Psicologia: Teoria e Pesquisa
2022, v.38, e38317

DOI: https://doi.org/10.1590/0102.3772e38317.en

School and Developmental Psychology

Teaching Effectiveness and Children Emotional/Behavioral Difficulties: Outcomes from FAVA Program

Débora Cristina Fava[1,2,*], Ilana Andretta[1], & Angela Helena Marin[3]

[1]*Universidade do Vale do Rio dos Sinos, São Leopoldo, RS, Brazil*
[2]*Instituto VilaELO Cursos em Saúde Mental, Porto Alegre, RS, Brazil*
[3]*Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil*

ABSTRACT – Through a quasi-experimental design, the results of FAcilitando o conVívio com Alunos – FAVA´s program for elementary school teachers, were evaluated, aiming at promoting teaching effectiveness and reducing child behavior problems, as measured by Teacher's Effectiveness Beliefs Scale and Strengths and Difficulties Questionnaire, respectively. The FAVA contemplated psychoeducation about cognitive model, socioemotional development and behavior modification. The comparison between experimental groups (GE1 that received complete intervention and GE2 that did not have the cognitive model) and comparison group showed the promotion of teaching staff effectiveness (GE2) and the reduction in the perception of child behavioral difficulties (GE1). The contribution of the cognitive model and socioemotional learning in interventions with teachers is emphasized.

KEYWORDS: psychological intervention, teacher efficiency, cognitive behavioral therapy

Eficácia Docente e Dificuldades Emocionais/Comportamentais Infantis: Resultados do Programa FAVA

RESUMO – Este estudo quase-experimental avaliou os resultados do programa FAcilitando o conVívio com Alunos – FAVA, destinado a professores do ensino fundamental I, visando a promoção da eficácia docente e a redução de problemas emocionais/comportamentais infantis, aferidos pela Escala de Avaliação das Crenças de Eficácia do Professor e pelo Questionário de Capacidades e Dificuldades, respectivamente. O FAVA contemplou a psicoeducação sobre o modelo cognitivo, o desenvolvimento socioemocional e a modificação de comportamentos. Comparação entre os grupos experimentais (GE1, que recebeu intervenção completa, e GE2, sem o modelo cognitivo) e o grupo de comparação evidenciou a promoção da eficácia pessoal docente (GE2) e a redução da percepção das dificuldades emocionais/comportamentais infantis (GE1). Ressalta-se a contribuição do modelo cognitivo e da aprendizagem socioemocional em intervenções com professores.

PALAVRAS-CHAVE: intervenção psicológica, eficiência do professor, terapia cognitivo-comportamental

The prevalence of child behavioral problems is high and several studies have sought to develop and evaluate the results of interventions that aim to improve strategies to prevent and mitigate them in the school environment (Paulus, Ohmann, & Popow, 2016). In Brazil, up to 30% of youngsters attending school report problems that may harm their development (Lopes et al., 2016). Aggressiveness and difficulties with attention and emotional management over the first school years may negatively affect learning and add to the maintenance of these symptoms over the following years, increasing the damage in the long term (Marin, Borba, & Bolsoni-Silva, 2018; Santos & Celeri, 2018, Moksnes et al., 2016).

There are indications that teachers who report self-efficacy beliefs and are more likely to demonstrate positive attitudes about teaching as a profession are able to maintain

* E-mail: deborafava@gmail.com
Submetido: 28/12/2020; Aceito: 16/06/2021.

discipline, better dealing with day-to-day classroom challenges, such as the manifestation of emotional and behavioral problems (Guo et al., 2011; Zee & Koomen, 2016; Zee et al., 2017). Therefore, teachers who manage their class are found to have higher levels of personal efficacy (Reinke et al., 2013), which consists of the belief of having the ability to successfully perform a specific task (Bandura, 1997), in this case, teaching. Bandura (1997) already indicated that low teaching efficacy is usually associated with lower quality relationships with students, which, in turn, accentuates job stress and children's emotional and behavioral problems. Thus, it is understood that the lack of confidence can interfere with a teacher's ability to be effective in meeting the emotional and behavioral needs of their students (Herman et al., 2018; Wu et al., 2019).

Many of the interventions focused on teachers approach contents based on the behavioral models, concentrating on the adequate use of the management of contingencies and positive reinforcement in the classroom, as well as guidance on properly applying penalties and strategies such as redirection, visual clues and effective commands (Chow & Gilmour, 2016). Over the last decades, social-emotional learning has also come to base such interventions, aiming at the development of life skills, such as empathy and problem solving (Chuang, Reinke, & Herman, 2020). Even though the management of emotions is also one of the skills contemplated in social-emotional learning, cognition is not emphasized.

In this regard, the cognitive-behavioral approach (ACC), that focuses on the monitoring and modification of thoughts for the promotion of emotional and behavioral regulation, may establish this link between social-emotional and behavioral approaches. Although ACC has based recent interventions implemented in schools, these concern the development of rage regulation programs, problem solving or social skills practice (Marin & Fava, 2020). It still has not been found in scientific literature a proposal that contemplates a central technique of ACC outside the clinical setting: psychoeducation on the cognitive model. Because it is a basic technique, it may be easily transposable into other contexts, such as the school one. This approach has as its basis that thoughts influence emotions and behaviors, therefore, when they are monitored, it is possible to alter the emotional and behavioral state, depending on how information is processed (Beck, Davis, & Freeman, 2015; Ozdel et al., 2014). This understanding comprises the cognitive model and it may help teachers establish less distorted interpretations and thoughts, allowing them to be more assertive in their behavior towards the students and contribute to the promotion of their social-emotional development.

