

Effects of parent and child characteristics on participation and outcome of an individualized booster parent intervention for children with externalizing behaviour

Sabine Stoltz, Monique van Londen & Maja Deković

To cite this article: Sabine Stoltz, Monique van Londen & Maja Deković (2015) Effects of parent and child characteristics on participation and outcome of an individualized booster parent intervention for children with externalizing behaviour, European Journal of Developmental Psychology, 12:4, 395-411, DOI: [10.1080/17405629.2015.1018172](https://doi.org/10.1080/17405629.2015.1018172)

To link to this article: <http://dx.doi.org/10.1080/17405629.2015.1018172>



Published online: 16 Mar 2015.



Submit your article to this journal [↗](#)



Article views: 81



View related articles [↗](#)



View Crossmark data [↗](#)

Effects of parent and child characteristics on participation and outcome of an individualized booster parent intervention for children with externalizing behaviour

Sabine Stoltz¹, Monique van Londen², and Maja Deković²

¹Behavioural Science Institute, Radboud University, Nijmegen, the Netherlands

²Utrecht University, Utrecht, the Netherlands

In this study, we examined whether a booster parent training, offered after a cognitive behavioural child intervention, is effective in reduction of aggressive behaviour and changes in parenting. A second aim was to identify parent and child characteristics that influence parental participation. Children (73% boys, 40% immigrants, mean age = 10.1 (.53)) were randomly assigned to the child ($n = 97$ children) or child and parent intervention ($n = 94$ children) condition. Results of both intention-to-treat and completers only analyses indicated no extra effects of the parent intervention for the total group. Parents who participated (47%) did not differ from non-participants in demographic characteristics. However, mother's perceived level of child's aggression at the end of the child intervention was of significant meaning for the decision to participate in the parent intervention. Participation seemed to interrupt the development of more aggressive behaviour and less appropriate parenting skills for those children in highest need and resulted in increased maternal involvement.

Keywords: Parent intervention; Externalizing behaviour; Booster.

Parenting interventions have repeatedly shown to be the most effective interventions for reducing externalizing behaviour problems in children (McCart, Priester, Davies, & Azen, 2006). Especially for younger children, who have not fully developed social cognitive skills yet and who are more dependent on their parents, parent trainings seem to be more beneficial ($ES = .47$) than child interventions ($ES = .35$; McCart et al., 2006). Moreover, many studies have

Correspondence should be addressed to Sabine Stoltz, Behavioral Science Institute, Radboud University, P.O. Box 9104, 6500 HE Nijmegen, the Netherlands. Email: S.stoltz@psych.ru.nl

No potential conflict of interest was reported by the authors.

shown that maladaptive parenting, such as harsh, rejecting and inconsistent parenting, is both concurrently and longitudinally related to externalizing behaviour in children (Loeber & Farrington, 2000). It is then not surprising that interventions that (also) focus on changing parenting are effective: Positive changes in maladaptive parenting behaviour can lead to positive changes in child behaviour (Patterson, DeGarmo, & Forgatch, 2004).

There are numerous examples of effective parenting programmes (e.g., Incredible Years; Webster-Stratton, 2006; Parent Management Training; Kazdin, 2005), and the main goal of these programmes is to change child's problem behaviour by improving parenting skills. In some programmes, the child participates in the intervention as well (e.g., PCIT) or there are separate modules for the child (e.g., Incredible Years), whereas other programmes work with parents only. From a meta-analysis (Lundahl, Risser, & Lovejoy, 2006) it appeared, however, that combining child and parent treatment components at the same time is less beneficial. Including a child component to a parent intervention (or vice versa) actually may undermine positive outcomes, because parents may feel less responsible for change when their children also receive individual help at the same time (Lundahl et al., 2006). Therefore, offering a parent intervention after a child intervention might be more beneficial.

Although we know that parent trainings can be more effective in changing child behaviour than child behavioural interventions (McCart et al., 2006), poor treatment attendance and adherence often limit successful results (Nock & Kazdin, 2005). It appears challenging to motivate parents of children with externalizing behaviour to attend and to participate in a meaningful way in parent interventions (Dumas, Moreland, Gitter, Pearl, & Nordstrom, 2008) and dropout rates are often high (28–50%; Reyno & McGrath, 2006). The reasons for this might be, first, that those parents who are in the highest need of an intervention, because of having children with most severe problems, often have already received lots of help that did not work in the past and became suspicious of outside agencies (Scott et al., 2010). Second, it is hard to motivate parents for *preventive* interventions, for their children who are not diagnosed with a behavioural disorder yet (Nix, Bierman, & McMahon, 2009). Knowledge about characteristics of parents and children that influence participation in parent interventions can perhaps lead to better selection of participants, or to adaptations of interventions, which in turn can result in higher participation rates.

