Chapter 6

Child-focused, group cognitive behavior therapy for anxiety-disordered young children: A pilot study of the short- and long-term effects on child outcomes and parenting

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Abstract
Meta-analyses show little evidence for increased efficacy when involving parents in the treatment of anxiety disordered children. However, for young children with anxiety (disorders), most studies target only/primarily the parents. This pilot study examined the effects of group CBT focusing on the young children themselves, on outcomes in the children and in their parents. Twenty-two children with anxiety disorders aged 5 to 7 (50% girls) were referred to an academic community mental health center. Small groups of children received age-adapted CBT over eight weekly sessions, each of 90 minutes, after each of which, parents attended a 30-minute group meeting to receive a summary of the session and homework. Measures were taken at waitlist if children had to wait for the group, at pretest, posttest, 2-months- and 12-months follow-up. Changes in presence of anxiety disorders, summed severity of anxiety disorders, anxiety symptoms, behavioral inhibition, externalizing behavior, social competence and goal attainment were measured, as well as fathers’ and mothers’ parental rearing and own anxiety symptoms. Parents completed most questionnaires, but when possible, teacher report and child self-report were incorporated. Results showed no change over waitlist. At posttest and at 2–months follow-up, 76.2% of the children were free of their primary anxiety disorder, and 57.1% were free of all anxiety disorders. At 12-months follow-up, data were available for 17 children, showing 68.8% free of their primary anxiety disorder and 56.3% free of any anxiety disorder. Multi-level analyses showed large reductions (ES -0.92 to -1.18) for summed severity of anxiety disorders and 70% of all children showed much to highest possible improvements on their goals. Mothers reported increased use of positive reinforcement (posttest, 2-months, 12-months follow-up) and modeling/reassurance (2-months and 12-months follow-up) when children were anxious. Fathers reported increased positive reinforcement at 2-months follow-up. Mothers and fathers reported increased punishment at 12-months follow-up. No changes were found in parental anxiety, but parents had normal anxiety levels to begin with. These results suggest that age-adapted group CBT for young children, with minimal involvement of parents, is feasible and highly effective, and appears to improve parenting.
Introduction

Until recently, young children were rarely diagnosed with (anxiety) disorders. It was assumed that, due to rapid developmental changes, their (anxiety) symptoms could be transient (Carter, Briggs-Gowan, & Ornstein Davis, 2004). However, a recent review (Simon, van der Sluis, Muris, Thompson, & Cartwright-Hatton, 2014) demonstrated the opposite: anxiety is common among young children, and untreated, anxiety symptoms and disorders persist. Nevertheless, diagnosing young children should only take place if it benefits their development. This would be the case if we had effective treatments to offer.

Cognitive behavioral therapy (CBT) is an effective treatment to reduce children’s anxiety disorders (e.g., for meta-analyses: Cartwright-Hatton, Roberts, Chitsabesan, Fothergill, & Harrington, 2004; In-Albon & Schneider, 2007). Most interventions include parents, to a greater or lesser extent, but on closer scrutiny, it is not clear that their involvement benefits treatment outcomes. In-Albon and Schneider (2007), for instance, conducted a meta-analysis including 24 randomized controlled trials (RCTs) and compared the efficacy of child-based versus family-based CBT on children’s (6-18 years) remission rates of anxiety disorders. In the family-based CBT, parents typically learnt how to manage their child’s anxiety (and their own), and to improve communication and problem-solving skills. However, the results showed no additional effect of the family component. Other meta-analyses (e.g. Ishikawa, Okajima, Matsuoka, & Sakano, 2007; Reynolds, Wilson, Austin, & Hooper, 2012; Silverman, Pina, & Viswesvaran, 2008) and a recent Cochrane review (James, James, Cowdrey, Soler, & Choke, 2013) reported similar results. One meta-analysis even reported superior outcome for child CBT, however, the effect-size was small and non-significant (Thulin, Serlachius, Andersson, & Öst, 2014). Despite this lack of meta-analytic evidence for involving parents in treating anxiety disordered children, in the area of young children with anxiety (disorders), two recent reviews (Anticich, Barrett, Gillies, & Silverman, 2012; Simon et al., 2014) showed that the majority of prevention and intervention studies targeted only or primarily the parents. Only one treatment study (Minde, Roy, Bezonsky, & Hashemi, 2010) mainly focused on young children themselves, however, as medication was added to the CBT for some children, children’s emotional improvements could also be related to their medication use rather than the CBT.