Teachers who act better with the kids and who have a better classroom management usually have better levels of personal self-efficacy. That way, teachers with a good perception of their self-efficacy may enjoy their knowledge and skills in proficient conducts oriented towards a goal, such as handling the behavior of disruptive students in the classroom, while those who do not have such beliefs probably could not do the same (Klassen & Tze, 2014; Zee & Koomen, 2016).

In this sense, self-efficacy is one of the key factors in human activity (Bandura, 1997). The individuals who believe to have the power to fulfill their desires are more prone to act based on such beliefs. In addition, literature suggests the teachers who report greater beliefs in self- efficacy and are more prone to showing positive attitudes towards teaching as a profession, keeping discipline and positive practices and dealing with the daily challenges in the classroom (Gu, Sawyer, & Tompkins, 2011; Rimm- Kaufman & Sawyer, 2004). That way, it is understood that the perception of self-efficacy in teachers is an important predictive of motivation, behavior and action (Zee, de Jong, & Koomen, 2017).

There is a vast number of universal interventions in schools that are based on behavioral, cognitive-behavioral approaches (not focused on teaching the contents of the cognitive model for teachers) and those based on the social-emotional learning (Paulus, Ohmann, & Popow, 2016). The programs usually include programs or manuals oriented to students, which are ministered by teachers after receiving a brief training from the researchers, for example, PATHS: *Promoting Alternative Thinking Strategies* (Kusche & Greenberg, 1994); *Second Step* (Frey, Hirschstein, & Guzzo, 2000); *First Step to Success* (Walker, Kavanagh, Stiller, Golly, Severson, & Feil, 1997); and *Anger Coping Program* (Lochman, FitzGerald, & Whidby, 1999), that are programs in which the teachers use manuals and apply them onto the students to reduce behavior problems (Luizzi & de Rose, 2010). In addition to the need of efficacy evidence in the Brazilian population, they may configure as one more task that requires time destined to the application with the teacher amidst so many demands of this profession. Besides, it may be difficult to transfer such intervention proposals into other cultures because they might not meet the specific needs of the participants (Paulus et al., 2016).

In view of this, it was developed the program named FAcilitando o conVívio com Alunos (FAVA), which consists of an intervention proposal of transtheoretical nature, based on social-emotional learning (CASEL, 2017; Delahooke, 2019) and on ACC, including the behavior modification principles through positive practices of interaction (Barkley, 2013, Sugai, 1999). Despite the clinical models for behavioral modification and promotion of emotional and behavioral health involving the parents, adaptations for the school context have proven to be effective, even with some necessary care being highlighted, such as the efforts to count on an experienced coordinator to train the school team and to promote effective practices in coexisting with the students (LaForett et al., 2019), which was aimed at with FAVA.

The program has an innovative nature because it comprises one of the fundamental modules of clinical practice based on evidence which is psychoeducation on the cognitive model (Sparafino, 2020). In addition, it aims to instrument the teacher without overburdening them with the application of manuals along with their students, betting that personal tools for better interaction and student management may be enough in order to obtain the improvement of the children's behavior in the classroom.

The general goal of this study was to evaluate, through a quasi-experimental outlining with a control group (Silveira & Córdova, 2002), the results of a transtheoretical program, applied into two modalities to evaluate the impact of the content on the cognitive model, which aimed at the promotion of the teacher efficacy and the prevention of child behavioral problems, addressed to teachers of the 1st through the 3rd years of elementary school of the municipal public schools of a town from the countryside of Rio Grande do Sul. Specifically, it was examined the efficacy of the intervention as regards the beliefs of teacher efficacy and the behavioral problems of the students perceived by the teachers. It was hypothesized that the participants who received the module containing psychoeducation on the cognitive model would have the better results as for the outcomes after the intervention.

METHOD

Design and Participants

A quasi-experimental design was adopted, with a comparison group (Silveira & Córdova, 2002). The participants were teachers from the first through the third years of Elementary School of the municipal system of a city from the countryside of Rio Grande do Sul, which was facilitated by the Municipal Department of Education (SMED) through email and internal memorandum. Participation was not mandatory and the department authorized the justified absence for those who were interested. Out of the total of 452 professors, 215 (47.6%) agreed to participate in the study.

So that the schools (N = 34) did not have several teachers off at the same time, a random allocation was performed considering the number of groups per school grade. Thus, GE1 was constituted of 101 teachers, GE2 of 56 and GC of 58. However, there was a sample loss and the loss of each group was reduced to 35 (1st year: n = 15; 2nd year: n = 7; 3rd year: n = 13), 9 (1st year: n = 3; 2nd year: n = 2; 3rd year: n = 4) and 10 (1st year: n = 5; 2nd year: n = 3; 3rd year: n = 2) participants, respectively. No differences between the groups were found with regards to the distribution of teachers by school grades ($p = 0.81$, Fisher's exact test).

The three groups also showed to be homogeneous (Fisher's exact test) with regards to the other social-demographic variables, such as marital status ($p = 0.15$) and the presence of children ($p = 0.91$), as well as the occupational ones, for example, schooling ($p = 0.39$) and the number of schools where they work ($p = 0.15$). it was identified only one meaningful difference as for the formation years of the teachers ($p = 0.01$), once 59.4% (n = 22) of GE1 had a formation period higher than 10 years, while 75.0% (n = 6) of GC had a formation period of up to 10 years. Among the experimental groups GE1 and GE2, there was no difference as to the formation period.

Instruments

Questionnaire of Social-demographic and Occupational Data for Teachers

Developed for this study aiming at the attainment of information on social demographic and occupational characteristics of the teachers, such as family configuration, formation and work time.