In this study, we evaluated the effectiveness of [intervention] (Stay Cool Kids Parent Program), which is an indicated preventive parent intervention for children with externalizing behaviour. To increase parental participation, this programme was offered following an individual cognitive-behavioural child intervention. This child intervention was found to be effective in reducing child's aggressive behaviour according to children, teachers and parents and resulted in clinically relevant changes in externalizing behaviour (Stoltz et al., 2013a). Few

studies tested the *additional* value of a parent training *after* a child intervention (McCart et al., 2006). Most multi-component interventions that include a child and parent intervention are offered at the same time, which may lead to less positive outcomes as described earlier: “including children in their own therapy process may change how parents view parent training. Rather than seeing themselves as the primary agent of change, parents may reason that because individual counseling is being offered to their child, it is their child who owns the problem and is, therefore, primarily responsible for change” (Lundahl et al., 2006; p. 99). When the parent training is offered when the child training is finished, it might be that parents feel responsibility as it is “their turn” now to work on their child’s behaviour problems.

It can be expected that an additional parent intervention, offered after termination of the child intervention, can function as a “booster intervention” (Tolan, Gorman-Smith, Henry, & Schoeny, 2009) to maintain or enhance effects achieved by the end of the child intervention (Tolan, 2014). However, few studies exist on the effects of booster interventions for children with externalizing behaviour (Lochman et al., 2014). The “working principle” of booster sessions is that these sessions typically cover the main content of the original and formally conducted intervention. By repetition of new, but still fragile skills and by positive reinforcement, booster interventions are expected to enhance retention and memory of intervention principles (Lochman et al., 2014). It has been suggested that children with externalizing behaviour, in particular, could benefit from a booster intervention. Changes in their behaviour tend to be less stable, because the children stay in the same environmental settings that may have contributed to their behaviour problems (peers, neighborhood). However, Lochman et al. (2014) did not find any effects of a child-oriented booster intervention. They suggest (p. 377) “that booster interventions for externalizing problems may be more effective if they are family-oriented”. Positive reinforcement by parents during a booster may play a pivotal role in maintenance of child’s newly learned behaviour. Because of the dependence of school-aged children on their parents and their need for support and control (McCart et al., 2006), a booster parent intervention may be more effective than a booster child intervention. Therefore, we expect that children whose parents will follow the parent booster intervention will show an even larger reduction in aggressive behaviour, because of further training of learned skills and improved parenting skills.

The second aim of this study was to gain insight in characteristics (e.g., ethnic background, education level, civil status, age, number of children in family, and perceived level of child problem behaviour) of parents who decide to participate and those who refuse to participate in the parent intervention. It has been suggested that refusal to participate in parent programmes is particularly the case for ethnic minority families and lower socioeconomic status (SES) parents (Cunningham et al., 2000; Leijten, Raaijmakers, Orobio de Castro, & Matthys,

2013). More recently, poor attendance has been associated with a greater number of stressful life events and low social support (Minney, Lochman, & Guadagno, 2014). Moreover, a meta-analysis on predictors of parent training efficacy for child externalizing behaviour problems (Reyno & McGrath, 2006) found single-parent status, low family income, low education, young maternal age and negative life events as predictors of dropout. However, effect sizes of these predictors were in the small or insubstantial range. Therefore, further studies on predictors of dropout are needed.

Moreover, the intervention evaluated in this study is a telephone or email-assisted *individualized* intervention, especially developed to also target ethnic minority groups. Using minimal intervention parent training methods, we expect to increase motivation and positive outcomes (Scogin, Bynym, Stephens, & Calhoun, 1990). From a meta-analysis, it can be expected that short-term interventions with a narrow focus may be most effective (Bakermans, van IJzendoorn, & Juffer, 2003).

Finally, the Council of Europe (2006) recommended a focus on the development of positive parent–child relationships to optimize child’s development and well-being. It advises to support especially those parents and children at psychosocial risk, and therefore recommend parenting programmes to be available to all parents (Committee of Ministers of the Council of Europe, 2006). In a special issue on parenting programmes in the *European Journal of Developmental Psychology* (2012), it was concluded that effectiveness of many programmes in use to date is not evaluated. With this study, we aim to provide more insight in effects of a European parent intervention following a child intervention and in characteristics of parents who participated in this intervention.

METHOD

Design

This study was a follow-up of a randomized controlled trial (RCT) to the effectiveness of a child intervention for externalizing behaviour (Stoltz et al., 2013a). In this RCT, 48 elementary schools (i.e., fourth grade) in the Netherlands were randomly assigned to one of three groups: child intervention condition, child and parent intervention condition, or control condition.

In the present study, in contrast to our previous reports (Stoltz et al., 2012, 2013a; Stoltz, van Londen, Deković, de Castro, & Prinzie, 2013b), where we included both intervention and control groups, we *only include the two intervention groups*, because we aimed to study the *additional* effects of a parent booster intervention after a child intervention. There were three assessment periods: prior to the beginning of the child intervention (T1), at child intervention

termination and before the start of the parent intervention (T2), and at a year follow-up (T3) (see [Figure 1](#)). This study was approved by the Central Committee on Research Involving Human Subjects.

Procedure

First, parents of all children in fourth grade received an information letter about the study and a consent form to give permission. Then teachers nominated children from their classes with elevated externalizing behaviour and filled out the Teacher Report Form (TRF; age 6–18; Achenbach, 1991). Next, researchers selected children based on a *t*-score > 60, indicating a (sub) clinical level of externalizing behaviour. If a child was selected, primary caretakers were contacted by phone to gather their informed consent. Children's measures were collected in their school settings and were administered to children by trained research assistants. Parents received questionnaires by email.

