

Article

Confident Parents for Easier Children: A Parental Self-Efficacy Program to Improve Young Children's Behavior

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Abstract: This study presents the effects on children's behavior of *Confident Parents*, a focused parenting program targeting parental self-efficacy. This parenting program aims to improve child behavior through the enhancement of parental self-efficacy. *Confident Parents* was experimentally tested on a total sample of 80 parents of three-to-six-year-old preschool aged children with moderate to clinical levels of externalizing behavior. Thirty-seven parents participated in the program, and were compared with a waitlist control group ($n = 43$). The intervention consisted of eight weekly group sessions. Effect sizes were evaluated through both observational and parent-report measures on the child's behavior, as well as self-reported parental self-efficacy at pretest, post-test, and a four-month follow-up. Through a multi-level analysis, predictors of the change in the child's behavior were identified. The moderating effect of socio-economic risk and externalizing behavior at baseline were also included in the analysis. Results show that *Confident Parents* improved the child's behavior, both reported by parents and, to a lesser extent, when observed in interaction with the parent. Children with higher levels of behavior difficulty benefited more while those with socio-economic risk benefited less from this program. These results illustrate that focusing a parenting program on improving self-efficacy is effective to reduce externalizing behavior in children. This underdeveloped treatment target is worthy of investigation in parenting intervention research.

Keywords: parenting; preschoolers; intervention; self-efficacy; child externalizing behavior

1. Introduction

Externalizing behavior (EB), defined as aggression, non-compliance, hyperactivity, inattention, and impulsivity, is the most common reason for young children's referral to mental health services [1]. Most children demonstrate some of these behaviors, considered as part of a standard development path [2], but when pervasive and intensive—for 5% to 14% according to studies [3,4], EB can have negative effects on children's social and learning skills, as well as on family life [5].

1.1. Contributing Factors to Child EB

Numerous factors contribute to EB in children, the most documented of which are biological factors (i.e., difficult temperament), environmental factors (i.e., socio-economic disadvantage), and negative parenting, such as harsh discipline, physical punishment, inconsistency, or laxness [6–8]. Many correlational studies have shown a strong link between negative parenting and a high level of EB in children [9,10]. Parents use more negative discipline and children display more disruptive behavior, contributing to a vicious circle, leading to increasingly difficult behavior in children [11,12].

Numerous studies also show a relation between child EB and parental cognition. Among these cognitions, parenting knowledge is related to parenting behavior [13]. The more parents are knowledgeable about child rearing and child development, the more likely they are to act and respond positively and adequately towards their child. Parental self-efficacy (PSE), defined as beliefs parents hold of their capacity to parent a child [14,15], is also an important factor. A parent with an aggressive or agitated child often feels less competent than other parents [16–18]. The link between PSE and parenting behavior has also been investigated. It has been demonstrated that PSE, parenting behavior, and the child's behavior are connected in an interactive way and influence one another. Parents with low self-efficacy tend to use more coercive and harsh parenting than parents with a higher level of self-efficacy, who use more positive parenting, such as warmth, sensitivity, positive affect, consistency, or rule setting [19,20]. Children of low self-efficacy parents tend to be more difficult, with higher negativity and non-compliance [21–25].

1.2. Parenting Programs to Improve Child Behavior

Given that EB is the most common reason for mental health consultations for children, a number of treatments have been tried in the last few decades. Many of these focus on the parent, in an attempt to reduce negative parenting and improve parent-child interaction. They imply that parents are key actors for change in the child, and are based on the interactional nature of parent-child interactions [26,27].

Several meta-analyses have shown the effectiveness of such parenting interventions at reducing children's EB, with a small to moderate effect size varying from 0.35 to 0.53 [28–30]. A majority of these programs tend to cover a wide range of parenting behaviors, such as warmth, sensitivity, praise, rule setting, and monitoring. They also tend to prioritize the modification of parenting behaviors rather than cognition [31,32]. Nevertheless, several parenting programs have included cognitive components in addition to the existing behavioral components [33]. Their addition is justified by the fact that many researchers and clinicians acknowledge the importance of the cognitive dimension in parenting [34]. However, the multimodal format of the programs, encompassing many behavioral and cognitive components, does not allow an evaluation of the specific effect of the cognitive components on children's behavior. In a literature review, Mah and Johnston [35] analyzed seven studies, in which an incremental cognitive component was added to an existing behavioral program to enhance treatment outcomes. They underlined the difficulty of evaluating isolated effects of specific components on parenting and child EB when a cognitive component is added.

Evaluating the specific effect of cognitive components on children's behavior requires the implementation of quasi experimental studies in which a specific parental cognition is manipulated in isolation. In a study following this design, the effect of manipulating self-efficacy was tested on child behavior with typically developing dyads by Mouton and Roskam [36]. They showed that self-efficacy can be reinforced in mothers by using brief positive feedback on their current parenting skills with their child. Direct positive effects on the observed child behavior were already visible after a single feedback session, with a medium effect size (0.64).

1.3. Factors Influencing Parenting Programs' Effectiveness

Some meta-analyses have analyzed predictors and moderators to achieve a better understanding of who benefits the most from such programs and under what circumstances [3,37]. The age and gender of children and parents were controlled for in these various meta-analyses, but showed no main effect.

Two of the most documented factors are the initial severity of the child's EB and the socio-economic status of the family (SES, in terms of parental income and education). Concerning the initial severity of the child's EB, results are contradictory. Some authors have observed greater program effectiveness in clinical samples [38] in which children had a high level of EB, and speculated that this is because parents are more motivated to change [39]. However, other authors [4,40] have concluded that there is no systematic effect of initial severity. Concerning family SES, low SES children are considered to be at

risk for EB, and their parents for negative parenting [41]. Single parenthood and high levels of parental stress or adversity in the family also contribute to this risk factor [42]. These SES risk factors have also been thought to diminish the effects of parenting programs [4,38]. However, there is controversy on this issue. For McGilloway et al. [43], Beauchaine, Webster-Stratton and Reid [44], and Gardner et al. [45], children of at-risk families derive considerable benefits from programs, while other research has shown that moderation effects of SES risk are not visible at post-test, only at follow-up [46]. In any case, the effects of these factors have not been investigated previously in the case of programs focusing on parental cognition, in particular self-efficacy.

