

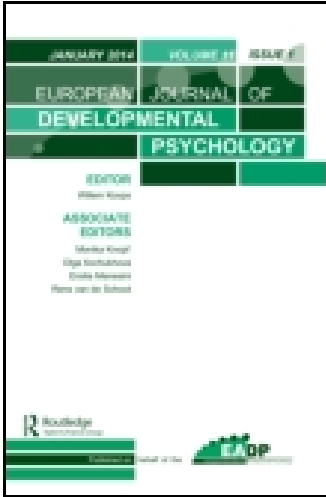
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### “I want to behave prosocially and I can choose to do so” : Effectiveness of TIGER (Kanjertraining) in 8- to 11-year- olds

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## “I want to behave prosocially and I can choose to do so”: Effectiveness of TIGER (Kanjertaining) in 8- to 11-year-olds

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This study examined whether TIGER (“Kanjertaining” in the Netherlands) reduces psychosocial problems in eight- to eleven-year-olds in a mental health-care setting. TIGER is a cognitive behavioural intervention in the peer group, with an additional parent component. Characterizing features include the emphasis on affirming children’s prosocial intentions and feelings of responsibility for their own behaviour. To study effectiveness in routine daily practice, a quasi-experimental design with 185 intervention and 39 waiting list control children was used. Results indicated that TIGER significantly reduced externalizing and internalizing problems. Children with clinical-level internalizing problems at pretest benefited more from TIGER than children with subclinical or nonclinical internalizing problems. Effect sizes (between .33 and .46) were in the small to medium range and comparable to behavioural parent-training and cognitive-behavioural therapy. Future interesting topics to study are the long-term effects of TIGER and mechanisms of change.

**Keywords:** Intervention; Psychosocial problems; Effectiveness; Responsibility; Intention.

Behavioural and emotional problems at an early age are important predictors of depression, delinquency, school dropout and psychological disorders later in life (Romeo, Knapp, & Scott, 2006). Thus, reducing these problems at an early age

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Conflict of Interest: Lilian Vliek works as a psychologist for the Institute for Kanjertraining. Therefore, she has a conflict of interest. She delivers the TIGER intervention to teachers and did not give the training currently assessed.

may prevent problems in the future (Van Lier, 2002). Although an increasing number of indicated prevention programmes for children have demonstrated efficacy, the effect sizes are generally found to be modest (Wilson & Lipsey, 2007). Moreover, the modest estimates of effect sizes may be too positive, as most programmes have been tested for efficacy in research trials only, and comparatively few have been tested for effectiveness in the real-world conditions in which they will eventually be used. In a meta-analysis, only 32 of the 249 included studies concerned effectiveness of routine practice (Wilson & Lipsey, 2007). Studies on effectiveness trials generally deliver less favourable results than studies on efficacy trials (e.g., Van der Lem, Van der Wee, Van Veen, & Zitman, 2012). Moreover, it is important to test the effectiveness of programmes that are already used on a large scale (Dodge, 2011). TIGER is such a programme.

This study aims to test the effectiveness of TIGER (“Kanjertaining” in the Netherlands; Institute for Kanjertraining, 2007), a widely-implemented training programme in the Netherlands including both established evidence-based effective elements (i.e., cognitive behavioural strategies, parent involvement, group training) and two additional characterizing elements: activating children’s latent intentions to behave prosocially and making children aware of their responsibility for their own behaviour. In addition, we aimed to test possible moderating effects of gender, age and severity of psychosocial problems at pretest. These aims are relevant to research and practice. Effect sizes provide an indication of the fruitfulness of the combination of intervention elements of TIGER. Because this study was conducted under real-world conditions and because TIGER is widely implemented in 30 mental healthcare centres throughout the Netherlands, results can be generalized to daily practice.

