the project. For each school third grade classes were selected, so that children were able to read and write, for a total of nine classes involved in our research.

We asked for parental permission and all parents agreed their child's participation in the research, giving their informed consent.

Instruments

Self-efficacy scale (Caprara 2001). The scale is composed of 12 items such as "I'm able to quickly and effectively intervene in cases of transgressive behaviors", investigating teachers' self-efficacy perception through a 7-point Likert scale ranging from 1 = "strongly disagree" to 7 = "strongly agree". Higher scores indicate a high perception of self efficacy in handling critical situations. Cronbach's

alpha ($=0.88$) and *average inter-item correlation* ($=0.53$) show a moderate-to-high level of reliability for this scale.

Children's Survey of Rational Beliefs Form B (C.S.R.B.; Knaus 1974a, b), Italian version (Di Pietro 1992). It is an 18-item multiple choice test designed to measure rational beliefs in children ages 7 to 10. For each item children must select from three answers. For example, survey item number 7 asks "If you can't learn your school lessons right away:" possible answers outline irrational beliefs such as (a) "you should give up because you'll never learn right away" or (b) "the lessons are too hard", or rational beliefs such as (c) "you'll need more time to practice". Scores range from 1 to 18 and low scores indicate a more frequent endorsement of irrational beliefs. The scale lacks *normative* reliability and validity data (Bernard and Joyce 1984).

Procedure

The study design included pre-test and post-test of randomized groups. Each of the nine classes involved was randomly assigned to one of three different groups: two experimental groups and a control group. Each group was composed of three classes and each received different training. As subjects were not randomly assigned, even though classes were randomly assigned, this is a quasi-experimental design.

The first group (Group A) was composed of 68 children (38 girls, 30 boys) and 8 teachers. In this group, both children and teachers received the training. The second group (Group B) was composed of 78 children (37 girls, 41 boys) and 8 teachers. In this group only the children received the training. The third group (Group C) was composed of 65 children (29 girls, 36 boys) and 10 teachers (1 male) and neither students nor teachers received training.

Before and after training occurred, teachers completed the teacher self-efficacy scale (Caprara 2001) and children completed the Children's Survey of Rational Beliefs Form B (C.S.R.B.; Knaus 1974a, b), Italian version (Di Pietro 1992).

Teacher's Training

Teacher's training was conducted by cognitive-behavioral psychotherapists, specifically trained in REBT, through a total of eight 1-h sessions held over a 5-month period; i.e., approximately two sessions per month. The training focused on understanding the ABCDE model, identifying teachers' and children's irrational beliefs and linking them to their emotions and behaviors, in order to increase their sense of self-efficacy in challenging problems in the classroom.

Meeting 1 was a focus group on the topic of behavioral problems in the classroom. Then teachers were asked to write an example of a difficult situation in the classroom and to indicate their emotions in that situation, their behavioural strategies, and consequences of the adopted strategies. During meeting 2 the ABCDE model was introduced. Teachers had to indicate for the activating events, perceived as problematic, their emotions and had to rate the intensity of the emotion on a 0 to 10 scale. They were instructed to identify their beliefs related to specific emotions. In meeting 3, an explanation of Ellis' irrational beliefs was offered.

Teachers were asked to recognize a recent difficult situation and to identify their irrational beliefs. In meeting 4, an overview of the empirical, logical and heuristic disputes was offered. Starting from the irrational beliefs, such as demands, awful beliefs, frustration intolerance and depreciation beliefs, which emerged during previous meetings, teachers were supported in finding rational beliefs to replace the irrational ones. Meeting 5 started with an exemplified awkward situation for which teachers had to take children's point of view, finding related emotions and beliefs. Meeting 6 dealt with psychoeducation on assertive communication, to provide teachers with tools to communicate in a clear and unambiguous way with students. Meeting 7 was devoted to the difficult situations suggested by the teachers during the first meeting. Teachers had to construct two ABC grids, one from the teacher's and the other from the children's point of view, to dispute their own irrational beliefs and to reformulate irrational beliefs into more rational ones. The last meeting, meeting 8, was dedicated to the teachers' opinions about skills acquired and the difficulties encountered during the practical exercises.

Children's Training

Children's training was also conducted by cognitive-behavioral psychotherapists specifically trained in REBT. Training was conducted in regular-sized classrooms once a week over a 2-month period for a total of eight meetings lasting 1 h each. Two psychotherapists conducted the meetings in each class. No teachers were present in the classroom during the meetings.