Self-Reporting Questionnaire – 20 (SRQ – 20; Harding et al., 1980)

Questionnaire of identification of non-psychotic psychiatric disorder at the primary attention level, adequate for the study of non-clinical populations, including teachers, presenting a reliability of 0.74 (Santos, Carvalho, & Araújo, 2016). It is a self-applicable instrument containing 20 items distributed into subscales. The questions are answered considering "yes" or "no" and each affirmative answer counts for one point. The ideal cutoff point is 7/8 regardless of the gender of the study subject. The subscales are comprised of items and divided into four: anxious-depressive symptoms ($a = 0.60$), decrease of energy ($a = 0.75$), somatic symptoms ($a = 0.44$), and depressive thoughts ($a = 0.62$). the goal of using these instruments was to assess if the mental suffering of the teacher influenced the results as an intervenient variable.

Scale of Assessment of the Beliefs of Teachers' Efficacy (Woolfolk & Hoy, 1990)

Instrument validated for a Brazilian sample of teachers of the early years by Bzuneck and Guimarães (2003). It is comprised of 20 items to be answered on a six-point Likert-type scale (total disagreement to complete agreement). Among these, 12 are referred to the most interesting construct for

this study, personal efficacy, degree to which they believe to be able to answer to the demands of the teaching situation, such as the student's engagement and behavior (α = 0.73), and eight to the teaching efficacy, belief that the teachers, in general, are capable of effectively meeting the demands for students learning, also comprising the belief of the teacher on their students' intelligence (α = 0.70). It is considered the mean obtained among the items corresponding to each factor, three (3) being the cutoff point. For this study, the scales presented good reliability indices, being 0.89 for personal efficacy and 0.78 for teaching efficacy.

Strengths and Difficulties Questionnaire – SDQ

Instrument with a version for application on teachers (Goodman, 1997) validated for Brazil (Fleitlich, Cartázar, & Goodman, 2000), which traces child health problems in five areas: prosocial behavior, hyperactivity, emotional, conduct and relationship problems. The sum of each scale and the total sum that refers to the total of difficulties (α = 0.80). In this study, the reliability indices varied from 0.61 to 0.78, considered satisfactory (Streiner, 2003). The data shall be analyzed considering only the total of difficulties.

FAcilitando o conVívio com Alunos – FAVA´s program

The program consists of an intervention proposal based on social-emotional learning (CASEL, 2017; Delahooke, 2019) and ACC, including the principles of behavior modification through positive interaction practices (Barkley, 2013; Sugai, 2000). Table 1 presents the description of the contents included in the intervention in each module, as well as its objectives.

The intervention was developed from three distinct groups: Experimental Group 1 (GE1), which received the complete intervention, with four meetings that lasted three and a half hours, contemplating the contents referring to modules 1 through 4; Experimental Group 2, which received the partial intervention , with two meetings of four hours and the contents referring to modules 2, 3 and 4; and Control Group, which received the complete intervention only after the finalization of the process with the previous groups.

The content of the program for the three groups was always conducted by the same coordinator, developer of the program, using the exploitation of practical examples to illustrate the theory, including the discussion of situations presented by the teachers. She is a psychologist specialized in clinical psychology by the Federal Council of Psychology and in Cognitive-behavioral Psychotherapy, besides being a certified psychologist by the Brazilian Federation of Cognitive Therapies, with more than 12 years of practice with this approach, both in the clinic and in school contexts.

Data Collection Procedures

The study had the support of the Municipal Department of Education (SMED) of the town where the intervention occurred, the second most populated and with the highest number of municipal schools in the state. The SMED had received several requests of teachers on how to deal with the behavioral difficulties of the students in the classroom and the FAVA program met this demand.

The teachers received the instruments before the intervention was performed to be answered and returned after being filled in on the first scheduled day, which took place on the first trimester of the school year for GE1 and GE2. The post-test of the three groups was collected four months after the intervention, when the teachers once more answered the instruments that were sent to the schools through the SMED, where they were collected by the researchers. The GC remained in the condition of waiting list and received the intervention with the entire content in the end of the school year.

The intervention was carried out on site during the work shift of the teacher. The meetings lasted a total of three hours and 30 minutes in addition to a 10-minute intermission as a break, during which it was offered coffee. The SMED provided an auditorium, a place the teachers were already used to attend. The participants were given a presence certificate at the end of each meeting to be presented at the workplace so that they would not suffer a salary loss due to the absence, which was also justified.

Ethical Procedures

This study is part of a bigger research project which was approved by the Ethics in Research Committee, being in accord with Resolution 510/16 of the National Health Council, which regulates the research with human beings (CAAE: 09173319.2.0000.5344). The participants were given the Informed Consent Form and the contact information of the researchers in order to solve any doubts or discomfort. Every teacher was aware that their absence from work was justified, without salary loss and their students would be assisted by substitute teachers.

Data Analysis Procedures

The data analysis was performed through descriptive statistics (absolute and relative frequencies for categorical variables; central tendency and variability measures, for quantitative varieties) with symmetry study by the Shappiro Wilk test. The characteristics of both experimental groups were compared by Fisher's exact test (Monte Carlo simulation). When the comparison was made among the three independent groups, the Analysis of Variance (*One Way*) tests or the Kruskal Wallys test were applied.