Previous research has shown that cognitive behavioural techniques can effectively reduce behavioural and emotional problems (see Brosnan & Carr, 2000; Sukhodolsky, Kassinove, & Gorman, 2003). Training children in peer groups (Salmivalli, 1999) and involving parents and the school environment are also found to be effective strategies (Greenberg, Domitrovich, & Bumbarger, 2001). Specific effective elements of cognitive behavioural training include modelling, role-play, giving feedback, and assigning homework (Sukhodolsky et al., 2003). In a recent meta-analysis (Carr, 2009), the combination of behavioural parent training with child training was found to reduce behaviour problems. Effective strategies of behavioural parent training were helping parents develop skills to encourage children’s prosocial behaviour (through attending, reinforcement and engaging in child-directed interactions) and to discourage antisocial behaviour (through ignoring, the use of time-outs, contingency contracts and engaging in parent-directed interactions). Effective elements in child therapy were training in self-regulation skills, such as managing emotions and social problem solving. TIGER includes all of these effective elements, with two additional elements.

TIGER’s first characterizing feature is its emphasis on the idea that children are intrinsically motivated to show prosocial behaviour. This intrinsic motivation “to do good” has gained status as a potential universal motivational mechanism

underlying adult cooperation (Fehr & Fischbacher, 2003), as has been shown in, for example, capuchin monkeys (De Waal, Leimgruber, & Greenberg, 2008) and human infants (Dunfield & Kuhlmeier, 2010). However, only two studies tested the effectiveness of actively triggering this prosocial inclination in *youths*. The results demonstrated that just making adolescents aware of their own personal values (their prosocial desires) with a brief writing exercise, improved school performance (Cohen, Garcia, Apfel, & Master, 2006) and reduced aggression temporarily (Thomaes, Bushman, Orobio de Castro, Cohen, & Denissen, 2009). In both studies, adolescents completed a 15-minute assignment to reaffirm their sense of self-integrity by seeing themselves as good, virtuous and efficacious.

In a similar fashion, TIGER activates children's intrinsic motivation "to do good". Parents learn to think about and approach children by appealing to the child's own desire to behave prosocially. The trainer models this to parents by being surprised when a child misbehaves and by asking children whether the specific behaviour was in line with the child's intention. Additionally, the children experience the consequences of four types of behaviour in role-plays. Children experience that "Tiger (prosocial) behaviour" has the highest benefit (this behaviour results in social contact, acceptance by others, halting a bully, etc.). The advantage of this approach is that the child's behavioural changes are intrinsically motivated. In the rare cases that a child claims to have negative intentions, the trainer shows disbelief and sets boundaries. "I do not believe that you really want this. If this *is* your intention, I suggest that you stop this now because this is not allowed here." The trainer shows his or her authority, but only after making the child conscious of his desire and responsible for his behavioural decision.

The second element of TIGER is explicitly evoking feelings of responsibility. Rather than attributing one's behaviour to others or to bad circumstances, and rather than seeing problems as something the intervention should solve, TIGER makes the child responsible for its own behaviour (Vliek & Orobio de Castro, 2010). Responsibility is defined here as one's capacity to choose to behave in a certain way. Self-efficacy seems to be a prerequisite for being able to take responsibility for one's behaviour. However, self-efficacy refers specifically to one's own belief of being able to perform (Bandura, 1994), whereas responsibility requires the additional belief that one can personally decide how to behave. Although the role of self-efficacy has been emphasized previously (Bandura, 1994), it has remained underrepresented in interventions for children (for another training programme on responsibility, see Positive Behavior Support: Horner, Sugai, Todd, & Lewis-Palmer, 2005). While some interventions help children develop skills and understand how problems can be solved prosocially, less attention is paid to teaching children to take responsibility for their own choices. We argue that a feeling of responsibility is necessary to control one's behaviour, to work towards more prosocial behaviour, and therefore to change one's behaviour.

TIGER uses a clear visual method to make children aware of their responsibility to choose their own behaviour in social situations. Stories and role-plays are based

on four coloured caps with pictures of animals, each representing a different type of behaviour. Children and parents become aware of, and can easily categorize their own behaviour in, the four caps. Children and parents learn that they can choose to “wear” another cap. The key message is that a child is not destined to have a particular role (or cap, or problem, or diagnosis), but behaves according to one role until he chooses to take on another role. Children and parents learn to give up their feelings of being a victim. The lessons are sequenced so that children gradually learn that they can choose their own behaviour.