Training was conducted by reading therapeutic fables for children (Verità 2000; Verità and De Marzi 2006) using 8 stories inspired to REBT and organized into vignettes. Fables were designed to teach children to transform irrational beliefs into rational beliefs, making them aware of the influence of thoughts on emotions. The characters of the stories had typical problems of childhood, related to self-acceptance, perfectionism, social anxiety, shame, acceptance of others and socialization, frustration tolerance, procrastination and parental separation. By reading fables, children learn how to implement alternative thoughts, emotions and behaviors to solve similar problems. For example, in the first fable "La volpe Giulia" ("Giulia the fox") the little fox is very sad because she is focusing on a negative self-evaluation, thinking "if I make a mistake, I'm completely wrong" after receiving bad grades. The little fox meets a mole that shows her she actually only made a few mistakes, probably because she was distracted. Therefore, the bad grades did not mean she was completely wrong. The mole reminds her she has many good qualities even if bad things happen. After focusing on her positive qualities, the fox becomes more joyful, thinking that everyone makes mistakes. The fox finally is capable of separating judgments of her actions from judgments of self-worth and reformulates her dysfunctional thinking as "if I make a mistake, I'm not completely wrong!"

Objectives of the training were to teach children an emotional vocabulary, introduce them to the use of ABCDE model to conceptualize relationships among thinking, feeling and behaving and adopt disputing strategies to identify and change irrational beliefs into rational beliefs.

Each meeting was structured in two parts: storytelling and teamwork. In storytelling, each meeting began with reading a fable which was followed by a group discussion aimed at summarizing the general plot of the story. Fables were read by the psychotherapists. In teamwork, after graphically representing on the blackboard the vignettes contained in each story, psychotherapists guided children in the formulation of the ABCDE, inviting them to identify the emotions and the corresponding beliefs thought by the protagonists. After identifying dysfunctional thoughts, disputing was often conducted through the interaction between the classmates, followed by the reformulation of the dysfunctional thoughts into functional ones guided by the team of psychotherapists.

Results

Data relative to the teachers' training violate the homogeneity of variance assumption (Levene's test, $F = 7.819$, $p = .003$) and are very skewed (Skewness = -1.474).

We performed non parametric Kruskal–Wallis test on pre training differences and pre- post training differences for self-efficacy scores, with the group (A: Children and teachers training; B: Children training; C: No training) as independent variable.

Kruskal–Wallis conducted on pre training scores revealed no difference between the groups $H(2, N = 26) = 1.59$, $p > .05$.

Kruskal–Wallis revealed a significant difference between groups in pre-post differences for Self-efficacy scores $H(2, N = 26) = 10.37$, $p < .05$ at α level of 0.05.

For each group Wilcoxon Matched Paired test on pre-post differences in Self-efficacy scores were performed. Analysis showed a significant pre-post difference only in the group A, $N = 8$, $T = 0.00$, $Z = 2.37$, $p < .05$, $r = 0.84$. The effect size calculated through Cohen's d is -0.99 .

Mean of Self-efficacy Scale pre- and post- training rates are indicated in Table 1.

Data from the children's C.S.R.B. questionnaire were checked for normality using Kolmogorov test before performing the data analysis. Both pre and post samples were normally distributed (Pre: K–S $d = 0.13$, $p < .01$ Post: K–S $d = 0.11$, $p < .01$).

Pre-test scores were analyzed for possible pre-existing between-group differences that could affect post-test score differences. A one-way ANOVA was performed on pre-test scores obtained with the C.S.R.B. questionnaire with Group (A: Children and teachers training; B: Children training; C: No training) and Sex (F and M) as categorical predictors. Results showed a difference between Groups $F(2, 205) = 6.32$, $p < .05$ $\eta_p^2 = 0.06$ and Sex $F(1, 205) = 7.79$, $p = .05$ $\eta_p^2 = 0.04$ at α level of 0.05 with female showing higher scores than males (Mean_{Females} = 10.85; Mean_{Males} = 10.01) and Group B showing lower scores than other Groups. Bonferroni correction revealed a significant difference between groups A–B ($p < .05$) and B–C ($p < .05$).