Participants

Researchers selected 194 children for participation in the intervention condition: 99 children received the child intervention, 95 children received the child intervention and their parents agreed to receive a parent intervention after child intervention termination. In total, three children discontinued the intervention condition (see [Figure 1](#)). The final sample consisted of 191 children (71% boys; 40 % immigrants, see [Table 2](#)). A child was considered “immigrant” if either the child or one of the parents was born in another country than the Netherlands.

At T2, all children who completed the intervention filled out the questionnaires ($n = 191$), at T3 19 children did not complete the questionnaire. For 24 children, teachers did not complete the questionnaire at T2 and T3. For mothers (T1 $n = 47$, T2 $n = 66$, T3 $n = 87$) there was a larger proportion of missing data at all three measurements (24–45%). Attrition analyses were done with the sample with complete data at all time points for all informants and the sample with incomplete data (lost to follow-up, mainly mother-reports) on the most important demographic variables (see [Table 1](#)). The sample of participants with incomplete data consisted of less Dutch participants and more “immigrant” participants, compared to the sample with complete data ($\chi^2(1, 191) = 10.08$, $p < .01$). There were no other significant differences between the two samples. Multiple imputation is currently recommended as most efficient data-handling technique, although missings are not completely at random (Baraldi & Enders, 2010).

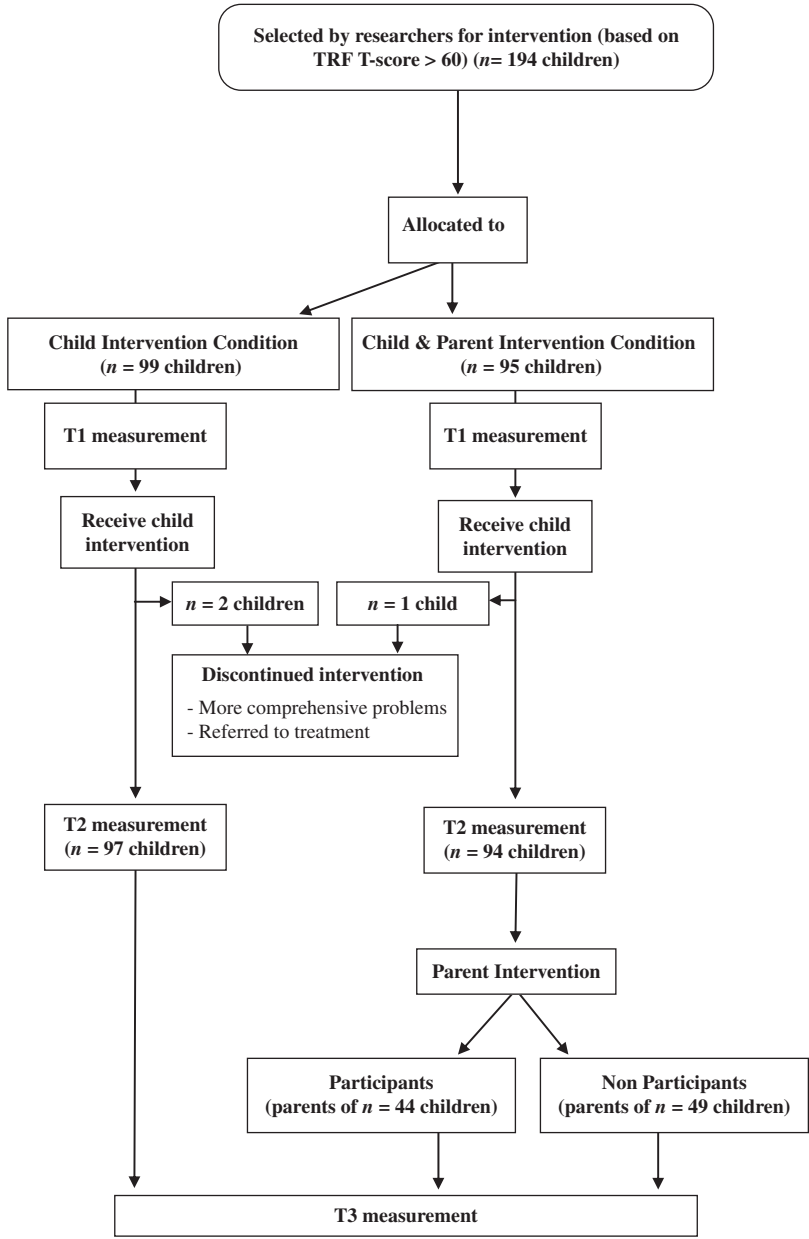


Figure 1. Flow chart.