In a previous quasi-experimental study (Vliek & Orobio de Castro, 2010), the effectiveness of TIGER was established in a classroom context. Eleven classes designated as problematic by the teacher and/or the head of the school were trained by a psychologist. Parents were actively involved and the teachers were coached. The intervention consisted of an average of 15 training hours. The trained classes were compared to control classes from the same schools. TIGER was found to be effective in reducing self-reported aggression and depressive thoughts and in increasing well-being, self-esteem and relationships with classmates and the teacher. Effect sizes varied between .17 and .37, and varied between .33 and .78 for the 25% of children with the lowest pretest scores (Vliek & Orobio de Castro, 2010).

In following up on this previous work, the main aim of the present study was to examine the effectiveness of TIGER in mental health-care centres in the way it is commonly administered by psychologists. The target population in these centres consists of children with mild to severe problems in social interaction. The training was aimed at decreasing both internalizing and externalizing problems. By studying specific moderators including sex, age and severity of problem behaviours at baseline, we aim to pinpoint which children will profit most from the training.

We expected that both children with internalizing and externalizing problems would benefit from the training. TIGER assumes that children with internalizing and/or externalizing behaviour do not prefer to behave problematically. Therefore, we expected that practising TIGER behaviour, reaffirming their positive desires, and experiencing the consequences of behaviour together with stimulating self-perceived responsibility for their behavioural choices, would lead to a decrease in psychosocial problems. We hypothesized that children with clinical-level problems would show larger reductions in problems, compared with children who had milder, subclinical levels of problems at baseline, as was found in a meta-analysis (Weisz, Sandler, Durlak, & Anton, 2005).

## METHODS

### Procedure

We examined the effectiveness of TIGER with a quasi-experimental design. Children enrolled in the intervention were compared with a waiting list control

group. Families came to the training in the usual way: through information from school advice boards, family doctor advice, adverts in local newspapers or people in their social network. No family doctor reference was necessary. Parents of children aged 8–11 years who entered one of the participating mental health-care centres in the Netherlands between September 2007 and September 2008 were asked to participate in the study. Directly after applying for the training, both parents received a questionnaire at home to fill in and send back (see Measures). After returning the questionnaires, parents were invited for an interview to examine whether the training suited the child. In general, the training was considered suitable when a child experienced internalizing and/or externalizing problems in social interactions and when both the child and the parents were motivated for the training. This procedure was exactly the same as the daily practice of the training without the study. Trainers reported that it was very rare that the training was not considered suitable. An example of a reason was that the child and the parents did not experience problems because they had just finished another training. Since these were only rare cases (less than 1%), there was low chance that this limited the generalizability of the results. Parents gave their written active consent to participate with their child. After the last session, parents were given the same questionnaires again to fill in at home and to send back within a month. Completion took 15–20 minutes. Parents received a report with the results of their child. No other compensation or reward was given. Parents paid for the training as usual.

The control children came to the institutes in the same way as the intervention children. The only difference was that at the time of application, a training had already started or the upcoming training group was full, so parents and children had to wait. Parents of the waiting list control group filled in the questionnaires directly after applying (just like the intervention group). They filled in the same questionnaires again just before the start of their training. Date of entry could not systematically influence the assignment to the control or intervention group because the training started on various dates in each mental health-care centre. Severity of child's problems was no criterion for faster inclusion.

*TIGER content.* TIGER was delivered by trained psychologists with 1–11 years' experience giving this training,  $M = 4.0$  years,  $SD = 2.9$ . All psychologists were originally trained at the Institute for Kanjertraining in Almere, the Netherlands, and all were licensed to give the training. The participating institutes were all private institutes.

TIGER consisted of 10 group sessions of one and a half hours given every two weeks. Training groups held a maximum of 15 children with internalizing and/or externalizing problems. In the first half hour, children and parents were trained together, after which parents and children were trained in separate groups. After each meeting, parents were given background information and homework assignments to practise at home. Sessions followed a detailed protocol. Each session started with rehearsal of exercises of the past lessons. Thereafter, the trainer introduced the theme of the lesson through a story. Children practised with