Considering GE1 received a total of 14 hours of content and GE2 received half that amount of time, an analysis was carried out in order to verify if the intervention time may act as an intervenient analysis. That is why the information referring to the outcome variables: personal efficacy, teaching

Table 1
Description of Contents by Meeting

Module	Content	Objectives
1 Behavioral-cognitive Model + one overview video and text material with overview	• How does our mind work? • Why do we think the way we do? • How is the thinking pattern built? • ACC principles: o Thinking is susceptible to be monitored. o Thinking is susceptible to be altered. o Modifying thinking, it is possible to alter behavior. • Self-monitoring applied to the school context. • Cognitive distortions within the teacher's context. • Modification of the cognitive distortions.	• Understand cognitive functioning to practice self-monitoring. • Avoid misjudgments and non-assertive practices of interaction with children. • Help children identify dysfunctional automatic thoughts. • Promote feeling of understanding and acceptance in children. • Prevent dysfunctional behaviors in the school environment. • Promote assertive behaviors among children.
2 Social-emotional development and social-emotional education	• What social-emotional development is. • What the social-emotional skills/competencies are. • How the social-emotional skills are acquired. • The relation of the social-emotional skills with child development and behavior. • Helping children identify and manage emotions. • Self-conscience and emotional regulation.	• Understand what social-emotional skills are and how they are acquired. • Understand the purpose and importance of social and emotional skills. • Help children better develop their social and emotional skills. • Help children identify and manage negative feelings. • Prevent and decrease behavioral problems caused by a child's poor social-emotional management. • Promote functional behaviors. • Encourage discipline.
3 Interaction styles between teacher and student and active observation of child behavior + two overview videos and text material with overview	• What are the interaction styles between adults and children? • What are the consequences of the interaction styles in child behavior? • Support and validation of emotion in students. • Definition of child behavior problems and expected behavior according to the age range. • Active observation. • Principles of functional analysis of behavior applied to the school context. • Maintenance of the behavioral problem. • Principles of functioning conditioning (behavioral modification).	• Identify interaction styles. • Modify dysfunctional interaction styles. • Promote feelings of understanding and acceptance in children. • Help children better develop their social-emotional skills. • Correctly identify the signs that precede behavior. • Understand the causality between one behavior and another. • Prevent dysfunctional behavior in the environment. • Promote assertive behaviors among children.
4 Dysfunctional behavior management and promotion of functional and assertive behaviors + one overview video and text material with overview	• Types of consequences for dysfunctional behavior in the classroom. • Social reinforcement in the school context. • Social conflicts resolution. • Promoting understanding and empathic and prosocial conducts among children (direct interventions and class assemblies). • Classroom routine. • Use of visual clues. • Distraction as a disruptive behavior modification technique. • Dealing with children who present aggressive behavior. • System of group points for behavior modification and incentive to good behavior.	• Assertively manage children's behaviors. • Decrease the chances of the same dysfunctional behavior recurring. • Prevent the emergence of challenging behaviors. • Avoid coercive and abusive practices. • Help children to not react badly to social conflict. • Develop a healthy pattern of behavior and relationships with peers and adults. • Develop discipline. • Learn to build and implement a point system appropriate to the need of each group.

efficacy and Total of difficulties perceived in the students. To assess the impact observed in the continued measures at the end of the study (post-intervention), it was calculated the size of the effect *(effect size)* by adopting the following classification criterion: <0.19 = insignificant effect; 0.20-0.49 small effect; 0.50-0.79 = medium effect; 0.80-1.29 = big effect and >1.30 = very big effect (Cohen, 1998).

In order to examine the effective difference between the groups with regard to the outcome it was used the ANOVA for Repeated Measures (Two Way) with study of the assumptions of sphericity through the testes MBox and Mauchly. When the assumption of sphericity was not met, correction was made trough Epsilon of Greenhouse-Geisser. In the situations where ANOVA detected statistically meaningful effects, the multiple comparison of the means for the main effects was made through Bonferroni correction. The data were analyzed in the program Statistical Package for Social Sciences version 25.0 (SPSS Inc., Chicago, IL, USA, 2018) for Windows,

being that, for statistics decision criteria, it was used the significance level of 5%.

The absence of information detected in some variables was treated as disposal, both for descriptive and differential analysis. In this scenery, the missing data of each variable were treated with any other answer category, being the case(s) with missing eliminated from analysis (Little & Rubin, 1987). It was not possible to perform the data imputation because, in some situations, the number of missing data was very expressive, which could distort the statistical analysis (Barroso, 1995).

RESULTS

With respect to the mental health of the teachers, which was a control for possible intervenient variables, there was no difference among groups (p = 0.99), as well as for how to read or take other courses after the intervention (p = 0.99), and having suffered any stress over the last six months (p = 0.99, Fisher's exact test).

As it may be observed on table 2, it was verified that, as for personal efficacy, when it was investigated the effect of time interaction (F= 4.69. p = 0.035; Power = 0.76), there was a significant increase of the mean at the end of the intervention in GE2, while in groups GE1 and GC, the differences between the average scores, pre- and post- intervention, did not show to be representative. As for the estimates of effect size, in GE1 (d = 0.030), the effect was inexpressive, in GC (d = 0.260) it reached a low magnitude, while in GE2 (d = 0.720), it was identified a medium effect magnitude.

As for the total of difficulties of the students perceived by the teachers, variations in the averages among the pre- and post-test evaluations among the three groups were identified (F = 4.86; p = 0.02), presenting a power value equal to 0.72, which is relevant, despite the samples being small (Espírito-Santo & Daniel, 2015). In GE1 there was a significant reduction in the mean related to the total of difficulties in the post-intervention evaluation (pre-: 19.8+5.6 vs. post-: 17.4+7.5; p = 0.02), with size of effect of a smaller magnitude (d = 0.37). In GC it was identified an increase of such mean (pre-: 8.3+3.2 vs. post-: 14.7+1.5; p = 0.05), with a very large magnitude effect (d = 2.72), which signals that the absence of intervention impacted negatively, there being a worsen in child behavior. In GE2, the variations of this measure were inexpressive (pre-: 16.2+6.1 vs. post-:16.7+6.0; p = 0.74) and the effect was insignificant (d = 0.08).