1.4. Current Study

The current study aims to test the specific effect of modifying the cognition of PSE exclusively on child behavior. This study analyzes the change occurring in children with moderate to clinical levels of externalizing behavior after the participation of their parents in the program, *Confident Parents*. The direct effects of self-efficacy were explored through the following two questions: When we modify parental cognition of self-efficacy directly and exclusively, will this prove effective in improving child behavior, both reported by parents and observed? Do the effects of this program differ according to the initial child EB severity or SES risk?

Based on previous experimental research, our hypothesis is the following: That this self-efficacy program would have a positive effect on the child's behavior. We had no hypotheses on the predictive effect of the initial child severity of EB or socio-economic risk because of the contradictory findings in the literature and the lack of studies on these factors in cognitive interventions.

The method used here was the one used for micro-trials [47], which are randomized experiments testing the effects of relatively brief and focused environmental manipulations designed to suppress specific risk mechanisms or enhance specific protective mechanisms. They imply three conditions: First, the identification of a protective factor (PSE); second, the selection of a specific proximal outcome with multiple informants and instruments (EB, both parent-reported and observed); and, last, the manipulation of the selected factor (PSE) in a randomized controlled trial.

2. Materials and Methods

2.1. Participants

This study is part of a longitudinal Hard-t(w)o-Manage (H2M) research program conducted at the Psychological Sciences Research Institute of the University of Louvain (Louvain-la-Neuve). Data were collected from two samples of 44 at-risk and 36 clinically referred three-to-six-year-old preschool children and their parents, respectively. The first sample, composed of at-risk families, was recruited and tested in 2013 and the second sample, composed of families with children displaying clinical levels of EB, was recruited and tested in 2014. The two samples attended the same parenting program, in which the same parenting variable—PSE—was manipulated. They were tested at pretest, post-test, and follow-up at the same intervals (post-test at 8 weeks/follow-up at 16 weeks) and shared common socio-demographic characteristics (parent's gender and age, child's age and intellectual quotient, IQ). They only differed in respect to their clinical EB characteristics, such as initial severity of EB and other socio-economic characteristics that are known to be related to child EB.

For the recruitment of subjects, parents were informed through leaflets, posters, a website, and Facebook page created for this study. At-risk parents were invited to attend a free parents' group to improve their relationship with their child. Information was given to selected schools, according to their socio-economic index. This index is computed by the National Institute of Statistics in Belgium based on the pupils' neighborhood's characteristics (incomes, educational level, housing quality, professional occupation, and employment) and ranges from 1 to 20. An index score of 1 to 5 is attributed to the most deprived schools, which receive additional financial support from the government. Families were recruited in schools with an index score of 6 to 10 to target children with low SES, but exclude the

most deprived children. Parents in the clinical sample were invited to attend a free parents' group if they had a child who showed difficult behavior. Based on an online questionnaire, children with a clinical or borderline level of EB were included in the study. The choice to merge the two samples is justified by the fact that the parents received the same intervention and the same experimental design was implemented. This approach also ensured a wider range of EB level at baseline and SES risk.

Forty-seven parents were assigned to a waitlist control group, based on their enrolment order. To reduce the waiting time between assignment and participation in the intervention, the first parents to enroll were assigned to an 8-week waitlist, resulting in a pseudo-random allocation. After eight weeks, the remaining 43 parents in the control group were assigned either to the *Confident Parents* program (N = 25) or to other interventions (N = 76) based on a block randomization procedure to ensure that equal numbers were allocated to the different programs. However, since group sessions were organized after work hours several days in a week, some flexibility was given to the participants with regard to timetable. This was done to maximize convenience for the participants and to limit drop-out from the experiment.

The other 92 participants were directly assigned either to the *Confident Parents* program (N = 16) or to other interventions (N = 76). Direct assignment of the participants was also based on a block randomization procedure, allowing for a certain flexibility afterwards. Forty-one parents participated in the *Confident Parents* program (25 from the former control group and 16 directly allocated).

Three parents dropped out between the enrollment and testing, and one outlier was excluded. Forty-three valid cases were finally considered for control data analyses. After the eight-week waiting period, the experimental group was composed of 37 parents: 25 from the former control group and 16 newly enrolled parents. Four parents dropped out between the enrollment and testing. Data analyses of the intervention group were eventually based on 37 valid cases. Fifty-six parents were allocated to other interventions tested in the H2M research, all lasting eight weeks (see flow of participants in Figure 1). The 16 dyads that were only involved at the program stage were compared with the other 64 dyads, and did not differ on any socio-demographic or baseline outcomes. There were no drop-outs between baseline and follow-up; parents attended at least 80% of the program sessions and all pre-post assessments.