social skills and made use of the four coloured caps (see introduction) in role-plays. Children discussed social themes and dilemmas. Every session ended with a physical exercise to increase trust. The first three lessons were directed at basic social skills: presenting oneself, eye contact, giving and receiving compliments and expressing one's feelings. In the fourth lesson, children practised reacting to bullying and troublesome situations. Special attention was paid to bystander behaviour: children practised ignoring or walking away from negative behaviour. Themes of the fifth, sixth and seventh lessons were showing interest in one another, trust and friendship respectively. In the seventh and eighth lesson children gave each other feedback: children received suggestions from their peers for behavioural change. The ninth lesson reminded children of the people who love them and taught them that they are worthwhile for those people. "You don't have to be loved by everyone to be worthwhile. Some people don't like you and that is fine." The last session was the diploma ceremony. Parents were made aware of their role as model for their child and practised the same skills as the children. Moreover, a TIGER way of thinking and acting as a parent was taught wherein children's positive intentions are affirmed and children's responsibility is stimulated by reducing psychological control over the child.

## Participants

Parents of 542 children filled in the questionnaire at pretest. Of those, 64.2% filled in the questionnaires at posttest ( $N = 348$  completers). Completers scored significantly lower on total problems, externalizing problems, attention and aggression at pretest than non-completers. The time between the pre- and posttest (pre-posttest interval) was limited to 200 days in the control group, but varied in the intervention group (up to 467 days). To make the groups more comparable, we only selected the children that had pre-posttest intervals between 70 days (minimal duration of the training) and 200 days. This excluded two control children and 122 intervention children. The excluded children scored significantly higher on internalizing and anxious depressed problems at pretest than included children. No significant differences in effect (pre-posttest differences) were found between included and excluded children. The final study sample consisted of 224 children: 185 intervention and 39 control children. The attrition at posttest and the selection of pre-posttest intervals between 70 and 200 days resulted in an overrepresentation in the data of children with less severe externalizing and internalizing problems.

The intervention group consisted of 185 children aged 8 to 11 years,  $M = 9.9$ ,  $SD = 1.2$ , and their parents. The control group consisted of 39 children aged 8 to 11 years,  $M = 9.8$ ,  $SD = 1.1$ , and their parents. The percentage of boys in the intervention and control groups was 54.6% and 64.1%, respectively. Age ( $t(222) = .697$ ) and gender ( $Chi^2(1) = 1.183$ ) composition did not differ between groups. Participants were predominantly Western European and came from urban areas. Social economic status (SES)



did not differ between the intervention ( $M = .59$ ;  $SD = .89$ ) and control group ( $M = .66$ ;  $SD = .60$ ),  $t(222) = -.483$ . On average, participants started the training with subclinical total problems on the Child Behavior Checklist,  $M = 60.52$ ,  $SD = 7.69$ , of which internalizing problems were more prominent,  $M = 62.11$ ,  $SD = 8.37$ , than externalizing problems,  $M = 55.55$ ,  $SD = 9.29$ . Of the 185 intervention children, 38% scored in the clinical range on total problems at pretest, 49% scored clinical on internalizing problems, and 21% on externalizing problems. In the control group these percentages were 36%, 44%, and 18%. These distributions did not significantly differ between the groups (total:  $Chi^2(1) = .052$ ; internalizing:  $Chi^2(1) = .404$ ; externalizing:  $Chi^2(1) = .194$ , all  $p > .05$ ). The mean time between pre- and posttest was longer in the intervention group ( $M = 157$  days,  $SD = 28$ ) than in the control group ( $M = 125$  days,  $SD = 36$ ),  $p < .001$ .

## Measures

Problem behaviour was assessed using the Child Behavior Checklist (CBCL; Achenbach, 1991). The CBCL is a widely used, standardized assessment instrument for psychosocial problems in children aged 6 to 18 years. A study by Ivanova et al. (2007) demonstrated that the CBCL shows remarkable consistency in its psychometric properties across more than 30 countries. Raw scores were converted into CBCL  $t$ -scores. For the broad-band problems (internalizing and externalizing problems) and the total problem scale, CBCL norms define  $t$ -scores between 60 and 63 as subclinical and  $t$ -scores higher than 63 as clinical. For the narrow-band syndrome scales, a  $t$ -score of 67 to 70 is subclinical, and scores higher than 70 are clinical.