TABLE 1
Baseline characteristics of all participants (attrition analyses)

	<i>Complete sample (N = 104)</i>	<i>Incomplete sample (N = 87)</i>
Number of children	2.45 (1.17)	2.65 (1.32)
Age of children	10.00 (.53)	10.08 (.61)
Condition	Child intervention: 53% Child + parent intervention: 47%	Child intervention: 48% Child + parent intervention: 52%
Ethnicity	Dutch: 71% Other: 29%	Dutch: 48% Other: 52%
Gender	Male: 76% Female: 24%	Male: 70% Female: 30%

TABLE 2
Sample characteristics by condition

<i>Sample characteristics</i>	<i>Child intervention (n = 97) Mean (SD)</i>	<i>Child and parent intervention (n = 94) Mean (SD)</i>
Child		
Gender (% boys)	80%	66%
Ethnicity (% immigrant)	41%	38%
Age (years)	10.1 (.56)	10.0 (.49)
Parent		
Age (years)		
Mother	41.4 (4.14)	40.8 (4.35)
Father	44.3 (4.54)	42.8 (5.19)
Civil status (%)		
Married	80%	74%
Living together	6%	9%
Divorced	13%	17%
Education (%)		
Primary (or less)	9%	12%
Secondary	31%	25%
– Intermediate vocational	42%	28%
– Higher vocational	10%	18%
University	8%	16%
Number of children in family (n)	2.61 (1.02)	2.40 (.99)

Intervention

The child training is a social cognitive intervention designed to reduce aggressive behaviour in highly aggressive children at elementary schools and consists of eight individual sessions of 45 min at school. The training consists of two phases. First, trainers investigate child's specific needs and competences.

To do so, the first session starts with a general introduction. Next, trainers are able to choose two from six exercises that were best suited for the individual child, for the second and third sessions. After the third session, an individual analysis of child's competences is made, and discussed with parents and teachers during a midterm evaluation, resulting in an individual intervention plan. For the intervention plan, trainers choose five from nine programme components that are most appropriate for the individual child's needs, as described in the trainer manual. Before phase two (session 4–8) starts, a contract with the training programme between trainer and child is signed. Exercises focus on: (1) self-perception, (2) social cognitions, (3) anger management and (4) aggressive behaviour. Parents and teachers receive information after each training session and are asked to practice with the child. For more information, see Stoltz et al. (2013a).

The Parent Intervention is an individually delivered preventive parent training, in style (similar pictures, exercises, terminology) with the child intervention. During the last evaluation of the child intervention, parents are invited by the trainer to take over their coaching role while being supervised by this same trainer. The aim of the parent intervention is twofold: (1) to stimulate parents to coach their child and consolidate and generalize the positive change in the child's behaviour at school, and (2) to improve parenting skills that affect parent–child interactions to stimulate positive child behaviour at home and in other contexts. The intervention is tailor made and adapted to specific needs of the parents in relation to their child's behaviour. Parents receive a manual with information and coaching exercises based on the child-oriented intervention as well as parenting skills exercises (e.g., giving compliments, rules at home, listening to your child) on these topics together with a DVD with positive-staged examples of these parenting skills. Additionally, trainers have weekly contact with the parents by email or telephone (3–8 sessions). Trainers and parents decide together—based on a competence analysis of their own parenting strengths and wishes—on which parenting skills they will focus in the training, for example positive reinforcement and the use of praise and tokens, extinction and ignoring, rule-setting, positive problem solving, communication and involvement.

Measures

Aggressive behaviour. Reactive aggression and proactive aggression according to teachers were measured with the Teacher Rating of Aggression (TRA; Dodge & Coie, 1987). Items for both reactive aggression ($n = 3$) and proactive aggression ($n = 3$) were rated on a five-point scale (1 = never to 5 = always). Mothers and children also reported on child's reactive and proactive aggression, with adapted versions of the TRA. Cronbach's alphas (range over 3 time points) were as follows. For teachers: reactive .85–.89; proactive .86–.87;

children: reactive .56–.79; proactive .70–.83, and mothers: reactive .71–.79; proactive .75–.80.

Parenting behaviour

Maternal involvement. The Alabama Parenting Questionnaire (APQ; Elgar, Waschbusch, Dadds, & Sigvaldason, 2007) was used to measure maternal involvement (10 items, Cronbach's alpha .70–.76). On a five-point rating-scale (1 = *never* to 5 = *always*) mothers were asked how much they agreed with statements.

Positive parenting. This was measured with another scale of the APQ (Elgar et al., 2007). Mothers had to indicate (seven items) on a five-point scale to which extent each of the items applied to them (Cronbach's alpha .77–.82).

Inconsistent discipline. Mothers were asked to report about their discipline (APQ subscale, Elgar et al., 2007, Cronbach's alpha .63–.64).

Overreactivity. The Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993) was included to assess overreactive parenting using a seven-point Likert scale (seven items, Cronbach's alpha .79–.82).

RESULTS

Preliminary analyses

At baseline (T1) there were no differences in outcome measures or demographic characteristics for children in the child intervention condition ($n = 97$) and children in the child and parent intervention condition ($n = 94$), except for child gender. There were significantly more boys in the child intervention condition ($t = 2.33, p < .05$). We controlled for this in analyses.