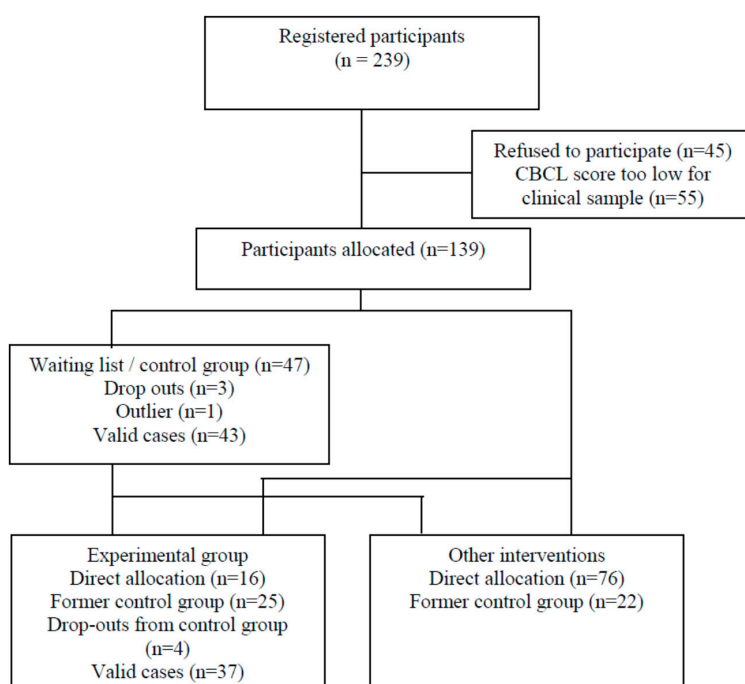


Figure 1. Flow of participants through each stage of the study.

In the total sample (see Table 1), the mean age of the children (52.5% boys) was four and a half years ($M = 54.98$ months, $SD = 8.21$). The mean age of the parents (75% mothers) was 37.69 years ($SD = 5.57$). Children with intellectual disabilities or a high IQ were excluded from the study ($IQ < 5$ or > 15). Their IQ ($M = 10.60$, $SD = 2.30$) was evaluated using two subtests (block design and information subtests) of the WPPSI-III [48] for reasoning and verbal IQ, respectively, and their total score ranged from 0–20. Thirty-two percent of the children had been in contact previously with clinicians for their behavior. Parents' educational level was calculated as the number of years of education they had completed, counting from first grade onward. Few had only completed six years (3.8%); 25% had completed twelve years (completion of secondary and compulsory education in Belgium); others had completed three more years in undergraduate studies (12.5%); and the majority had a four-year degree or more (58.8%). 18.8% of families had one child, 56.3% had two and 25% had three or more. Monthly incomes were less than €2000 for 23.8% of the families (the poverty threshold in Belgium), between €2000 and €4000 for 38.8%, and higher than €4000 for 37.5%. On average, the level of chaos in the families (adverse environmental factors, such as household level of noise, crowding, untidiness) was 5.54 ($SD = 2.86$) on a scale of 15. 11.3% of parents were single. A global socio-economic risk factor (SES risk) was compiled with single parenthood status, the lowest 30% of income, the lowest 30% education levels, and the highest 30% of chaos scores, each counting as one risk on a total scale from 0 to 3. The mean risk factor for the entire sample was less than one. 42.5% of families had no risk factors, 32.5% had one, 16.3% had two, and 8.8% had three of these risk factors.

Table 1. Descriptive statistics on socio-demographic characteristics for the experimental and control groups.

Characteristics	Control (n = 43)	Experimental (n = 37)	Total (N = 80)	Tests <i>T</i> -Tests <i>t</i> (79) or χ^2 (1)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Parent's age	37.15 (5.03)	38.36 (6.18)	37.69 (5.57)	0.93
Parent's gender (%mothers)	77%	73%	75%	0.15
Child's age (months)	53.84 (8.69)	56.30 (7.53)	54.98 (8.21)	1.34
Child's gender (%boys)	53.5%	51.4%	52.5%	0.04
Child's IQ	10.22 (2.35)	11.02 (2.19)	10.60 (2.30)	1.56
Educational level (years)	14.37 (2.53)	14.65 (2.24)	14.50 (2.39)	0.51
Monthly income (%)				
<2000 euros	27.9%	18.92%	23.8%	
2000–4000 euros	34.9%	43.24%	38.8%	1.04
>4000 euros	37.2%	37.84%	37.5%	
Chaos	5.91 (2.76)	5.11 (2.96)	5.54 (2.86)	1.25
Single parent families (%)	14.0%	8.1%	11.3%	0.68
Socio-economic risk	1.05 (1.02)	0.76 (0.89)	0.91 (0.97)	1.34
Previous counseling	30.20%	35.10%	32.5%	0.22

2.2. Procedure

In both samples, baseline data were collected with a multi-method approach, using both parent-reported questionnaires and observations. Data was collected online using a questionnaire on socio-demographics and the child's EB. Other baseline data (PSE and child's IQ) were collected in each family during a visit to the home or on the university premises by extensively trained researchers. During the first meeting, a standardized observation of child behavior was done during a parent-child interaction and video-recorded for coding using the Crowell procedure [49]. This observation method of a semi-structured play session has been widely used [16,50]. It involves a series of episodes designed to elicit behaviors showing how comfortable and familiar the dyad members are with each other, how they negotiate transitions, their ability to solve problems together, and their use of shared positive or negative affect. The setting used here [51] is unstructured enough to allow for "real-life" spontaneous interactions. It takes 25 min to complete and consists of two main episodes: A free-play session and a frustration task, including a "cleaning toys away" task, followed by three increasingly

difficult problem-solving tasks (puzzles). The cleaning task and the two most difficult puzzles were added to produce the frustration task score (the first puzzle was not frustrating enough to be included). At the end of the program, as well as after a 16-week follow-up period, data were collected at home or on the university premises.

This study was approved by the Ethical Committee of the Psychological Sciences Research Institute of the University of Louvain. Informed consent was obtained from all participants included in the study. Participants received small rewards provided by sponsors (museum tickets, small toys, or shopping vouchers). A waitlist control group design was chosen, mostly for ethical reasons, as is often the case in parenting intervention research [52]. Although such a design prevents comparisons at follow-up, it offers an alternative to families who would be left without any support otherwise.

2.3. The *Confident Parents* Program

Confident Parents is a focused parenting program to empower parents, based on the hypothesis that they will be able to adjust their parenting skills to their child's characteristics and their family functioning by themselves. Parents were told at the very first session: "You, as a parent, have the greatest change potential in the relationship with your child. You are the one who knows him or her best." They were told that there would be no explicit coaching on the way they raise their child because they are the best experts about their own child. The focus would be on what they think, how they feel about themselves as a parent, and what they imagine is going on for their child.