Table 1 Means, medians, and standard deviations of pre- and post- training scores for all groups on the self-efficacy scale

Group	Pre			Post			Effect size
	M	Median	SD	M	Median	SD	Pre to post <i>d</i>
A Children and teachers training	62.75	68	11.84	71.75	72	1.98	-0.99
B Children training	58.13	56.5	11.58	68.13	68.5	4.82	-1.07
C No training	65.40	62	8.25	64.30	62.5	7.75	-0.14

A repeated-measures ANOVA was performed on C.S.R.B. questionnaire rates with the Training (Pre and Post) as within factor and the group (A, B, and C) and Sex (F and M) as categorical predictors.

Results revealed a significant difference between Males and Females scores $F(1, 205) = 14.18, p < .001, \eta_p^2 = .06$ at α level of .05 with female showing higher scores (Females Mean = 10.67; Males Mean = 11.64). A significant effect of the Training was also observed $F(1, 205) = 69.78, p < .001, \eta_p^2 = 0.25$ with post test scores higher than pre test scores (Post test Mean = 11.87; Pre test Mean = 10.43). A significant Training \times Group interaction was observed $F(2, 205) = 15.14, p < .001, \eta_p^2 = .13$ at α level of .05. Post hoc analysis conducted with Bonferroni correction on the interaction Training \times Group revealed significant differences in pre- post training in the Groups A ($p < .001$) and B ($p < .001$), but not in C ($p > .05$), thus confirming the expected effect only in the groups that received training. Effect size of pre to post change for each Group was calculated through Cohen's *d* statistics. For Group A $d = -0.53$, for Group B $d = -1.13$, for Group C $d = -0.09$. The between group effect size was also calculated, to know the size of the difference between the treatment groups (A and B) and the control group (C). For A-B difference $d = -0.05$, for A-C difference $d = 0.49$, for B-C difference $d = 0.50$.

Mean of C.S.R.B. pre- and post- training scores are indicated in Table 2.

Results revealed no Training \times Group \times Sex interaction.

Table 2 Means, medians, and standard deviations of pre- and post- training scores for all groups on the Children's Survey of Rational Beliefs

Group	Pre			Post			Effect size
	M	Median	SD	M	Median	SD	Pre to post <i>d</i>
A Children and teachers training	10.79	11	2.32	12.28	12	2.32	-0.53
B Children training	9.67	10	2.21	12.24	12	2.20	-1.13
C No training	10.80	11	2.10	11.02	11	2.57	-0.09

Discussion

This study aimed to verify the efficacy of a REBT based trainings for children and teachers. Results substantially confirmed our hypothesis, showing the efficacy of trainings in enhancing rational thinking in children and self efficacy perception in teachers.

In children, a significant difference was observed in pre training C.S.R.B. scores between Groups, but unfortunately we did not investigate pre-training cultural and individual differences that could influence the results. Regarding future research it should be interesting to consider the influence of these factors.

A significant difference was observed in pre to post training difference between males and females, with females showing higher scores than males. This appears in contrast to Ndika et al. (2008) that found female adolescents endorsed more with irrational ideas than the male adolescents. Moreover Calvete and Cardeñoso (2005) in a previous study found female adolescents had lower levels of positive thinking and higher scores on negative problem orientation, need for approval and success, and self-focused negative cognitions and males had higher scores on justification of violence beliefs and the impulsivity style of problem solving. Further studies are needed to clarify gender differences in irrational beliefs in children.

Results confirm the positive effect of training on children's beliefs showing an enhanced tendency in children to think rationally in both Groups A and B compared to control Group, with no differences between the two treatment groups, that is regardless if teacher training was performed or not. Considering the pre to post change magnitude for each group, Group B, in which only children received the training, showed a larger effect size than Group A, in which both children and teachers received the training. The lack of measures related to cultural and individual factors that could influence the pre-training differences observed between Groups, does not allow us to discuss this result in the best way. Our future objectives concern a more accurate assessment of the impact of teachers' training on children's beliefs and behaviours too.

Self-efficacy measured in teachers was positively affected only in the group were teachers underwent training. This confirms that teachers who receive a specific REBT-based training experience higher self-efficacy in managing problematic situations. Enhancing teacher self-efficacy could impact on stress and burnout reduction, in line with Jerald (2007), and this could have a positive impact on students' education and promote classroom well-being, in line with Warren (2010, 2013).