Young children depend on their parents and parents’ (anxious) rearing behaviors influence children, therefore, it is argued, parents need to be involved in children’s treatment (Hirshfeld-Becker & Biederman, 2002). However, child behaviors also influence parental behaviors. Hudson, Doyle, and Gar (2009) conducted a study in which they observed negativity and involvement displayed by mothers of anxious
and non-anxious children in interaction with another anxious and non-anxious child. They found that mothers of anxious children showed less negativity in interaction with non-anxious compared to anxious children. Furthermore, mothers of both anxious and non-anxious children became more involved in interacting with an anxious child than a non-anxious child. These results indicate that children are not only affected by their parents, they also influence their parents.

In addition, Silverman, Kurtines, Jaccard, and Pina (2009) conducted a RCT including 119 7-16-year-olds with anxiety disorders, and compared CBT with only minimum maternal engagement to CBT with high maternal engagement. In the minimal maternal engagement condition, only the child’s progress and homework that should be completed before the next session were discussed. In contrast, mothers in the high engagement condition participated in each child session, during which, if appropriate, they could also work on their own anxiety. Content also included communication and problem-solving skills and effective management techniques to deal with children’s anxious behaviors. Improvements on child anxiety, maternal anxiety, maternal negative parenting and parent-child conflict were not different between the two treatment conditions. Moreover, improvements in parenting were reported after a reduction in self-reported child anxiety, indicating the possible impact of children on their parents. Other studies also indicate this. Jongerden and Bögels (2014) found equal improvements in parenting (increased autonomy granting and decreased overprotection and rejection) and family functioning (increased relational functioning and decreased dysfunctional control) after both child only CBT and child+family CBT. Taken together, these results indicate that decreased child anxiety leads to changes in parental behaviors, as well as vice versa. However, these studies have included older children, and it is not known whether these changes also occur in younger children and their parents.

There may be several benefits to treating young children themselves (in a group format) rather than via their parents. First, most therapists are trained in CBT whereas parents are not, and it may also be more effective when CBT skills are taught to children directly rather than via parents (Hirshfeld-Becker et al., 2008). Second, therapists are not as emotionally involved with the children as parents, and may, therefore, be better placed to persuade the child to carry out exposure exercises, for example. Treatment in group format also brings benefits. Discovering that other children have the same difficulties may help children to feel less alone and different. Furthermore, in a group format, peer pressure, support and role-modeling may encourage reluctant children to perform exposures (Shortt, Barrett, & Fox, 2001). Finally, in acting as confident role models and coaches for other children, anxious children can raise their own self-esteem and revise their self-concept of being an anxious child, which is important at this age (Hirshfeld-Becker et al., 2008).
The aim of this pilot study is to test whether a treatment mainly directed at young children (aged 5-7 years) themselves, is effective in reducing anxiety (disorders). Further, we investigated whether a group CBT focused on young children would impact on parenting behaviors and parental anxiety. Although extant studies on older children involved treatment conditions with no parent involvement at all, this was not considered practical or ethical here. Young children need parents to bring them to treatment, to guide homework, and to praise them for their efforts. Parents need informing of children’s progress, as children in this age group may not be able to do this reliably themselves.

Method
Participants
Twenty-two children (11 girls) with a mean age of 6.14 (SD = 0.83; age range 5 to 7 years, note that no children of 4 were referred) and their parents, enrolled. Most were resident in two-parent families (n = 18, 81.8%), four children grew up in single mother families. Primary anxiety diagnoses at pretest were specific phobia (n = 11, 50.0%), separation anxiety disorder (n = 5, 22.7%), social anxiety disorder (n = 3, 13.6%), obsessive-compulsive disorder (n = 2, 9.1%) and no disorder (n = 1, 4.5%; this child met criteria for a specific phobia at waitlist, but at pretest no longer met all criteria for an anxiety disorder. However, as this child still experienced debilitating anxiety symptoms, the child did participate in treatment and was also kept in the analyses). Comorbidity was common, with 18 children (81.8%) meeting criteria for other anxiety disorders (generalized anxiety disorder, n = 9; social phobia, n = 9; separation anxiety, n = 7; specific phobia, n = 6; and post-traumatic stress disorder, n = 1). No child met criteria for comorbid mood disorders. Three children met criteria for attention-deficit hyperactivity disorder (ADHD) and three for oppositional defiant disorder (ODD) at pretest. Two children were, after treatment, diagnosed with autism spectrum disorder (ASD).