The content of *Confident Parents* was based on Bandura's social learning theory, assuming that self-efficacy should be considered not as a personality trait, but rather as context-dependent, which means that it can be manipulated, as shown in social psychology and sport studies [53]. Social learning theory holds that self-efficacy is rooted in individual factors (e.g., personal history of accomplishment, emotional arousal and its physiological impact) as well as in contextual factors (e.g., verbal feedback from others, social comparisons), [54]. Performance accomplishments are the strongest source of self-efficacy, followed by vicarious experience (an evaluation process based on seeing others perform), verbal persuasion, and emotional arousal. In parenting, self-efficacy is therefore expected to depend on parents' past and actual experience with their children (successes and failures), and on the emotional arousal this experience may induce. Feedback from others (in particular comments from relatives, teachers, doctors, friends, etc.) and social comparison with other parents are also major contributors to self-efficacy.

The intervention consisted of eight weekly group sessions with seven to eleven parents, including mothers and fathers (75% and 25%, respectively, on average). During an hour and a half, activities varied from group discussion based on brainstorming, video or audio clips, and role-plays to personalized video-feedback on parent-child interactions. Between sessions, homework was set to implement issues discussed at home. Groups were led by two trained psychologists based on a standardized delivery manual.

This manual contained instructions for the participants at each session, a precise timetable, a description of activities and materials and standardized answers to possible questions raised by parents. Recommendations were given about how to keep a neutral, open and unconditional acceptance attitude towards parents, and how to stay exclusively focused on the manipulated variable. No instructions were given by the program leaders to parents on how a good parent should deal with a child, to avoid weakening parents' self-efficacy and reinforcing the program leaders' position as experts. On the contrary, the intervention aimed at empowering parents by making them realize how much they already do and know about their child, and by countering the negative perceptions that often lead to guilt.

The first session began with discussion based on each parent's representations of his role and difficulties with the child. The therapeutic process used here was based on challenging specific cognitions about child-rearing and child development [55]. Daily difficulties were shared among the group, helping to normalize parents' daily hassles and reduce parents' feelings of powerlessness and

guilt. This normalization process contributed greatly to the group-building process as well as to a process of seeing things in perspective for parents. In Session 2, the cognitive process involved was breaking free of negative and globalizing thoughts. The third session focused on the identification of emotions, cognitions, and behaviors, as well as physical sensations, when expressing or receiving positive feedback. In Session 4, parents watched videos showing various dyads, illustrating the effects of children's difficult behavior on parents (i.e., emotional reaction, physical sensations, and thoughts). Unconscious automatic cognitions and behaviors and the emotional arousal of parents and children were discussed. The therapeutic aim here was to raise parents' awareness of these automatic processes and increase their anticipation capacity to limit the activation of negative processes [55]. In Session 5, parents were requested to ask a significant other of their choice (their own parents, siblings, best friends, etc.) to give them positive feedback on their parenting and their child. The effects of this feedback were discussed as well as the differences of perspective on the same child from different people, illustrating the possible negative bias parents may have towards their own child. The therapeutic process used here was the reinforcement of self-efficacy through one of Bandura's four sources of PSE, i.e., verbal persuasion from significant others [56]. In Session 6, once the group cohesion was strong enough, parents were invited to recall a difficult time with their child and identify their own thoughts, emotions, and physical sensations in this situation. Mindfulness was used as a coping strategy [55,57]. In the last two sessions, personalized video-feedback was used to observe and discuss dyadic interactions in the group [58]. Similarly to Mouton and Roskam [36], the hypothesis was that referring to the parents' skills with their own children, reinforced still further by the use of images here, rather than referring to a skill implemented with any children, would help strengthen self-efficacy.

3. Measures

3.1. Parental Self-Efficacy

Parental self-efficacy (PSE) was assessed for manipulation check with the Global PSE Scale of Meunier and Roskam (EGSCP, 2009a). Based on Bandura's Social Learning Theory [56] and on subsequent parenting [16], this is a 25-item scale related to five domain-specific PSE factors: Discipline, nurturance, playing, instrumental care, and teaching. Items are in the form of affirmatives, for example: "I am able to sense when my child is starting to become distressed" for the nurturance subscale. The measure has been validated on 705 parents and displays good psychometric properties, according to Meunier and Roskam (five-factor solution explaining 53.1% of the variance, α ranging from 0.60 to 0.84, 2009a). As suggested by the authors, a main PSE score was computed to limit the number of predictors in the analyses. Moderate to high correlations were observed between four of the five domain-specific measures ($r = 0.25$ to 0.57), suggesting that they may be combined in a higher-order domain-general parental PSE measure (α of 0.71, 0.72, and 0.76 for the total score at baseline, post-test and follow-up, respectively). The instrumental care scale was not included in this study because of its limited correlation with the other scales. Parents of EB children may feel competent for the basic functions of parenting (feeding, physical, or medical care, etc.), but less so for discipline, nurturance, playing, and teaching.

3.2. Child Behavior

Child externalizing behavior was measured using the preschool version of the Child Behavior Check-List or CBCL [59]. The CBCL provides three-point Likert scales: Not at all present, moderately present, or often present. Its psychometric properties are good (α ranging from 0.63 to 0.86 for the different scales and 0.85 for test-retest reliability), including for the French-version validation (α ranging from 0.63 to 0.86 for the different scales and 0.85 for test-retest reliability) used here [60]. For the current study, the data collection was limited to two first-order scales, i.e., the "attention problems" and "aggressive behavior" scales, enabling us to calculate an externalizing behavior total score and building the second-order "externalizing behavior" scale. According to the norms of the second-order

EB scale, 61.3% of the children were in the clinical or borderline range at baseline (≥ 21). The total sample varied from 6 to 45, with a mean of 22.33 ($SD = 8.74$).