After the child intervention (T2), no significant differences between the child intervention condition and the child and parent intervention condition were found in difference scores from T1 to T2 (see Table 3) for teacher-reported reactive ($t = -.32, p = .75$) and proactive aggression ($t = 1.15, p = .25$), child-reported reactive ($t = -.30, p = .77$) and proactive aggression ($t = -1.61, p = .11$), and mother-reported reactive ($t = -.05, p = .96$) and proactive aggression ($t = -1.86, p = .07$), involvement ($t = .19, p = .85$), positive parenting ($t = -1.82, p = .07$), inconsistent discipline ($t = -.69, p = .49$) and over-reactivity ($t = -.14, p = .89$).

In a previous study, we found that decreases in aggression from T1 to T2 in both intervention conditions were stronger than those in the control group where

TABLE 3
Means and standard deviations on outcome measures

<i>Measure</i>	<i>Child intervention (n = 97)</i>			<i>Child and parent intervention (n = 94)</i>		
	<i>Time 1 (pre)</i>	<i>Time 2 (post)</i>	<i>Time 3 (fu)</i>	<i>Time 1 (pre)</i>	<i>Time 2 (post)</i>	<i>Time 3 (fu)</i>
Reactive aggression T	3.87 (.90)	3.44 (.82)	2.91 (1.01)	3.81 (.85)	3.34 (.96)	2.99 (1.12)
Proactive aggression T	2.50 (.96)	2.04 (.88)	1.82 (.88)	2.40 (.94)	2.01 (.92)	1.84 (.86)
Reactive aggression C	3.00 (.84)	2.76 (.72)	2.63 (1.05)	3.07 (.88)	2.78 (.81)	2.78 (.96)
Proactive aggression C	1.41 (.64)	1.33 (.45)	1.33 (.77)	1.55 (.73)	1.31 (.49)	1.24 (.53)
Reactive aggression M	2.87 (.73)	2.67 (.75)	2.60 (.63)	2.89 (.75)	2.66 (.70)	2.60 (.70)
Proactive aggression M	1.47 (.50)	1.44 (.46)	1.33 (.30)	1.55 (.55)	1.39 (.38)	1.34 (.35)
Involvement M	3.96 (.48)	4.03 (.47)	3.92 (1.49)	3.95 (.38)	3.98 (.49)	4.02 (.41)
Positive parenting M	4.08 (.47)	4.08 (.54)	4.07 (.53)	4.00 (.52)	4.11 (.52)	4.09 (.48)
Inconsistent discipline M	2.84 (.52)	2.72 (.57)	2.58 (.61)	2.93 (.57)	2.78 (.47)	2.65 (.56)
Overreactivity M	3.10 (.94)	2.80 (.89)	2.53 (.84)	3.14 (1.13)	2.97 (.87)	2.82 (.89)

Note: T, teachers, C, children, M, mothers.

no intervention was offered, as reported by mothers ($d = .25$), teachers ($d = .29$) and children ($d = .22$) (Stoltz et al., 2013a), indicating that the child intervention is effective in reducing aggressive behaviour.

Additional effects parent intervention

First, we conducted intent-to-treat analyses. At T3, analysis of covariances (ANCOVAs), with “condition” (0 = child intervention, 1 = child and parent intervention) as fixed factor and T2 scores as covariate revealed no significant effects for “condition” for child-, teacher- and mother-reported reactive and proactive aggression. In other words, there were no differences in aggressive behaviour for children who received the child training alone and children whose parents were assigned to the additional booster parent intervention. Moreover, no significant effects were found for any of the parenting measures (involvement, positive parenting, inconsistent discipline and overreactivity).

In addition, we conducted completers-only analyses. Using ANCOVAs, we tested effects for “condition” when we included only those parents and children from parents that actually participated in the parent intervention (0 = child intervention, 1 = child and parent intervention completed). Also in completers-only analyses we did not find any significant effects on child-, teacher- and mother-reported aggression. Moreover, using completers-only analyses, we do not see additional value of the parent training in terms of decreases in negative parenting or increases in positive parenting.

Characteristics of completers versus non-participants

To address the second aim of this study, gain insight in differences between characteristics of parents who completed the parent intervention versus parents who did not participate, we focused on the child and parent intervention group ($n = 94$ children) only. We examined differences between participants in the parent intervention and non-participants at T2 (before the start of the parent intervention), at T3 (after parent intervention) using *t*-tests.

Although parents of 94 children were assigned to the parent intervention condition, only 44 parents (47%) actually participated with a mean of an additional 2.8 (SD = 2.44) contact moments with their trainer (47% email, 33% telephone, 20% face to face). There were no differences in any of the parent (age, civil status, education, ethnicity, number of children in family) and child (gender and age) demographic characteristics at T2 between completers and non-participants. However, a variable that was related to participation in the parent intervention is mothers' perception of aggression of the child, after the child intervention and before the start of the parent intervention (T2, see Table 4). Mothers who decided to participate in the parent intervention perceived higher levels of reactive aggression ($t = 3.44$, $p < .01$) and proactive aggression