Parents filled in the CBCL at pretest and posttest. At pretest, fathers' response rate was 90% in the intervention group and 92% in the control group. For mothers this was 99% and 100%. At posttest, the fathers' response rate was 72% and 87%, and the mothers' response rate was 98% and 100%, for the intervention and control group respectively. Parent scores were strongly correlated, for internalizing  $r = .62$ , externalizing  $r = .70$ , and total problems  $r = .62$ . These scores were subsequently aggregated into a mean parent score. This increased the power of the study since fewer tests had to be conducted<sup>1</sup>. We combined the scores into a mean score when both mother and father scores were present. When only one parental score was available, that score was used.

<sup>1</sup>Analyses of mothers' and fathers' scores separately revealed the same significant effects for mother as for the aggregated scores. The effect sizes were similar or larger for mothers separately. Intervention effects reported by fathers revealed significant effects for total problems, externalizing problems and aggression. Effect sizes were similar to the aggregated scores (.41, .40, .30). Effects of internalizing, withdrawn depressed and social problems did not reach significance in fathers, although fathers still reported small positive effect sizes (.34, .39, .34).

TABLE 1  
Intervention effects on parent-rated psychosocial problems

	Intervention group ( <i>N</i> = 185)				Control group ( <i>N</i> = 39)				Group*Time interaction <i>F</i> (1, 222)	Effect size <i>d</i>
	Pretest		Posttest		Pretest		Posttest			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Total Problems	60.52	7.69	54.01	8.55	60.36	6.77	57.72	7.87	9.89**	.46
Externalizing	55.55	9.29	50.82	8.91	55.55	9.60	53.87	9.89	6.60*	.33
Aggressive	58.22	7.15	54.97	5.87	58.49	8.56	57.44	7.69	4.89*	.36
Rule-breaking	55.45	5.38	53.24	4.67	55.77	5.83	53.86	4.10	.13	.08
Attention Problems	58.36	6.72	55.96	6.10	58.32	5.92	57.50	5.76	3.59 <sup>a</sup>	.26
Thought Problems	59.08	6.93	55.72	6.31	59.71	8.00	57.96	7.30	2.52	.26
Internalizing	62.41	8.37	55.62	9.39	61.22	8.91	58.01	10.26	6.02*	.39
Anxious Depressed	62.11	7.73	56.60	8.22	61.21	7.54	58.03	7.74	2.91 <sup>b</sup>	.29
Withdrawn Depressed	63.73	7.74	59.02	7.00	62.83	7.37	60.81	7.70	4.96*	.37
Somatic Complaints	57.46	6.73	55.20	5.66	57.68	8.34	57.32	8.83	3.53 <sup>c</sup>	.30
Social Problems	63.18	7.48	58.30	7.42	61.74	6.81	60.28	6.65	7.86**	.46

Notes: \*:  $p < .05$ , \*\*:  $p < .01$ , a:  $p = .059$ , b:  $p = .089$ , c:  $p = .061$

Social economic status was derived from an organization in the Netherlands (Central Bureau for Statistics) that coupled postal codes to education, income and occupation. This SES measure varies from  $-4$  to  $4$  (low to high SES) and has a mean of  $0$  in the Netherlands.

## RESULTS

Means and standard deviations at pre- and posttest are presented in Table 1. At pretest, the intervention and control groups did not differ on any of the CBCL scales. Repeated measures MANOVAs revealed significant intervention effects, as indicated by group (intervention/control) and time (pretest/posttest) interactions, for each of the three broad-band variables. The intervention group showed significantly larger decreases than the control group on total problems,  $F(1, 222) = 9.89$ ,  $p < .01$ , Cohen's  $d = .46$ , externalizing behaviour,  $F(1, 222) = 6.60$ ,  $p < .05$ ,  $d = .33$ , and internalizing behaviour,  $F(1, 222) = 6.02$ ,  $p < .05$ ,  $d = .39$  (see Figure 1). We found no correlations between pre-posttest interval and the effects. To be sure, we entered pre-posttest interval as covariate to all analyses. Results were the same as reported.