Child's observed behavior during the interaction with the parent was measured using the Crowell child scales. Positive affect (smiling and laughing), irritability (fighting, withdrawn behavior with anger, sulking), non-compliance (not listening to the parent's suggestions or requests), and aggression (verbal or physical) towards the parent, as well as persistence and enthusiasm towards the tasks, were coded on a seven-point Likert-type scale, except for aggression, which was measured on a five-point Likert-type scale. This was done in accordance with the authors of the validation of the Crowell paradigm and coding [51]. A combined positive score was computed by adding scores on the positive affect, enthusiasm, and persistence scales, and the inverse of the scores on the irritability, non-compliance, and aggression scales. This was done distinctively for free play (consisting of one session, with a score range from 1 to 40) and for the frustration tasks (consisting of three different tasks—clean up and two puzzles—with a score range from 1 to 120).

3.3. Treatment Satisfaction

Treatment satisfaction was measured at post-test, through a global item using the Visual Analogue Scale [61], with the score ranging from 1 to a maximum of 10.

3.4. Analysis Strategy

A first preliminary analysis consisted of comparing control and experimental groups for socio-demographic and outcome baseline measures using *t*-tests (see Table 1). Next, the consistency of the observed and parent report measures with one another was checked through correlations (see Table 2). Third, the objective was to check if there was an effect of the focused parenting program (see Table 3) through an intragroup *t*-test and intragroup effect size (calculated between pre- and post-measures with Cohen's *d*) as well as an intergroup *t*-test and intergroup effect size (between the control and experimental groups with Morris' Effect Size (*ES*) [62]. The outcomes were observed child behavior in free play and frustration task (Crowell), parent-reported child EB (CBCL), and PSE (see Table 3). The interaction between the group (experimental vs. control) and time (pre- vs. post-measure) was calculated with analyses of variance for repeated measures.

In the fourth step of the analysis, Hierarchical Linear Modeling (HLM) techniques with the HLM 6.08 software [63,64] were used to study the predictors of EB change, considered both from parent reports and observation over the course of the study. We therefore considered the three waves of measurement, i.e., baseline, post-test, and follow-up, for participants in the intervention group. To start with, we checked the results of the unconditional model where time is the only predictor to establish whether there was significant individual variability around the slope and if it was appropriate to examine predictors of child EB change. Next, we analyzed the extent to which change in parent self-efficacy over the course of the study would predict change in parent-reported child EB and children's observed behavior in frustration tasks. The choice to focus this analysis on the frustration task was justified by the nature of this task (a task inducing frustration brings useful insight into the functioning of children with externalized behavior) and the concern to limit statistical analyses. We tested two models separately, one for each of the two outcomes (parent-reported child EB and observed child behavior). The conditional models were computed with a time-varying predictor, i.e., PSE, entered at level 1, and the trajectory of each of the two outcomes as the dependent variable. The time varying predictor was within-person centered and constrained to have fixed effects. The mean level of the time-varying predictor over the three waves was also calculated and added as a predictor of the slope coefficient at level 2. This procedure aimed to examine the pure effect of change in the time-varying predictor over time (as its mean level was controlled; Hoffman & Stawski, 2009). In this conditional model, we also tested whether and to what extent age, gender, initial EB severity, or SES risk were related to EB change. These time-invariant predictors were added at the level 2 (Raudenbush et al., 1995).

Table 2. Correlation between children’s observed and parent reported measures at baseline, post-test, and follow-up.

	Baseline				Post-Test				Follow-Up			
	Child EB	Child in Free Play	Child in Frustration Tasks	Parental Self-Efficacy	Child EB	Child in Free Play	Child in Frustration Tasks	Parental Self-Efficacy	Child EB	Child in Free Play	Child in Frustration Tasks	Parental Self-Efficacy
Child EB	-	-0.14	-0.28 *	-0.53 **	-	-0.18	-0.23 *	-0.49 **	-	-0.42 *	-0.42 *	-0.73 **
Child in free play		-	0.46 **	0.17		-	0.44 **	0.01		-	0.48 **	0.29 †
Child in frustration tasks			-	0.22 *			-	0.10			-	0.38 *
Parental self-efficacy				-			-	-				-

** $p < 0.01$; * $p < 0.05$; † $p < 0.01$. Child externalizing behavior (EB): Externalizing behavior measured by the Child Behavior Check List (CBCL). Child in free play: Observed positive behavior in Crowell. Child in frustration tasks: Observed positive behavior in Crowell.

Table 3. Means and standard deviations at baseline, post-test, and follow-up, and program effects compared to baseline.

	Baseline								Post-Test						Follow-Up						
	Control (n = 43)		Experimental (n = 37)		t-test X ²	Control (n = 43)		t-test with Base-Line	Cohen's d	t-test Confidence Intervals	Experimental (n = 37)		t-Test with Baseline	Cohen's d	t-test Confidence Intervals	Morris's ES	Experimental (n = 37)		t-Test with Baseline	Cohen's d	t-Test Confidence Intervals
	M	SD	M	SD		M	SD				M	SD					M	SD			
Parental self-efficacy	2.96	0.69	3.09	0.76	-0.85	3.12	0.69	-2.73 **	0.42	[-0.29 -0.04]	3.45	0.65	-4.47 ***	0.75	[-0.52 -0.20]	-0.27	3.65	0.64	-7.99 ***	1.35	[-0.73 -0.43]
Children’s observed positive behavior in free play	34.81	3.42	34.65	2.78	0.23	34.95	2.57	-0.29	0.04	[-1.12 0.84]	35.28	2.85	-0.92	0.15	[-1.87 0.70]	-0.09	34.95	2.38	-0.57	0.09	[-1.36 0.77]
Children’s observed positive behavior in frustration tasks	94.33	15.23	99.08	7.46	-1.81	94.47	14.15	-0.07	0.01	[-4.17 3.89]	100.67	8.08	-0.92	0.15	[-3.73 1.40]	-0.14	102.16	6.96	-2.14 *	0.35	[-6.00 -0.16]
Child’s externalizing behavior (CBCL)	23.26	9.24	21.24	8.12	1.03	21.60	8.24	1.65	0.25	[-0.37 3.67]	18.92	8.46	3.74 **	0.62	[1.24 4.20]	0.12	15.67	7.29	5.50 ***	0.92	[3.61 7.83]

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Cohen’s d: Intra-group Effect Size. Morris’s ES: Intergroup Effect Size. T-tests confidence 95% intervals.