TABLE 4
Means and standard deviations of completers and non-participants

<i>Measure</i>	<i>Completers (n = 44)</i>			<i>Non participants (n = 50)</i>		
	<i>Time 1 (pre)</i>	<i>Time 2 (post)</i>	<i>Time 3 (fu)</i>	<i>Time 1 (pre)</i>	<i>Time 2 (post)</i>	<i>Time 3 (fu)</i>
Reactive aggression T	3.89 (.82)	3.41 (.93)	2.95 (.93)	3.74 (.88)	3.28 (.98)	3.01 (1.29)
Proactive aggression T	2.52 (.90)	2.03 (.84)	1.87 (.79)	2.29 (.97)	2.00 (.99)	1.81 (.92)
Reactive aggression C	2.91 (.78)	2.69 (.74)	2.79 (.90)	3.23 (.94)	2.86 (.86)	2.78 (1.02)
Proactive aggression C	1.44 (.59)	1.24 (.40)	1.22 (.50)	1.66 (.84)	1.36 (.56)	1.26 (.56)
Reactive aggression M	3.03 (.75)	2.91 (.71)	2.61 (.64)	2.75 (.72)	2.43 (.62)	2.51 (.65)
Proactive Aggression M	1.56 (.57)	1.47 (.42)	1.30 (.25)	1.54 (.54)	1.32 (.32)	1.31 (.27)
Involvement M	3.96 (.37)	3.90 (.49)	4.13 (.31)	3.95 (.40)	4.07 (.48)	3.89 (.50)
Positive parenting M	3.97 (.58)	3.96 (.53)	4.12 (.50)	4.03 (.47)	4.28 (.45)	4.05 (.47)
Inconsistent Discipline M	3.03 (.39)	2.88 (.41)	2.68 (.51)	2.82 (.69)	2.66 (.51)	2.60 (.63)
Overreactivity M	3.31 (1.03)	3.14 (.71)	2.83 (.82)	2.97 (1.22)	2.78 (.99)	2.91 (1.00)

Notes. T, teachers; C, children; M, mothers

compared to mothers who decided *not* to participate ($t = 2.00, p < .05$). Moreover, participating mothers reported more use of inconsistent discipline ($t = 2.28, p < .05$) and less use of positive parenting ($t = -2.51, p < .05$) at T2, before the start of the parent intervention. No differences on other outcome measures were found at T2 between completers and non-participants in the parent intervention.

At T3, a year after child intervention termination, there were no differences anymore on any outcome measure between parents who participated in the parent intervention and parents who did not participate, except for maternal involvement. After the parent intervention, completers of the intervention reported higher levels of maternal involvement than non-participants ($t = 2.66, p < .05$). Moreover, the initial higher level of perceived aggression at T2 for the completers decreased to comparable levels of the non-participants at T3.

DISCUSSION

The aim of this study was to examine additional efficacy of a preventive individualized booster parent intervention, following an effective child intervention for children with elevated levels of externalizing behaviour. This study is one of the few to test additional effects of a preventive booster parent intervention using an RCT design, with randomization prior to the initial child intervention (Woolcock, 2009). Booster parent interventions can have different intentions: to maintain or enhance effects achieved by the (child) intervention (Tolan et al., 2009), or as a limited contact to “manage exceptional challenges, greater risk of some participants, or anticipatable threats to maintaining gains” (p. 399, Tolan, 2014). Results of the present study indicated no *extra* effects of the booster parent intervention. However, the booster intervention may have prevented the development of more serious aggressive behaviour problems and less competent parenting skills for those mothers who completed the parent intervention; they started off with a higher level of child problem behaviour and inadequate parenting quality. Because of high dropout rates, few mothers actually participated in the parent training. Therefore, the second aim of this study was to identify characteristics of parents and children that influenced participation.

Previous studies suggest that high dropout rates in parent interventions are associated with specific characteristics, such as low SES and maternal mental health (Leijten et al., 2013; Reyno & McGrath, 2006). However, effect sizes of these predictors are in the small or insubstantial range, which means that the influence of demographical or child or parent psychological/behavioural factors on dropout is only limited (Reyno & McGrath, 2006). More recently, it has been found that socioeconomic variables, maternal health and marital status do not predict attendance in parent interventions in samples that are not clinic-referred and treatment-seeking (Minney et al., 2014). In the present study, with no

treatment-seeking sample, we did not find any differences between participants and non-participants in demographic characteristics, such as civil status, education, number of children in a family, gender, age or ethnic background. Perhaps providers were, because of the individualized format of the parent intervention, able to adapt to personal needs of participants. For example, equal participation for ethnic minority and majority families in the parent intervention could indicate that providers were able to adapt to cultural values (Wells, Klap, Koike, & Sherbourne, 2001).