Table 2
Teachers' Self-efficacy and Students' Behaviors Pre- and Post-intervention

Variables	Groups						*p*	ANOVA MR €	
	GE1 (n=37)		GE2 (n=9)		GC (n=10)			Interaction	
	Average	SD	Average	SD	Average	SD		*p*	Power
Personal Efficacy									
Teacher Pre-test	46.6	8.3	43.8	7.7	49.3	12.2	0.41[b]	0.03*	0.75
Teacher Post-test	46.4	7.2	49.3	7.6	46.8	7.2	0.60[b]		
p A	0.86	0.08	0.41						
d Cohen [B]	0.03	0.72	0.26						
Teaching Efficacy									
Teacher Pre-test	26.9	7.3	30.4	6.7	26.6	6.0	0.23[c]	0.51	0.04
Teacher Post-test	27.2	9.4	29.3	3.4	27.0	5.8	0.80[c]		
p A	0.84	0.61	0.79						
d Cohen [B]	0.04	0.22	0.07						
d Cohen [B]	0.09	0.70	0.31						
Total difficulties (SDQ)									
Teacher Pre-test	19.8	5.6	16.2	6.1	8.3	3.2	0.001¥	0.02**	0.72
Teacher Post-test	17.4	7.5	16.7	6.1	14.7	1.5	0.90¥		
p[a]	0.02	0.74	0.05						
d Cohen [B]	-0.37	0.082	2.72						

Note. Wilcoxon ₮Test; ¢Variables with asymmetric distribution; B: Size of the D Cohen effect; Ⱥ: Test t-Student for paired data; ¶: Kruskal Wallys Test; ¥: Analysis of Variance (One way) – Post Hoc Tukey; C: Comparisons among groups €: Analysis of Variance for Repeated Measures – Post Hoc Bonferroni. ** Significance in p<0.05 controlled for the covariable intervention time in hours.

DISCUSSION

The overall objective of this study was to evaluate the results of the FAVA program for elementary education I teachers, which aimed to promote teaching effectiveness and reduce children's emotional and behavioral problems. There is evidence that programs grounded on social-emotional learning (CASEL, 2017) and ACC (Reinke et al., 2018) provide opportunities to improve teacher-student interaction and management of classroom behaviors. From the results obtained, it was observed that the integration between both approaches seems to enhance the effectiveness of such interventions.

It was found that the content related to social-emotional learning (GE2) resulted in changes in teachers' personal efficacy, but not in their perception of students' emotional and behavioral problems when compared to the group of teachers who also received the content of the cognitive model (GE1). Considering that social-emotional learning facilitates the recognition and management of emotions, setting and achieving positive goals, demonstrating empathy and establishing and maintaining positive relationships, as well as making responsible decisions (CASEL, 2017; Marin et al., 2017), it has been evidenced that the recognition of these competencies is associated with teachers' belief that they would be able to better deal with day-to-day challenges in the classroom (Guo et al., 2011; Reinke et al., 2013; Zee & Koomen, 2016; Zee et al., 2017).

However, the same did not occur in GE1. One of the plausible explanations is that the emphasis on the cognitive model has provided greater criticality and metacognition, fostered by psychoeducation, which reflected in the decrease of personal effectiveness of the teachers. One of the basic premises of ACC is to empower the individual to question their interpretations. In this sense, the questioning that GE1 teachers were able to do after participating in psychoeducation about their own cognitive activity may have generated a more self-critical pattern. This phenomenon favors the Dunning-Kruger effect, which assumes that higher performers, in this case teachers who used more assertive practices, promoting improvement in student behavior, would make more accurate and less overestimated self-assessments than those who do not perform as well (McIntosh et al., 2019). Similar phenomena occurred in another study in which teachers who participated in a longer version of the intervention had a lower sense of self-efficacy soon after its completion (Von Suchodoletz et al., 2018). There was no other personal teacher factor that could explain the changes in self-efficacy levels other than perceived student behavior in the classroom. In contrast, the authors signaled that both groups had an increase in mean self-efficacy over time and stressed the importance of continuing education for the professional class.

Regarding the changes observed regarding the perception of children's emotional and behavioral problems in GE1, it is known that the ability to help children manage emotions and solve problems depends on the adult's ability to regulate their own emotions, since these influence their behaviors (Hajal & Paley, 2020; Wenzel, 2018). Transposing the concept from the cognitive-behavioral clinic to school, teacher self-monitoring is critical to the proper interpretation of student behaviors and the consequent emotional validation.

Emotional validation involves communicating that the individual's behaviors, emotions, or thoughts should be understandable in the current context (Papa & Epstein, 2018). It is important to emphasize that validating does not mean agreeing. For example, a student may be aggressive with another classmate in class due to a peer disagreement. This behavior makes sense and is understood in the current context, where being aggressive is the only strategy they know to deal with the emotion of anger. The essence of emotional validation is that the teacher must accept and communicate acceptance to the student, acknowledging and reflecting the inherent validity of that response to certain events (Haslip et al., 2020). However, it does not mean that the teacher is approving of the aggressive behavior. It was in this sense that the teacher's cognitive model was worked on in GE1. The proposal was to psychoeducate the teacher about their thoughts and their relationship with their practices toward their students, which seems to have provided a less distorted reading of children's emotional and behavioral difficulties, favoring the use of emotional validation. There is evidence in literature that strategies such as emotional validation, offering choices, and showing love are able to redirect children's difficulties into more functional behaviors, improve peer conflict resolution and teacher-student relationships (Jager & Macedo, 2018; Haslip et al., 2020).

The CG, in turn, showed a tendency toward decreased personal efficacy after the intervention, as well as a perception of increased emotional and behavioral difficulties in the students. It is noteworthy that compared to GE1, the CG teachers had less training time, which leads us to believe that they may be facing greater difficulties in managing the children's behavior. This is because there is data that signals lower personal efficacy among teachers with less experience (MA & Kavanagh, 2018).