Our study provides further confirmation that REE should be integrated in the classroom curriculum (Knaus 1977a, b, 2004; Knaus and Haberstroh 1993). Curricular REE training would improve child's thinking, emotional and behavioral skills, and would be useful for managing the classroom environment in order to facilitate the teaching/learning process (Adomeh 2006). This affirmation stems from the consideration that the learning process does not occur in an emotional vacuum but is directly affected by the emotional context in which the children live (Di Pietro et al. 1999). It would be desirable that the school system adopt this kind of

education, because improving a rational way of thinking could reduce aggressive behaviors, improve self esteem, prevent emotive disorders and reduce social anxiety, in line with the considerations by Gonzalez et al. (2004).

The main limitation of our study is related to the lack of *normative* reliability and validity data of the C.S.R.B. Another limitation of the study is that we used measures of irrational beliefs for the children but not measures of emotional distress or behavioral problems. An REBT intervention changes irrational beliefs, but it also changes emotional disturbance and disruptive behaviors (Ellis 1962, 1994; Walen et al. 1992; David et al. 2005). Future research could focus on using measures of academic achievement and teacher ratings of behavior, because a REE training is considered effective if it leads to a decrease of problematic behaviors too. It would also be interesting to repeat the experience with older children and adolescents.

Other limitations were the teacher sample size, which should be larger in future studies, and to the lack of a scale assessing teacher's rational/irrational beliefs, even if this was a target of the intervention. Further studies are required to evaluate the role of such training in promoting teachers' wellbeing, involving a larger sample and different pre- and post- training measures.

Acknowledgements We thank Peter A. Mattei, MD, PhD, and Alicia Cervantes for assistance with English proofreading.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

References

- Adomeh, I. O. C. (2006). Fostering emotional adjustment among Nigerian adolescents with rational emotive behaviour therapy. *Educational Research Quarterly*, 29, 21–29.
- Antoniou, A. S., Polychroni, F., & Walters, B. (2000). Sources of stress and professional burnout of teachers of special educational needs in Greece. *Paper presented at the International Special Education Congress*, University of Manchester 24–28 July 2000. Retrieved March 09, 2007
- Bermejo-Toro, L., & Prieto-Ursúa, M. (2006). Teachers' irrational beliefs and their relationship to distress in the profession. *Psychology in Spain*, 10(1), 88–96.
- Bernard, M. E. (2004). Emotional resilience in children: Implications for rational emotive education. *Romanian Journal of Cognitive and Behavioral Psychotherapies*, 4, 39–52.
- Bernard, M. E. (2008). Albert Ellis and the world of children. Presented at the 43rd annual conference of the Australian Psychological Society, Hobart, Tasmania.
- Bernard, M. E., & DiGiuseppe, R. (1994). *Rational-emotive consultation in applied settings*. Hillsdale, NJ: Erlbaum.
- Bernard, M. E., & Joyce, M. R. (1984). *Rational-emotive therapy with children and adolescents: Theory, treatment strategies, preventative methods*. New York: Wiley.
- Blenkiron, P. (2011). *Stories and analogies in cognitive behaviour therapy*. New York: Wiley.
- Brody, M. (1974). *The effects of rational-emotive affective education on anxiety, self-esteem, and frustration tolerance*. Unpublished doctoral dissertation, Temple University, Philadelphia.
- Calvete, E., & Cardenoso, O. (2005). Gender differences in cognitive vulnerability to depression and behavior problems in adolescents. *Journal of Abnormal Child Psychology*, 33(2), 179–192.
- Calvete, Z. E., & Villa, S. A. (1999). Estrés y burnout docente: influencia de variables cognitivas. *Revista de Educación. Madrid*, 319, 291–303.