We found significant intervention effects for the narrow-band scales aggression,  $F(1, 222) = 4.89$ ,  $p < .05$ ,  $d = .36$ , withdrawn/depressed,  $F(1, 222) = 4.96$ ,  $p < .05$ ,  $d = .37$  and social problems,  $F(1, 222) = 7.86$ ,  $p < .01$ ,

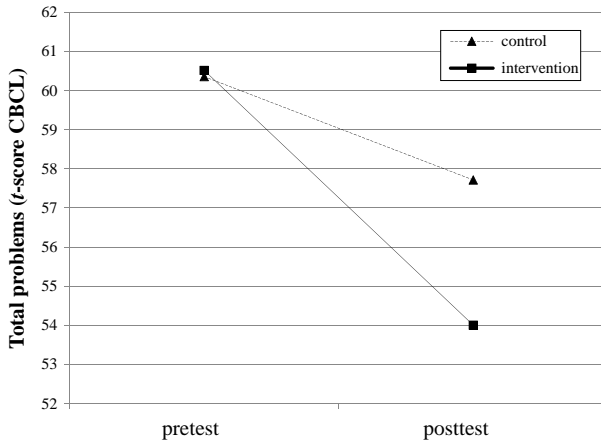
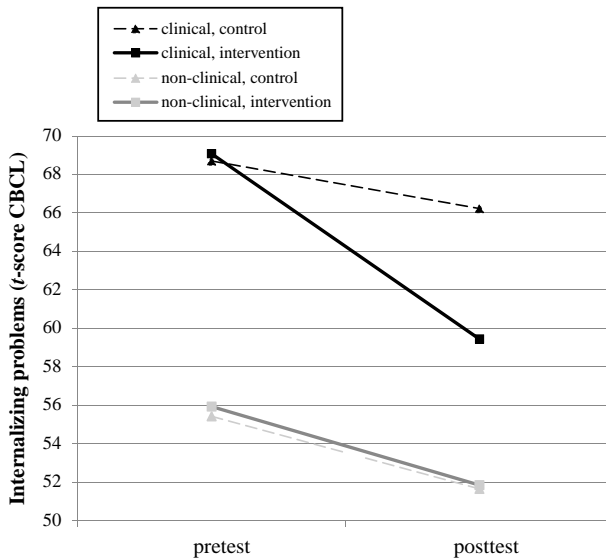


Figure 1. Training effect of TIGER on total problems.

$d = .46$ . Children in the intervention group showed a larger decrease in these problem behaviours than children in the control group. Furthermore, we found marginally significant effects for attention problems,  $F(1, 222) = 3.59, p = .059, d = .26$ , anxious/depressed problems,  $F(1, 222) = 2.91, p = .089, d = .29$ , and somatic problems,  $F(1, 222) = 3.53, p = .061, d = .30$ . We found no significant effects for rule-breaking behaviour  $F(1, 222) = .13, p = .852, d = .08$ , or thought problems,  $F(1, 222) = 2.52, p = .146, d = .26$ . Effect sizes (Cohen's  $d$ ) were corrected for small pretest differences (reported  $d = d$  at posttest minus  $d$  at pretest, cf. Wilson & Lipsey, 2007).

We examined moderation effects for the broad-band scales total problems, externalizing problems and internalizing problems, all as moderators and outcomes. For each of these three outcome measures, three 2x2x2 repeated measures ANOVAs were conducted with group (intervention vs. control) and moderator (clinical vs. below clinical level on each CBCL broad-band scale) as between-subjects factors and time (pretest vs. posttest) as a within-subjects factor. The only significant moderation effect was the three-way interaction of time with group with severity of internalizing problem behaviour at pretest for the outcome of internalizing behaviour,  $F(1, 220) = 5.83, p < .05$ . Post-hoc analyses of this interaction revealed a significant and large intervention effect on internalizing problems for children with clinical internalizing problems at pretest ( $d = .87$ ) and a non-significant intervention effect for children with less severe internalizing problems at pretest ( $d = .06$ ). This interaction is depicted in Figure 2. We found no significant moderation effects for gender or age.



**Figure 2.** Moderation effect of internalizing problems at pretest: Large effect size for children with clinical internalizing problems at pretest, while no effect for non-clinical children.

## DISCUSSION

The present study is the first evaluation of the effectiveness of TIGER in a mental health-care setting directed at children and their parents. Results give support to the effectiveness of TIGER on internalizing and externalizing problems in 8- to 11-year-old children. More specifically, aggression, withdrawn-depressed behaviour and social problems according to parents were all significantly reduced. Effect sizes between .33 and .46 were in the small to medium range (Cohen, 1988). Attention, anxious depressed problems and somatic problems were also reduced after the training, but the intervention effects were marginally significant when compared to control children, with effect sizes between .26 and .30.