There is an effort by Division 16 of the American Psychological Association to promote guidelines that assist researchers and school psychologists in developing evidence-based practices in educational settings (Kratochwill & Stoiber, 2002). This includes looking for practices already consolidated in settings such as the clinic, applying and evaluating them in studies that address other contexts, such as the school (Atkins et al., 2015; Shernoff et al., 2017). The present study aligns with this indication, and the FAVA program demonstrated good results in promoting teacher

personal efficacy as well as reducing perceived difficulties related to child behavior in the classroom.

However, it should be noted that participation in interventions can affect respondents' reporting, encouraging response change as a biasing factor in survey results (Lievens et al., 2007). For example, the fact that teachers participated in the FAVA program may have stimulated their awareness of their students' difficulties, which was reflected in their greater perception of their emotional and behavioral problems, even after they participated in the intervention that aimed to reduce them (Murray et al., 2019). Considering this issue, it is believed that the effect size and significance value obtained could have been greater in the experimental groups.

In any case, it is fundamental to advance research that contemplates interventions aimed at addressing the problem of the high prevalence of emotional and behavioral problems in schoolchildren and the difficulty teachers have in dealing with them. In this sense, it is suggested that new studies consider the development and evaluation of interventions that associate social-emotional learning (CASEL, 2017; Delahooke, 2019) and ACC, especially the cognitive model, as well as the FAVA program, in view of its results. It is also suggested to use materials that measure automatic thoughts, because it has been observed that functional modification of teachers' distorted thoughts through self-monitoring can be a driver for adherence to contingency management.

As limitations, we highlight some issues regarding the method. First, the use of self-report measures is noteworthy, as they make the data more susceptible to personal biases. Therefore, it is recommended that new studies on the evaluation of interventions consider including observation measures or instruments parallel to self-report to minimize this possible effect. In addition, one must consider the period in which the FAVA program was conducted, which may have influenced the sample size of each group. Although the focus of the intervention was requested by SMED because of teachers' verbalization of difficulties in managing their students' behavior, many dropped out because they were involved in other mandatory training related to curriculum issues. It is likely that the number of participants and the unbalance between the groups influenced the statistical analyses, reducing the power of the tests used. We also highlight the regionality of the sample, which reflects specificities of the teachers and students of the municipal school system in a city in the countryside of the state of Rio Grande do Sul.

Moreover, even though many teachers participated effectively, few of them answered the instruments completely, probably due to fatigue and overload. The literature has already signaled several difficulties regarding sample maintenance in studies involving interventions (Marin et al., 2019). In this sense, it is indicated that new research should contemplate post-intervention engagement strategies to foster adherence until its completion, which may provide greater statistical expression to the data.

As for the FAVA program, it is noteworthy that it sought to address in four and two meetings broad issues that could be worked on in more time, in order to facilitate participation and adherence to the intervention. In other versions, it is suggested to include review and supervision meetings with the teachers, to monitor and fix the learning related to the content taught. It is hoped that, based on this study, more researchers will consider the teacher's cognitive and emotional structure as influencing teaching practices and student behavior, including the contributions of the cognitive model as tools.

REFERENCES

American Psychiatric Association. (2014). DSM-5: Manual diagnóstico e estatístico de transtornos mentais. *Artmed.*

Atkins, M. S., Shernoff, E. S., Frazier, S. L., Schoenwald, S. K., Cappella, E., Marinez-Lora, A., Mehta, T. G., Lakind, D., Cua, G., Bhaumik, R., & Bhaumik, D. (2015). Redesigning community mental health services for urban children: Supporting schooling to promote mental health. *Journal of Consulting and Clinical Psychology,* 83(5), 839-852. https://doi.org/10.1037/a0039661

Bandura, A. (1997). Self-efficacy: The exercise of control. *W.H. Freeman.*

Barkley, R. A. (2013). Defiant children: A clinicians manual for assessment and parent training. *Guilford Press.*

Barroso, L. P. (1995). *Imputação de dados em painéis para populações finitas* [Tese de Doutorado em Estatística, Universidade de São Paulo]. Repositório institucional USP. https://www.teses.usp.br/teses/disponiveis/45/45133/tde-20210728-194559/publico/BarrosoLuciaPereira.pdf

Beck, A. T., Davis, D. D., & Freeman, A. (2015). *Cognitive therapy of personality disorders.* Guilford Publications.

Bzuneck, J. A., & Guimarães, S. E. R. (2003). Crenças de eficácia de professores: Validação da escala de Woolfolk e Hoy. *Psico-USF,* 8(2), 137-143. https://doi.org/10.1590/S1413-82712003000200005

Chow, J. C., & Gilmour, A. F. (2016). Designing and implementing group contingencies in the classroom: A teacher's guide. *TEACHING Exceptional Children,* 48(3), 137-143. https://doi.org/10.1177/0040059918757945

Chuang, C. C., Reinke, W. M., & Herman, K. C. (2020). Effects of a universal classroom management teacher training program on elementary children with aggressive behaviors. *School Psychology, 35(2),* 128-136. https://doi.org/10.1037/spq0000351

Collaborative for Academic, Social, and Emotional Learning. (2017). *Framework for systemic social and emotional learning.* http://www.casel.org/what-is-sel

Delahooke, M. (2019). Beyond behaviors: Using brain science and compassion to understand and solve children's behavioral challenges. *Pesi Publishing e Media.*

Espírito-Santo, H., & Daniel, F. (2015). Calcular e apresentar tamanhos do efeito em trabalhos científicos: As limitações do $p < 0,05$ na análise de diferenças de médias de dois grupos. *Revista Portuguesa de Investigação Comportamental e Social, 1(1)* 3-16. https://doi.org/10.7342/ismt.rpics.2015.L1.14

Fava, D. C. M (n.d.). *Manual de aplicação do programa FAVA* (em elaboração). Artesã.