4. Results

4.1. Preliminary Analyses

First, control and experimental samples were compared at baseline for socio-demographics and outcomes, showing no difference (see Table 1). Next, links between the various child variables (observed and parent reported) were verified (see Table 2). The results revealed coherent patterns of relations, supporting the validity of our measures and opened the way for checking for an effect of the program. This was done in the second step of the analysis (see Table 3).

4.2. Program Effect

4.2.1. Manipulation Check: Program Effect on PSE and Treatment Satisfaction

In the third step of the analysis, a manipulation check confirmed that the program had been successful in increasing parental self-efficacy. *T*-tests comparing pre- and post-tests of the experimental group showed that the program increased parental self-efficacy at post-test, with an intragroup moderate effect size of 0.75 and a large effect size of 1.35 at follow-up. Self-efficacy in the control group also increased, but to a lesser extent (Cohen's $d = 0.42$), which led to an intergroup effect size at post-test of 0.27 in favor of the experimental group. Descriptive statistics, results of *t*-tests and effect sizes are shown in Table 3. ANOVA for repeated measures showed a significant interaction effect between the group and time on parents' self-efficacy, in favor of the experimental group ($F(1,77) = 3.89$, $p < 0.05$). Another intervention effect can be measured by investigating treatment satisfaction. Parents were highly satisfied ($M = 8.23$, $SD = 1.28$, minimum, 3, and maximum, 10), with 74.3% of parents scoring between 8 and 9.

4.2.2. Program Effect on Parent-Reported Child EB

On the child's side, the results showed that Confident Parents decreased child EB when reported by the parent, between pretest and post-test. At post-test, the intragroup effect size was small ($d = 0.25$) for the control group and moderate ($d = 0.62$) for the experimental group (see Table 3), leading to a small intergroup effect size (Morris' $ES = 0.12$). The interaction effect (group \times time with ANOVA with repeated measures) was not significant ($F(1,77) = 0.70$, $p > 0.05$). At follow-up, EB continued to decrease, with a high effect size of the program ($d = 0.92$).

4.2.3. Program Effect on Observed Child Behavior

The effects of the intervention were lower on the observed child behavior than on parent-reported child behavior. At post-test, the intragroup effect size was almost nil ($d = 0.04$ in free play and 0.01 in frustration tasks) for the control group and small ($d = 0.15$) for both free play and frustration for the experimental group, leading to a small intergroup effect size (0.09 and 0.14 respectively). The interaction effect (time \times group) was not significant in free play ($F(1,77) = 0.32$, $p > 0.05$), but was significant in the frustration tasks ($F(1,77) = 5.50$, $p < 0.05$). At follow-up, behavior continued to improve, more in frustration tasks ($d = 0.35$) than in free play ($d = 0.09$).

4.3. Predictors of Child Behavior Change

Through the hierarchical linear model, predictors of EB change were identified. The examination of the random part of the unconditional model, where time is the only predictor, indicated significant individual variability around the slope and showed that it was appropriate to examine predictors of change in child EB (see Table 4). Fixed effects also indicated that child EB (parents' reports) significantly decreased by 2.74 per wave. The conditional model (see Table 5) shows that change in self-efficacy is the most significant predictor of this reduction in child EB reported by parents. For every unit increase in self-efficacy over a wave, there was a decrease of 3.68 units of child EB. The average level of self-efficacy also predicted EB change. For every unit above the average level of self-efficacy, a decrease

of 2.97 units of EB was found over a wave. Two other time-invariant predictors (SES risk and child's age) had significant, but lower, effects on child EB.

Table 4. Results of HLM unconditional models: Estimates of the intercepts, linear change, and variance in child EB (CBCL) and child's observed positive behavior in frustration tasks.

	Fixed Effects			Random Effects Variance
	Coefficient	SE	t(36)	
Child's EB (CBCL)				
Intercept	24.12 ***	1.70	14.17	75.38 ***
slope	−2.74 ***	0.51	−5.38	2.46 †
Child's observed positive behavior in frustration				
intercept	97.55 ***	1.77	54.97	46.74 **
slope	1.74 *	0.71	2.16	3.58

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, † $p < 0.10$. Tau is of -0.72 for child's EB (CBCL), and -0.75 for child's observed positive behavior in frustration.

Table 5. Results of HLM conditional models of variables in predicting change in child EB (CBCL) and child's observed positive behavior in frustration tasks.

Fixed Effects	Child's EB (CBCL)			Child's Observed Positive Behavior in Frustration		
	Coefficient	SE	t(31)	Coefficient	SE	t(31)
Level 1: Prediction of time-varying fluctuations						
Parental self-efficacy	−3.68 *	1.55	−2.37	−2.86	2.68	−1.07
Level 2: Prediction of linear change						
Intercept of the slope	−3.29 **	1.07	−3.07	2.43	1.46	1.66
Mean parental self-efficacy	−2.97 ***	0.52	−5.77	0.06	0.57	0.11
Parents' gender	0.16	0.66	0.23	1.09 *	0.53	2.05
Socio-economic risk	0.85 *	0.38	2.25	−0.51	0.35	−1.45
Child's age	−0.09 *	0.04	−2.54	0.17 ***	0.04	4.64
Child's gender	0.88	0.60	1.46	−1.07	0.56	−1.92

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Parents' gender coded 1 = mother, 2 = father. Child's gender coded 1 = girl, 2 = boy.