These findings indicate that cognitive behavioural techniques taught in a peer group with an additional parent training and a focus on prosocial intentions and responsibility of children is effective for children with psychosocial problems. There was no moderation effect for age or gender, which suggests that young children (eight years old) profit as much as older children (up to 12 years old), and boys profit as much as girls from this kind of intervention. The intervention seems to be more suitable for children with clinical internalizing problems than for children with nonclinical internalizing problems. No differences were found in improvement of children with clinical and nonclinical externalizing problems.

These effects were measured after 10 lessons, taking about five months in total. Due to the attrition at posttest and the selection of pre-posttest intervals

between 70 and 200 days, there was an overrepresentation in the data of children with less severe externalizing and internalizing problems. We do not know the reasons for the attrition. Since the attrition was selective for parents of children with more severe externalizing problems, a likely explanation might be that parents experienced more stress themselves in parenting (caused by or leading to the child's problems) which might lead to less motivation or time to fill in the questionnaires after the training. Because other studies found larger effects for more severe problems (Weisz et al., 2005), the underrepresentation of children with more severe problems in our study might have lowered the measured effect sizes.

The magnitude of our effect sizes is in the small to medium range (Cohen, 1988). However, they are relatively large compared to the mean effect size of .29 of selected/indicated school-based programmes, as reviewed by Wilson and Lipsey (2007). The indicated programmes that they report on contain behavioural strategies, cognitively oriented interventions, social skills training, counselling, therapy and peer mediation. Thus, none of these programmes included a parent training and these programmes were aimed at different age ranges and were of a different duration. Our effect sizes are comparable to effect sizes of behavioural parent training (mean effect size: .47) and cognitive behavioural therapy (mean effect size: .35; McCart, Priester, Davies, & Azen, 2006).

Dodge (2011) argues that findings from laboratory science cannot easily be translated into community contexts because the context matters. This fact is not sufficiently taken into account in many translation efforts from research to practice. The present study was conducted under real-world conditions with routine delivery of a training that is already widely implemented, which make the results directly applicable to community samples. The real-world conditions under which this study was performed, however, also bring with them some limitations. First of all, children were not randomly assigned to either the intervention or control group. Allocation happened on the basis of date of referral. Since the psychological institutes started with their training on apparently random dates, this did not yield any systematic difference between groups, as parents and psychologists could not affect group assignment. Indeed, no differences were found at pretest on any of the scales and no differences in age, gender or SES occurred. This implies that the effects we found cannot be due to differences in these child characteristics or behaviour at pretest between the two groups.

A second limitation is that we did not measure implementation quality. Although we know that in all cases the intervention consisted of 10 lessons, and that the intervention was given by experienced psychologists, we did not measure fidelity and did not register child or parent adherence systematically. This information would enable us to correlate the effects of the intervention to implementation quality, which can make causal inference stronger.

A third limitation is the use of only one informant. We did not collect information from the children, the peers or the teacher. This would have given a more complete

picture of the behaviour and feelings of the children. This is important here since involved parents are likely to report favourable results, particularly in the setting of mental health-care centres. Another explanation for the found effects might be that the intervention taught parents to look at their child's behaviour more positively, while the actual behaviour did not change. The effectiveness of TIGER in the classroom setting (Vliek & Orobio de Castro, 2010) was measured by self-report questionnaires. Effect sizes (between .33 and .78) were similar (or even larger) than the current effects, which indicate that TIGER can be successful in school and in a mental health-care setting as reported by children and parents respectively.

In conclusion, our results suggest that interventions that include cognitive behavioural strategies in the peer group with parent involvement, together with an emphasis on activating children's latent intentions to behave prosocially and making children aware that they are responsible for their own behaviour, can be effective in reducing internalizing and externalizing problem behaviour in 8- to 11-year-olds. In future studies it would be interesting to study the long-term effects of TIGER. The current design did not allow us to compare long-term effects since the control group received the intervention shortly afterwards. Moreover, because the design of this study does not allow for conclusions about which of the intervention elements are responsible for the overall effects, future research might examine whether increases in children's prosocial intentions and feelings of responsibility mediate the intervention effect.

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