Fleitlich, B., Cortázar, P. G., & Goodman, R. (2000). Questionário de capacidades e dificuldades (SDQ). *Infanto Revista de Neuropsiquiatria da Infância e Adolescência,* 8(2), 44-50.

Frey, K. S., Hirschstein, M. K., & Guzzo, B. A. (2000). Second step: Preventing aggression by promoting social competence. *Journal of Emotional and Behavioral Disorders,* 8(2), 102-112. https:// doi.org/10.1177/106342660000800206

Goodman, A., Lamping, D.L. & Ploubidis, G.B. (2010). When to use broader internalising and externalising subscales instead of the hypothesised five subscales on the Strengths and Difficulties Questionnaire (SDQ): Data from british parents, teachers and children. *Journal of Abnormal Child Psychology, 38,* 1179-1191. https://doi.org/10.1007/s10802- 010-9434-x

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry,* 38(5), 581-586. https://doi.org/10.1111/j.1469-7610.1997.tb01545.x

Guo, Y., Justice, L. M., Sawyer, B., & Tompkins, V. (2011). Exploring factors related to preschool teachers' self-efficacy. *Teaching and Teacher Education, 27*, 961e968. https://doi.org/10.1016/j.tate.2011.03.008

Hajal, N. J., & Paley, B. (2020). Parental emotion and emotion regulation: A critical target of study for research and intervention to promote child emotion socialization. *Developmental Psychology, 56(3),* 403-417. https://doi.org/10.1037/ dev0000864

Harding, T. W., De Arango, V., Baltazar, J., Climent, C. E., Ibrahim, H. H. A., Ladrido-Ignacio, L., & Wig, N. N. (1980). Mental disorders in primary health care: A study of their frequency and diagnosis in four developing countries. *Psychological Medicine,* 10(2), 231-241. https:// doi.org/10.1017/S0033291700043993

Haslip, M. J., Allen-Handy, A., & Donaldson, L. (2020). How urban early childhood educators used positive guidance principles and improved teacher-child relationships: A social-emotional learning intervention study. *Early Child Development and Care,* 190(7), 971-990. https://doi.org/10.1080/03004430.2018.1507027

Herman, K. C., Hickmon-Rosa, J., & Reinke, W. M. (2018). Empirically derived profiles of teacher stress, burnout, self-efficacy, and coping and associated student outcomes. *Journal of Positive Behavior Interventions,* 20(2), 90-100. https://doi.org/10.1177/1098300717732066

Jager, M. E., & Macedo, J. C. (2018). Relação afetiva professor-aluno e esquemas iniciais desadaptativos em crianças pré-escolares. *Revista Brasileira de Terapias Cognitivas,* 14(1), 11-20. http://dx.doi.org/10.5935/1808-5687.20180003

Keller, F., & Langmeyer, A. N. (2019). An item response theory analysis of the Strengths and Difficulties Questionnaire (SDQ). *European Journal of Psychological Assessment,* 35(2), 266-279. https://doi.org/10.1027/1015-5759/a000390

Kratochwill, T. R., & Stoiber, K. C. (2002). Evidence-based interventions in school psychology: Conceptual foundations of the procedural and coding manual of division 16 and the society for the study of school psychology task force. *School Psychology Quarterly, 17(4),* 341-389. https://doi.org/10.1521/scpq.17.4.341.20872

Kusche, C. A., & Greenberg, M. (1994). PATHS: Promoting alternative thinking strategies. South Deereld: Developmental research programs Inc. https://doi.org/10.1002/ijop.12426

LaForett, D. R., Murray, D. W., Reed, J. J., Kurian, J., Mills-Brantley, R., & Webster-Stratton, C. (2019). Delivering the Incredible Years® dina treatment program in schools for early elementary students with self-regulation difficulties. *Evidence-Based Practice in Child and Adolescent Mental Health,* 4(3), 254-272. https://doi.org/10.1080/23794925.2019.1631723

Lievens, F., Reeve, C. L., & Heggestad, E. D. (2007). An examination of psychometric bias due to retesting on cognitive ability tests in selection settings. *Journal of Applied Psychology,* 92(6), 1672-1682. https://psycnet.apa.org/doi/10.1037/0021-9010.92.6.1672

Lochman, J. E., Palardy, N. R., McElroy, H. K., Phillips, N., & Holmes, K. J. (2004). Anger management interventions. *Journal of Early and Intensive Behavior Intervention,* 1(1), 47-56. http://dx.doi.org/10.1037/h0100283

Lopes, C. S., Abreu, G. D. A., Santos, D. F. D., Menezes, P. R., Carvalho, K. M. B. D., Cunha, C. D. F., Vasconcellos, M.T.L., Bloch, K. V, & Szklo, M. (2016). ERICA: Prevalência de transtornos mentais comuns em adolescentes brasileiros. *Revista de Saúde Pública,* 50(1), 1-9. https://doi.org/10.1590/s01518- 8787.2016050006690

MA, K., & Cavanagh, M. S. (2018). Classroom ready? Pre-service teachers' self-efficacy for their first professional experience placement. *Australian Journal of Teacher Education,* 43(7). http://dx.doi.org/10.14221/ajte.2018v43n7.8

Marin, A. H., Alvarenga, P., Pozzobon, M., Lins, T. C. D. S., & Oliveira, J. M. D. (2019). Evasão em intervenções psicológicas com pais de crianças e adolescentes: Relato de experiência. *Psicologia: Ciência e Profissão, 39,* 1-14. https:// doi.org/10.1590/1982-3703003187233

Marin, A. H., Borba, B. M. R., & Bolsoni-Silva, A. T. (2018). Problemas emocionais e de comportamento e reprovação escolar: Estudo de caso-controle com adolescentes. *Psicologia: Teoria e Prática,* 20(3), 283-298. http://dx.doi.org/10.5935/1980-6906/ psicologia.v20n3p299-313

Marin, A., & Fava, D. C. (2020). Programas de intervenção no contexto escolar: Revisão da literatura científica. In D. C. Fava (Ed.), *A Prática da psicologia na escola: Introduzindo a abordagem cognitivo-comportamental* (pp. 325-348). Artesã.