- Capel, S. A. (1992). Stress and burnout in teachers. *European Journal of Teacher Education, 15*, 197–211.
- Caprara, G. V. (2001). *La valutazione dell'autoefficacia. Costrutti e strumenti*. Trento: Edizioni Erickson.
- David, D., Szentagotai, A., Eva, K., & Macavei, B. (2005). A synopsis of rational-emotive behavior therapy (REBT); fundamental and applied research. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 23*(3), 175–221.
- DeVoge, C. (1974). A behavioral approach to RET with children. *Rational Living, 9*, 23–26.
- Di Pietro, M. (1992). *L'educazione razionale-emotiva. per la prevenzione e il superamento del disagio psicologico*. Trento: Edizioni Erickson.
- Di Pietro, M., Morosini, P., & Agostini, G. (1999). L'Educazione Razionale-Emotiva nella scuola: uno studio controllato. *Difficoltà di apprendimento, 5*, 107–118.
- Diekstra, R. F. W. (2008). Effectiveness of school-based social and emotional education programmes worldwide. *Social and emotional education: An international analysis* (pp. 255–312). Santander: Fundacion Marcelino Botin.
- DiGiuseppe, R. (1975). The use of behavioral modification to establish rational self-statements in children. *Rational Living, 10*, 18–20.
- DiGiuseppe, R., & Bernard, M. (1990). The application of rational-emotive theory and therapy to school-aged children. *School Psychology Review, 19*, 268–286.
- DiGiuseppe, R., & Bernard, M. E. (2006). REBT assessment and treatment with children. In A. Ellis & M. E. Bernard (Eds.), *Rational emotive behavioral approaches to childhood disorders* (pp. 85–114). Berlin: Springer.
- DiGiuseppe, R., & Kassino, H. (1976). Effects of a rational-emotive school mental health program on children's emotional adjustment. *Journal of Community Psychology, 4*, 382–387.
- Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., et al. (1997). *Promoting social and emotional learning: Guidelines for educators*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Ellis, A. (1962). *Reason and emotion in psychotherapy*. New York: Stuart.
- Ellis, A. (1972a). Emotional education in the classroom: The living school. *Journal of Child Psychology, 1*, 19–22.
- Ellis, A. (1972b). *The abc's of rational-emotive therapy*. New York: Institute for Rational Living.
- Ellis, A. (1994). *Reason and emotion in psychotherapy, revised and updated*. Secaucus, NJ: Carol.
- Ellis, A., & Bernard, M. E. (2006). *Rational emotive behavioral approaches to childhood disorders*. New York: Springer US.
- Glickman, M. D. (1968). Rational counseling: A dynamic approach to children. *Elementary School Guidance and Counseling, 2*, 261–267.
- Gonzalez, J. E., Nelson, J. R., Gutkin, T. B., Saunders, A., Galloway, A., & Shwery, C. S. (2004). Rational emotive therapy with children and adolescents a meta-analysis. *Journal of Emotional and Behavioral Disorders, 12*, 222–235.
- Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., et al. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58*, 466–474.
- Hajzler, D. J., & Bernard, M. E. (1991). A review of rational-emotive education outcome studies. *School Psychology Quarterly, 6*, 27–49.
- Jerald, C. D. (2007). *Believing and achieving (issue brief)*. Washington, DC: Center for Comprehensive School Reform and Improvement.
- Katz, S. G. (1974). *The effects of cognitive emotional education on locus of control and self concept*. Doctoral dissertation, ProQuest Information & Learning.
- Knaus, W. J. (Ed.). (1974a). Children's survey of rational beliefs. In *A manual for elementary school teachers*. New York: Institute for Rational-Emotive Psychotherapy.
- Knaus, W. J. (1974b). *Rational-emotive education: A manual for elementary school teachers*. New York: Institute for Rational-Emotive Psychotherapy.
- Knaus, W. (1977a). Rational emotive education. *Theory into Practice, 16*, 251–255.
- Knaus, W. J. (1977b). Rational-emotive education. In A. Ellis & R. Greiger (Eds.), *Handbook of rational-emotive therapy*. New York: Springer.
- Knaus, W. J. (2004). Rational emotive education: Trends and directions. *Romanian Journal of Cognitive and Behavioral Psychotherapies, 4*, 9–22.
- Knaus, W., & Bokor, S. (1975). The effect of rational-emotive education lessons on anxiety and self-concept in sixth grade students. *Rational Living, 11*, 25–28.