However, what seems to be more important for the decision to participate in the parent intervention is mothers' perception of child's behaviour and her own parenting skills at the end of the child intervention. Mothers who decided to participate in the parent intervention perceived higher levels of aggression in their children and perceived their own parenting skills as less positive. These findings may indicate that these mothers are, based on their perceptions of aggression and parenting, in highest need of an intervention. Previous studies on treatment dropout show that the most severely impaired families most often drop out (Lochman, Boxmeyer, Powell, Roth, & Windle, 2006). In contrast, in this study we found that higher levels of *self-perceived* problems in the family can motivate parents to participate in a parent intervention. This contributes to our relatively limited knowledge on predictors of dropout and attendance in targeted prevention parenting programmes (Minney et al., 2014). Although actual participation in the parent training did not result in less aggressive behaviour or more competent parenting behaviour compared to non-participants, it is possible that the parent intervention interrupted the development of even more aggressive behaviour and even less competent parenting skills. At a year follow-up, mothers who participated in the parent intervention reported significantly higher levels of involvement with their child compared to non-participants. Besides effects of the parent intervention, parenting behaviour might have changed as a result of changed child behaviour in the child intervention (Patterson, 1982). This might explain why many parenting behaviour aspects do not differ between parents who received the parent intervention versus parents who did not, but why for all parents a pattern of findings with a decrease in negative and an increase in positive parenting is visible.

It is important to realize that mothers in the current preventive intervention, in contrast to many other treatment interventions, did not initiate referral for intervention. Teachers selected children based on elevated levels of externalizing behaviour. In a previous study, we found significant discrepancies in the reported levels of problem behaviour between teachers and parents, with teachers reporting more aggressive behaviour (Stoltz, van Londen, Deković, de Castro, & Prinzie, 2008). This is also visible in the result section (Table 3): teachers reported higher scores on aggression before the start of the child intervention compared to children and mothers. This may explain why a large portion of the mothers decided not to participate: they do not recognize the behaviour problems

of their child and see no reason for intervention (Minney et al., 2014). In the present study, we found that participants of the parent intervention were those mothers who reported higher levels of behaviour problems and perhaps expected benefits of the parent programme. Possibly the positive experience of the intensive individual contact with the trainer during the child intervention motivated these mothers to actually take up their turn as a coach for their child, supervised by this trainer.

Although this study is one of the few studies that examined additional effects of a “booster” parent intervention after a successful individual child intervention for externalizing behaviour, including a sample with a large proportion of lower SES and ethnic minority families, some limitations are noteworthy. First, many family and parent factors may influence treatment participation. Therefore, a broader range of parent characteristics, such as psychopathology and other potential causes of impairment, should be included in future studies of parent treatment participation. Second, future studies would benefit from more measures of parenting behaviour or direct observations of parent–child interactions. Finally, in this study, we were not able to include reports from fathers, because of the large proportion missing data. Inclusion of father reports would provide a more comprehensive view.

CONCLUSION

With this individual tailor-made booster parent intervention we were able to reach those parents of children in highest need of an additional intervention. Moreover, we were able to reach a group of immigrant and lower SES parents who were in general less willing to participate in interventions. Results of this study show that it is important to offer these parents a parent training, because this might buffer the development of less competent parenting skills and more serious behaviour problems. In this study, the child intervention probably motivated some parents in need of improving their parenting skills to participate in an intervention to reduce their child’s externalizing behaviour.

Manuscript received 3 June 2014

Revised manuscript accepted 9 February 2015

First published online 13 March 2015

REFERENCES

- Achenbach, T. M. (1991). *Manual for the teacher report form and 1991 profiles*. Burlington, VT: University of Vermont, Department of Psychiatry.
- Arnold, D. S., O’Leary, S. G., Wolff, L. S., & Acker, M. M. (1993). The Parenting Scale: A measure of dysfunctional parenting in discipline situations. *Psychological Assessment*, 5, 137–144.