As far as observed child behavior is concerned, fixed effects indicated that child behavior significantly improved by 1.74 per wave. The conditional model displayed in Table 5 shows that the two predictors of changes in the child's observed behavior over time are the parent's gender (when fathers attend the program, their child's observed behavior improves more than when mothers attend) and the child's age. PSE does not emerge as a significant predictor here for the child's observed behavior. Finally, it is interesting to note that the initial level (intercept) and the change (slope) were correlated both for the child's EB and observed behavior ($\tau = -0.72$ and -0.76 , respectively). The more difficult the child was at baseline, the more this child tended to benefit from the parenting program, with the slope being more negative for CBCL. For the observed behavior, the more positive a child was at baseline, the less his/her observed behavior improved after the program.

5. Discussion

The aim of this study was to evaluate the effectiveness of *Confident Parents*, an innovative program targeting PSE with a view to improving children's behavior.

5.1. Effects on Child Behavior

Improving parents' self-efficacy had a positive effect on the child's behavior, as we hypothesized. The effects of *Confident Parents* on children's EB reported by parents were significant in the experimental group, with a moderate effect size at post-test, and continued to decrease at follow-up. However,

these effects were limited in comparison with the control group because some parents had already modified their representation of their difficulties with their child after one encounter with program leaders before attending the program. The effect on children's observed behavior was most apparent at follow-up in frustration tasks, with a small effect size. Compared with the control group, children were less difficult (less irritable, less non-compliant, less aggressive) and showed more positive affect, enthusiasm, and persistence with their parents who had attended *Confident Parents* when they were facing a frustrating situation. These children behaved better than those whose parents had not improved their self-efficacy through the program.

One explanation of this effect can be found in Mah, Johnston, and Regambal's study [65], in which they found that although the skills taught in most behavioral parenting programs are known to improve children's behavior, many parents have difficulty in engaging these skills and generalizing them across a wide range of situations. It may be harder for parents to improve their self-efficacy than their behavior without support [66]. Our main assumption in *Confident Parents* was that improving PSE could be a way to help parents engage in a change process with their child. They may then be able to adapt their parenting skills by themselves and to modify them if necessary. Behavior modification was not the focus here, as it is in most parenting programs, because we hypothesized that parents have the potential to modify behavior outside the program thanks to their increased self-efficacy. They can make use of reading and discussing best practice with other parents, and using the Internet and social networks, which makes information more easily accessible than used to be the case. When there is a positive parenting modification, the decrease in child EB would illustrate the conclusions from Mah and Johnston [35], along with Gardner et al [45], who stressed the positive impact of improved positive parenting on children (e.g., warmth, sensitivity) rather than a reduction of negative parenting (e.g., harsh or inconsistent discipline, laxness).

Despite the positive effect on children's EB, the difference between children's observed and parent-reported behavior raises questions. The change analyses with HLM do confirm that change in PSE is a predictor of a change in the child's EB, but do not confirm that the change in PSE, through the intervention, explains the child's observed behavior. This discrepancy between observed and reported measures of EB has been found in other studies [67]. Several explanations could be suggested. First, the Crowell observation paradigm could be a less favorable context than the home context reported by the parent. Second, parents may have over-rated children's behavior at baseline to convince program leaders of the severity of the situation and make sure that they were enrolled for the research. Third, another explanation specific to this study may be related to the content of the program itself. As it focused on self-efficacy, it may have helped modify parents' representation of their children, as measured by CBCL, even without or in addition to any actual improvement of children's behavior that would have been reported by another observer (the other parent or a teacher). Many parents came to the conclusion at the end of the program that part of their job as parents was to accept their child as he or she was, with a difficult temperament that might not change for instance, and to adapt to this. *Confident Parents* focused parents on the positive side of the relationship and therefore decreased their negative view of their child's difficulty. Also, this difference between measures may be explained by psychometric limitations of the parent report questionnaire. We cannot exclude that the effects on children's EB based on parents' reports may be due to a shared method variance with parental self-efficacy since both measures are parent reported. This highlights the need to use a multi-informant and multi-method design in parenting research.

Another interesting question concerns the differences between scores in free play and frustration tasks, which could be explained by the nature of the task (ecological in free play or challenging in frustration). When the interaction with the parent becomes more challenging, the positive change in the child's behavior is more visible than in a more ecological task, such as free play. The parent may decide to let go in free play, let the child take the lead, and not intervene too quickly, ignoring child irritability or even aggression by knowing that there are still several minutes before the end of

the session. In the frustration task, the parent may step in more actively and manage to modify the child's behavior.

Finally, it is interesting to note a discrepancy between the acknowledgement of the role of self-efficacy in parenting and the small place it has been given in programs. Self-efficacy has been identified as a good component of parental cognition on which to focus to empower parents, strengthen positive parenting, and contribute to reducing children's difficult behavior [24,68]. In their recent review, Wittkowski et al. [69] noted a positive impact of group-based early interventions for parents of preschool children on PSE. Furthermore, several studies have shown that higher PSE predict more positive behavior in children after participation in a program in which parenting behaviors are modified [33,44]. The study of Deković and colleagues [70] is innovative in the way it identifies the change in PSE during the program as a mediator between a change in parenting practices and adolescent EB. However, PSE has mostly been analyzed in existing programs so far as a positive side-effect, a by-product that moderates, mediates, or predicts change, documenting the indirect effects of self-efficacy on child EB.