- Knaus, W. J., & Haberstroh, N. B. (1993). A rational-emotive education program to help disruptive mentally retarded clients develop self-control. In W. Dryden & L. K. Hill (Eds.), *Innovations in rational-emotive therapy*. London: Sage Publications.
- Knaus, W. J., & McKeever, C. (1977). Rational-emotive education with learning disabled children. *Journal of Learning Disabilities, 10*, 10–14.
- Lafferty, J. C., Dennerl, D., & Rettich, P. A. (1964). Creative school mental health programs. *The National Elementary School Principal, 43*, 28–35.
- Lale, C. (2001). Symptoms of teacher stress in UK education, schools, and colleges. Retrieved January 15, 2002, from <http://www.teacherstress.co.uk>.
- Mahfar, M., Aslan, A. S., Noah, S. M., Ahmad, J., & Jaafar, W. M. W. (2014). Effects of rational emotive education module on irrational beliefs and stress among fully residential school students in Malaysia. *Procedia-Social and Behavioral Sciences, 114*, 239–243.
- Meichenbaum, D. (1977). Cognitive behaviour modification. *Cognitive Behaviour Therapy, 6*, 185–192.
- Ndika, N. A., Olagbaiye, F., & Agiobu-Kemmer, I. (2008). Gender differences in irrational beliefs, self-efficacy and self-confidence of some Nigerian adolescents. *Psychology and Education, 45*(1), 24.
- Parker, T. S., & Wampler, K. S. (2006). Changing emotion: The use of therapeutic storytelling. *Journal of Marital and Family Therapy, 32*(2), 155–166.
- Payton, J., Weissberg, R. P., Durlak, J. A., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B., & Pachan, M. (2008). The positive impact of social and emotional learning for kindergarten to eighth-grade students: Findings from three scientific reviews. Technical report. *Collaborative for Academic, Social, and Emotional Learning (NJ1)*.
- Pomerantz, K. A. (2006). Helping children explore their emotional and social worlds through therapeutic stories. *Educational and Child Psychology, 24*(1), 46.
- Rosenbaum, T., McMurray, N. E., & Campbell, I. M. (1991). The effects of rational emotive education on locus of control, rationality and anxiety in primary school children. *Australian Journal of Education, 35*, 187–200.
- Rudow, B. (1999). Stress and burnout in the teaching profession: European studies, issues, and research perspectives. In A. M. Huberman (Ed.), *Understanding and preventing teacher burnout: A sourcebook of international research and practice* (pp. 38–58). New York: Cambridge University Press.
- Skaalvik, E. M., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology, 99*(3), 611.
- Skaalvik, E. M., & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education, 26*, 1059–1069.
- Trip, S., Vernon, A., & McMahon, J. (2007). Effectiveness of rational-emotive education: A quantitative meta-analytical study. *Journal of Cognitive & Behavioral Psychotherapies, 7*(1):81–93.
- Verità, R. (2000). *Con la testa tra le favole*. Trento: Edizioni Erickson.
- Verità, R., & De Marzi, S. (2006). *Pensieri favolosi. Come trasformare le emozioni negative in emozioni positive*. Trento: Edizioni Erickson.
- Walen, S. R., DiGiuseppe, R., & Dryden, W. (1992). *A practitioner's guide to rational-emotive therapy* (2nd ed.). New York, NY: Oxford University Press.
- Warren, J. M. (2010). The impact of rational emotive behavior therapy on teacher efficacy and student achievement. *Journal of School Counseling, 8*(11). <https://eric.ed.gov/?id=EJ885064>
- Warren, J. M. (2013). School counselor consultation: Teachers' experiences with rational emotive behavior therapy. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 31*, 1–15.
- Warren, J. M., & Dowden, A. R. (2012). Elementary school teachers' beliefs and emotions: Implications for school counselors and counselor educators. *Journal of School Counseling, 10*(19). <https://eric.ed.gov/?id=EJ981200>.
- Warren, J. M., & Gerler, E. R. (2013). Effects of cognitive behavioral consultation on irrational and efficacy beliefs of elementary school teachers. *The Professional Counselor, 3*, 6–15.
- Watter, N. D. (1988). Rational-emotive education: A review of the literature. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 6*, 139–145.
- Weissberg, R. P., Kumpfer, K., & Seligman, M. E. P. (2003). Prevention that works for children and youth: An introduction. *American Psychologist, 58*, 425–432.
- Wilson, D. B., Gottfredson, D. C., & Najaka, S. S. (2001). School-based prevention of problem behaviors: A meta-analysis. *Journal of Quantitative Criminology, 17*, 247–272.

- Zins, J. E., & Elias, M. J. (2006). Social and emotional learning. In G. G. Bear & K. M. Minke (Eds.), *Children's needs III: Development, prevention, and intervention* (pp. 1–13). Bethesda, MD: National Association of School Psychologists.
- Zins, J. E., Weissberg, R. P., Wang, M. C., & Walberg, H. J. (Eds.). (2004). *Building academic success on social and emotional learning: What does the research say?*. New York: Teachers College Press.