- Bakermans, M. J., van IJzendoorn, M. H., & Juffer, F. (2003). Less is more: Meta-analysis of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, 129, 194–215.
- Baraldi, A. N., & Enders, C. K. (2010). An introduction to modern missing data analyses. *Journal of School Psychology*, 48, 5–37.
- Committee of Ministers of the Council of Europe. (December, 2006). *Recommendation on policy to support positive parenting*. Council of Europe.
- Cunningham, C. E., Boyle, M., Offord, D., Racine, Y., Hundert, J., Secord, M., & McDonald, J. (2000). Tri-ministry study: Correlates of school-based parenting course utilization. *Journal of Consulting and Clinical Psychology*, 68, 928–933.
- Dodge, K. A., & Coie, J. D. (1987). Social information processing factors in reactive and proactive aggression in children's peer groups. *Journal of Personality and Social Psychology*, 53, 1146–1158.
- Dumas, J. E., Moreland, A. D., Gitter, A. H., Pearl, A. M., & Nordstrom, A. H. (2008). Engaging parents in preventative parenting groups: Do ethnic, socio-economic, and belief match between parents and group leaders matter? *Health Education & Behaviour*, 35, 619–633.
- Elgar, F., Waschbusch, D., Dadds, M., & Sigvaldason, N. (2007). Development and validation of a short form of the Alabama Parenting Questionnaire. *Journal of Child and Family Studies*, 16, 243–259.
- Kazdin, A. E. (2005). *Parent management training: Treatment for oppositional, aggressive, and antisocial behavior in children and adolescents*. New York, NY: Oxford University Press.
- Leijten, P., Raaijmakers, M. A. J., Orobio de Castro, B., & Matthys, W. (2013). Does socioeconomic status matter? A meta-analysis on parent training effectiveness for disruptive child behavior. *Journal of Clinical Child and Adolescent Psychology*, 42, 384–392.
- Lochman, J. E., Baden, R. W., Boxmeyer, C. L., Powell, N. P., Lixin, Q., Slaekin, K. L., & Windle, M. (2014). Does a booster intervention augment the preventive effects of an abbreviated version of the Coping Power Program for aggressive children? *Journal of Abnormal Child Psychology*, 42, 367–381.
- Lochman, J. E., Boxmeyer, C., Powell, N., Roth, D. L., & Windle, M. (2006). Masked intervention effects: Analytic methods for addressing low dosage of intervention. *New Directions for Evaluation*, 2006, 19–32.
- Loeber, R., & Farrington, D. P. (2000). Young children who commit crime: Epidemiology, developmental origins, risk factors, early interventions, and policy implications. *Development and Psychopathology*, 12, 737–762.
- Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: Moderators and follow-up effects. *Clinical Psychology Review*, 26, 86–104.
- McCart, M. R., Priester, P. E., Davies, W. B., & Azen, R. (2006). Differential effectiveness of behavioral parent training and cognitive-behavioral therapy for antisocial youth: A meta-analysis. *Journal of Abnormal Child Psychology*, 34, 527–543.
- Minney, J. A., Lochman, J. E., & Guadagno, R. E. (2014). Searching for solutions: Applying a novel person-centered analysis to the problem of dropping out of preventive parent education. *Prevention Science*. doi:10.1007/s11121-014-0526-7.
- Nix, R. L., Bierman, K. L., McMahon, R. J., & The Conduct Problems Prevention Research Group (2009). How attendance and quality of participation affect treatment response to parent management training. *Journal of Consulting and Clinical Psychology*, 77, 429–438.
- Nock, M. K., & Kazdin, A. E. (2005). Randomized controlled trial of a brief intervention for increasing participation in parent management training. *Journal of Consulting and Clinical Psychology*, 73, 872–879.
- Patterson, G. R. (1982). *A social learning approach: Vol. 3: Coercive family process*. Eugene, OR: Castalia.

- Patterson, G. R., DeGarmo, D. S., & Forgatch, M. S. (2004). Systematic changes in families following prevention trials. *Journal of Abnormal Psychology, 32*, 621–633.
- Reyno, S. M., & McGrath, P. J. (2006). Predictors of parent training efficacy for child externalizing behavior problems: A meta-analytic review. *Journal of Child Psychology and Psychiatry, 47*, 99–111.
- Scogin, F., Bynym, J., Stephens, G., & Calhoon, S. (1990). Efficacy of self-administered treatment programs: Meta-analytic review. *Professional Psychological Research Practices, 21*, 42–47.
- Scott, S., O'Connor, T. G., Futh, A., Matias, C., Price, J., & Doolan, M. (2010). Impact of a parenting program in a high-risk, multi-ethnic community: The PALS trial. *Journal of Child Psychology and Psychiatry, 5*, 1331–1351.
- Stoltz, S., Prinzie, P., de Haan, A. D., van Londen, M., de Castro, B. O., & Deković, M. (2012). Child personality as moderator of outcome in a school-based intervention for preventing externalising behaviour. *European Journal of Personality, 27*, 271–279.
- Stoltz, S., van Londen, M., Deković, M., de Castro, B. O., & Prinzie, P. (2008). Selection of children for the preventive intervention Alles Kizzz. Differences and similarities between parents, teachers and children as informants on externalizing problems. Poster presented at conference of International School Psychology Association (ISPA). Utrecht, The Netherlands.
- Stoltz, S., van Londen, M., Deković, M., de Castro, B. O., Prinzie, P., & Lochman, J. E. (2013a). Effectiveness of an individual school-based intervention for children with aggressive behavior: A randomized controlled trial. *Behavioural and Cognitive Psychotherapy, 41*, 525–548.
- Stoltz, S., van Londen, M., Deković, M., de Castro, B. O., & Prinzie, P. (2013b). What works for whom, how and under what circumstances? Testing moderated mediation of intervention effects on externalizing behavior in children. *Social Development, 22*, 406–425.
- Tolan, P. H. (2014). More than afterthoughts and details: Maintenance and booster effects as critical elements of intervention research. *Journal of Abnormal Child Psychology, 42*, 399–402.
- Tolan, P. H., Gorman-Smith, D., Henry, D., & Schoeny, M. (2009). The benefits of booster interventions: Evidence from a family-focused prevention program. *Prevention Science, 10*, 287–297.
- Webster-Stratton, C. (2006). *The Incredible Years: A trouble-shooting guide for parents of children aged 3–8*. Seattle, WA: Incredible Years.
- Wells, K., Klap, R., Koike, A., & Sherbourne, C. (2001). Ethnic disparities in unmet need for alcoholism, drug abuse, and mental health care. *American Journal of Psychiatry, 158*, 2027–2032.
- Woolcock, M. (2009). Toward a plurality of methods in project evaluation: A contextualized approach to understanding impact trajectories and efficacy. *Journal of Development Effectiveness, 1*(1), 1–14.