All mothers and 18 fathers (81.8%) participated. The mean age of mothers was 40.55 years (SD = 4.37) and the mean age of fathers was 42.50 years (SD = 7.21). One mother completed primary school, 4 completed secondary education, 3 completed intermediate vocational education, 7 higher vocational education and 7 university. One father completed secondary education, the others (n = 15) continued further education of which 3 had intermediate vocational education, 6 had higher vocational education and 6 had university. Educational levels were missing for two fathers.
Procedure
Participants were children (and their parents) who were referred to an academic community mental health care center (UvA minds) because of the child’s anxiety. Inclusion criteria were 1) children in the age range of 4 to 7 years; 2) at least one primary anxiety disorder as assessed by the Anxiety Disorder Interview Schedule, parent version (ADIS-P; Silverman & Albano, 1996); and 3) at least one parent was able to engage in the treatment and research process. Children were excluded if they had an estimated IQ below 80, a non-treated psychotic disorder, suicidal risk, and current sexual or physical abuse. Comorbid disorders such as ASD, ADHD or ODD were not exclusion criteria, unless help for that disorder was of primary concern. This study was approved by the ethical committee of the University of Amsterdam. Parents and children were given appropriate information about the study and parents gave informed consent.

Measures
Children’s anxiety disorders were assessed with the Anxiety Disorders Interview Schedule – Parent version (ADIS-P; Silverman & Albano, 1996; Dutch translation by Siebelink & Treffers, 2001). This semi-structured interview assesses disorders, including anxiety disorders, depressive disorders, and externalizing disorders. When all DSM-IV criteria were present for a certain disorder, and an interference score of 4 or higher (range 0-8) was assigned, this indicated a disorder. In line with other treatment studies, we summed the severity scores to form a ‘summed severity of anxiety disorders’ score (e.g. Hudson et al., 2009; Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008; Simon, Bogels, & Voncken, 2011). The ADIS demonstrated good to excellent inter-rater reliability (e.g. Bodden et al., 2008; Lyneham, Abbott, & Rappe, 2007; Simon et al., 2011), including for younger children (Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2005) and good test-retest reliability (Silverman, Saavedra & Pina, 2001).

Parents completed the Preschool Anxiety Scale – Revised (PAS-R; Edwards, Rapee, Kennedy, & Spence, 2010; Dutch translation by Broeren & Muris, 2008). This 28-item measure (scale 0-4) assess anxiety symptoms of generalized anxiety, social anxiety, separation anxiety and specific fears. The total scale shows high internal consistency, good 12-months test-retest reliability and construct validity in a large sample of 3-to-5-year-olds (Edwards et al., 2010). In this study Cronbach’s alpha was .81 for mothers and .84 for fathers.

With the Picture Anxiety Test (PAT; Dubi & Schneider, 2009) children ages 4-8 years provided self-report on anxiety and avoidance. The PAT contains 21 vignettes concerning specific phobia, social anxiety, generalized anxiety, and separation
anxiety. Each vignette consists of two pictures (one depicting a child showing an anxious and avoidant response, and one depicting a child showing a neutral, non-anxious response). The children point to the picture that resembles them most. Next, children point out whether they resemble the child in the picture a little or a lot, so anxiety is eventually assessed on a scale ranging from 0 to 3. The children also rate how often they would avoid each situation/object on a scale from 0 to 3. These answers lead to three scores: a total anxiety score, a total avoidance score and a combined score, (anxiety+avoidance). All scales show acceptable internal consistency, test-retest reliability (may be lower for the avoidance scale), convergent (child self-reports) and discriminant validity (Dubi, Lavallee, & Schneider, 2012; Dubi & Schneider, 2009). In the present study, a Cronbach’s alpha of .78 was found for the anxiety scale, .81 for the avoidance scale and .91 for the composite score.

Children also completed the self-report Koala Fear Questionnaire (KFQ, Muris, Meesters, & Mayer, 2000), a measure consisting of 31 picture illustrated items to assess common childhood fears in 4-12-year-olds. Children provide self-report using a visual scale showing three koala bear faces, representing no fear, some fear or a lot of fear. For 4-6-years-olds from a community sample, the KFQ showed good internal consistency and test-retest reliability (Muris et al., 2003). In the present study, a Cronbach’s alpha of .89 was found.