Marin, A. H., Silva, C. T. D., Andrade, E. I. D., Bernardes, J., & Fava, D. C. (2017). Competência socioemocional: Conceitos e instrumentos associados. *Revista Brasileira de Terapias Cognitivas,* 13(2), 92-103. http://dx.doi.org/10.5935/1808-5687.20170014

McIntosh, R. D., Fowler, E. A., Lyu, T., & Della Sala, S. (2019). Wise up: Clarifying the role of metacognition in the Dunning-Kruger effect. *Journal of Experimental Psychology: General,* 148(11), 1882-1897. https://doi.org/10.1037/xge0000579

Murray, A. L., Booth, T., Eisner, M., Ribeaud, D., McKenzie, K., & Murray, G. (2019). An analysis of response shifts in teacher reports associated with the use of a universal school-based intervention to reduce externalizing behavior. *Prevention Science,* 20(8), 1265-1273. https://doi.org/10.1007/s11121-019-00999-2

Papa, A., & Epstein, E.M. (2018). Emotion and emotional regulation. In S. Hayes & S. Hofmann (Eds.), *Process Based CBT* (pp. 137-152). Context Press.

Paulus, F. W., Ohmann, S., & Popow, C. (2016). Practitioner review: School-based interventions in child mental health. *Journal of Child Psychology and Psychiatry,* 57(12), 1337-1359. https://doi.org/10.1111/jcpp.12584

Reinke, W. M., Herman, K. C., Stormont, M. (2013). Classroom-level positive behavior supports in schools implementing SW-PBIS: Identifying areas for enhancement. *Journal of Positive Behavior Interventions, 15,* 39-50. https://doi.org/10.1177%2F1098300712459079

Renshaw, T. L. (2019). Screening using the SDQ total difficulties scale: An analog test of three cutoff values. *Journal of Psychoeducational Assessment,* 37(8), 1030-1036. https://doi.org/10.1177/0734282918809808

Santos, R. G. H., & Celeri, E. H. R. V. (2018). Rastreamento de problemas de saúde mental em crianças pré-escolares

no contexto da atenção básica à saúde. *Revista Paulista de Pediatria, 36(1),* 82-90. https://doi.org/10.1590/1984-0462/;2018;36;1;00009

Shernoff, E. S., Bearman, S. K., & Kratochwill, T. R. (2017). Training the next generation of school psychologists to deliver evidence-based mental health practices: Current challenges and future directions. *School Psychology Review,* 46(2), 219-232. https://doi.org/10.17105/SPR-2015-0118.V46-2

Silveira, D.T., & Córdova, F. P. (2002). A pesquisa científica. In T.E. Gerhardt, & D. T. Silveira (Eds.), *Métodos de pesquisa* (pp 31-42). Editora da UFRGS.

Sparafino, E. P. (2020) Autogerenciamento. In S. C. Hayes, & S. G. Hofmann (Eds), *Terapia cognitivo-comportamental baseada em processos: Ciência e competências clínicas* (pp. 184-192). Artmed.

Streiner, D. L. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment,* 80(1), 99-103. https://doi.org/10.1207/S15327752JPA8001_18

Sugai, G., Horner, R. H., Dunlap, G., Hieneman, M., Lewis, T. J., ... & Ruef, M. (2000). Applying positive behavior support and functional behavioral assessment in schools. *Journal of positive behavior interventions,* 2(3), 131-143. https://doi.org/10.1177/109830070000200302

Von Suchodoletz, A., Jamil, F. M., Larsen, R. A., & Hamre, B. K. (2018). Personal and contextual factors associated with growth in preschool teachers' self-efficacy beliefs during a longitudinal professional development study. *Teaching and Teacher Education, 75,* 278-289. https://doi.org/10.1016Zj.tate.2018.07.009

Walker, H. M., Kavanagh, K., Stiller, B., Golly, A., Severson, H. H., & Feil, E. G. (1998). First step to success: An early intervention approach for preventing school antisocial behavior. *Journal of Emotional and Behavioral Disorders,* 6(2), 66-80. https://doi.org/10.1177/106342669800600201

Wenzel, A. (2018). Inovações em terapia cognitivo-comportamental: Intervenções estratégicas para uma prática criativa*. Artmed.*

Woolfolk, A. E. & Hoy, W. K. (1990). Prospective teachers' sense of efficacy and beliefs about control. *Journal of Educational Psychology,* 82(1), 81-91. https://doi.org/10.1037/0022-0663.82.1.81

Wu, Y, Lian, K., Hong, P., Liu, S., Lin, R. M., & Lian, R. (2019). Teachers' emotional intelligence and self-efficacy: Mediating role of teaching performance. *Social Behavior and Personality: An International Journal,* 47(3), 1-10. https://doi.org/10.2224/sbp.7869

Zee, M., & Koomen, H. M. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research,* 86(4), 981-1015. https://doi.org/10.3102/0034654315626801

Zee, M., de Jong, P. F., & Koomen, H. M. (2017). From externalizing student behavior to student-specific teacher self-efficacy: The role of teacher-perceived conflict and closeness in the student-teacher relationship. *Contemporary Educational Psychology, 51,* 37-50. https://doi.org/10.1016/). cedpsych.2017.06.009