5.2. Moderators of *Confident Parents'* Effectiveness

This study also aimed to investigate to what extent this self-efficacy parenting program was effective for all children, according to their initial EB severity and SES risk. The initial severity of EB was highly correlated to the change after the program. The more difficult the child was before the program, the more he/she benefited from the parent's attendance of the program. SES risk also appeared as a predictor of a lower decline of EB over time, but not of a lower score for children's observed behavior. The more disadvantaged the family was, the less children benefited from this PSE program. The cognitive nature of *Confident Parents* may make it less accessible to families facing daily hassles due to limited financial, social, and educational resources. The therapeutic processes used here, such as negative and global bias modification, standing back from the problem, and acceptance of child's characteristics that cannot be changed, may be complex and far from the daily priorities of such families. Explicit behavioral training for parents might be more appropriate in such circumstances.

Another question to be raised is the extent to which parents with a high level of self-efficacy are better at raising a child with externalizing behavior. In this study, the more confident parents (with the highest level of self-efficacy) had the easier children (with the lowest scores in EB), in line with previous correlational research [71]. Also, the results showed that an increase in self-efficacy predicted a decrease in child EB. However, some parents may not see the problem with their child as acute when other observers would (school teacher, another parent, or therapist). Their report of their child's EB might be biased. Not all parents may behave more effectively when they feel better about their parenting competence, but they still may see their child more positively and their child may behave more positively with them. An explanation could be found in the issue raised by Wilson et al. [72] about the non-linearity of the relation between self-efficacy and parenting behavior. On the question whether parents with strong self-efficacy are the best parents, Wilson et al. demonstrated that this is not always the case. In fact, the relation is more curvilinear than strictly linear. Parents with a moderate level of PSE demonstrated the best parenting behavior, while parents with high PSE were less adequate when interacting with their child. In their study, mothers who reported high PSE were also rated as low in sensitivity (introducing toys when their child was already busy, restricting their child's access to toys, physically manipulating their child, and violating their child's proximal space, for instance). They concluded that parenting programs need to develop strategies for reaching parents who enter with high levels of confidence, but lack the knowledge of positive parenting practices.

It may be important to underline that the way self-efficacy was reinforced in this *Confident Parents* program was based on reference to the actual performance of the parent with the child, for instance, using personalized video feedback. This partly counters the mismatch hypothesis in the case of parenting failure or aggravated outcomes for children mentioned by Cassé et al. in their study [73].

The group design was also helpful for questioning high-PSE parents who used harsh parenting in a non-stigmatizing way.

Finally, these results confirmed that increasing parents' PSE has a positive effect on children's behavior reported by parents, in line with previous studies on PSE [70,74]. However, these studies have been limited by their reliance on correlations and self-report. Micro-trial designs, like the present one, go one step further by exploring the relation between a specific parenting outcome (the parental cognition of self-efficacy) and child behavior.

5.3. Clinical Implications

Confident Parents has proved its effectiveness at improving child behavior and reducing child EB reported by parents. It could be used by clinicians as a potential intervention for parents who are willing to reflect on their parenting representations, beliefs, and expectations. Such a focused approach could be used in particular for families with children displaying a high level of EB severity, for parents with low self-efficacy, and for those who face limited socio-economic difficulties. Before orienting families towards a parenting program, clinicians could screen parents' self-efficacy and socio-economic situation and children's EB severity to direct them towards the most suitable program [41]. A shorter version of *Confident Parents* could also be tested to see if eight sessions are necessary or if four sessions would be enough to modify PSE and positively affect children. In other recent studies, the result that single session interventions have proved to significantly increase PSE and its maintenance at six months, similar to what has been found in the current program, is encouraging and this has substantial potential clinical importance [69]. The way forward in parenting intervention research could be to move from standardized universal programs towards programs adapted to family's needs, constraints, and potential. A more focused and shorter program could be more suitable for families.

5.4. Limitations

This study has several limitations. First, the size of its sample is relatively small, though it was adequate for a micro-trial design [47,75,76]. Second, no measures were available at follow-up for the control group due to the waitlist design, which is a common limitation in intervention studies. The question of the measurement of PSE, as a cognitive factor, is also a limitation for this study. It is based exclusively on parental self-report and cannot be combined with any other behavioral or multi-informant measures. This is a psychometric limitation usual in the cognitive parenting field and not specific to this study [69].

5.5. Future Research

Future research could include the analysis of parenting practices reported by parents and observed parent behavior. This could provide more insight into the question of the relation between parental cognition and parenting behavior, in other words, to what extent parents behave on the basis of how they feel about themselves as a parent. The recent review by Wittkowski et al. on the effect of group-based parenting intervention on PSE [69] also concluded that further research into the mechanisms of change is needed to clarify if PSE impacts on child behavior because of the impact on particular parenting behaviors, an increase in consistency, or a greater perceived ability to manage problem behaviors.

It could be interesting to measure parents' adherence to treatment [77] as well to control for the extent to which parents implemented what was discussed in group sessions and how this affected the program's effectiveness.

Also, extra assessments during the intervention, in addition to baseline, post-test, and follow-up, would increase the understanding of the change mechanisms at stake [70]. In this study, no mediation analysis was carried out between parents' PSE improvement, parenting behavior, and children's EB because this was not covered by the research questions. The main issue at stake here was to evaluate the direct effects of PSE on child behavior. This question was justified by the existing literature on

parenting programs and on the role of PSE in child development, but it would be interesting to explore the mechanisms explaining the change in children's EB thanks to improved PSE. These mechanisms might be complex and go beyond the mediational role of parenting behavior observed in the present study. It has been demonstrated by Roskam et al. [78] that enhancing a specific parenting variable could impact other parenting constructs through widespread effects. This may be particularly true for a cognitive variable, such as PSE, which may have implications for many internal and implicit beliefs that are linked to various parenting covariates.

Despite these shortcomings, this study contributes to the field of parenting research by implementing previous experimental results into an innovative program for clinical EB and at-risk children. It provides strong arguments demonstrating two facts. First, targeted programs are effective, and, second, self-efficacy is a relevant parenting variable, necessary and sufficient in some cases, that should be targeted and manipulated in parenting interventions for preschoolers' behavior.

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