An adaptation of the Goal Attainment Scale was used (see Bögels, Hoogstad, van Dun, de Schutter, & Restifo, 2008) to design and measure 3 to 6 treatment goals for each child. Parents first described the current situation (i.e. 0 = no improvement; e.g. child only plays at a nearby playground when (grand)parents take the child there and stay at the playground the whole time). Thereafter, steps of improvement and deterioration were established. An example of deterioration (-1) could be: the child no longer plays at the playground, but stays with (grand)parents the whole time. Varying levels of improvement were agreed upon, ranging from some improvement (+1; e.g. (grand)parents walk with child to nearby playground, are in the child’s sight, but not in the playground), much improvement (+2; e.g. (grand)parents walk half way with the child to the nearby playground, stay for a few minutes and then go home while the child plays at playground) to maximum improvement (final goal = +3; e.g. the child walks to the nearby playground alone and plays there with friends. Therapists used these goals in treatment (e.g. in fear hierarchies). For data analyses, a mean score across goals was assigned for each child. Mean scores were rounded, to indicate whether children overall showed: deterioration (-1), no change (0), some improvement (+1), much improvement (+2), or maximum improvement (+3).

Children’s behavioral inhibition was measured with the Behavioral Inhibition Questionnaire (BIQ; Bishop, Spence, & McDonald, 2003; Dutch translation by
Broeren & Muris 2010), which was completed by parents (30 items) and teachers (28 items – items relating to unfamiliar homes were removed). Items were rated on a scale from 1 to 7. The BIQ measures children’s reactions to peers, unfamiliar adults, performance situations, unfamiliar situations, preschool and separation situations, and physical challenges. For the total scale, internal consistencies were high, 12-months stability was good for mothers and fathers, and strong convergent validity was found (Bishop et al., 2003). In a Dutch community sample of 4-to-7-year-old children, the same factor structure was found as by Bishop et al. (2003). Also, high internal consistency (total scale), and construct validity were found for the parent version (Broeren & Muris 2010). In the present study, Cronbach’s alpha’s were .94, .95, and .95 for mothers, fathers and teachers.

Parents and teachers also completed the Social Competence and Behavior Evaluation- The Short Form (SCBE-30; LaFreniere, 1990 (parent version); LaFreniere & Dumas, 1996 (teacher version); Dutch version by van Brakel, Muris, & Bögels, 2004). This questionnaire contains three subscales: anger-aggression, social competence and anxiety-withdrawal. Items were scored from 1 to 6. For teachers, internal consistency was high, test-retest reliability and construct validity were acceptable, and interrater agreement was acceptable to high (LaFreniere & Dumas, 1996). For parents, acceptable to good reliability and construct validity were found (Kotler & McMahon, 2002; van Brakel et al., 2004). In the present study, teacher reports showed .97, .78 and .94, mothers’ .84, .91 and .80; and fathers’ .83, .71, and .70, for the anger-aggression, social competence, and anxiety-withdrawal subscales, respectively.

Parents rated their own anxiety with the Adult Self-Report (ASR; Achenbach & Rescorla, 2003, Dutch translation by Verhulst & van der Ende, 2003). For this study, we only used the DSM-oriented anxiety scale (7 items rated from 0 to 2). The DSM anxiety scale shows good test-retest reliability, sufficient internal consistency, and content validity (Achenbach & Rescorla, 2003). In the current study, Cronbach’s alphas of .78 and .79 were found on the DSM anxiety scale for mothers and fathers, respectively.

To assess parental rearing, parents completed the Child Development Questionnaire (CDQ; Zabin & Melamed, 1980). The CDQ has five subscales: positive reinforcement (i.e. encouraging child to approach the feared situation), punishment, force, modeling/reassurance, and reinforcement of dependency. Parents rate (from 1 to 5) how often they would use each of these responses in situations in which the child is hypothetically anxious. Originally, this questionnaire consisted of 14 items. It was updated by Perrin in 2005. Four items relating to OCD were added (see Challacombe & Salkovskis, 2009) and one item regarding summer camp was
adjusted, as children in the Netherlands do not regularly attend a summer camp. Zabin and Melamed (1980) reported a sufficient split-half reliability coefficient, and parenting behaviors were related to multiple child anxiety measures. In this study we found Cronbach’s alphas of .90 and .91 for positive reinforcement; .75 and .84 for punishment; .87 and .89 for force, .88 and .83 for modeling/reassurance; and .78 and .66 for reinforcement of dependency for mothers and fathers, respectively.

**Intervention**

The intervention was based on the Dutch cognitive behavioral group intervention ‘Discussing + Doing = Daring’ for anxiety disordered children aged 8-18 (e.g. Bodden et al., 2008; Jongerden & Bögels, 2014; Peijnenburg & Bögels, 2008), but adjustments were made, because of the young age of the children. The intervention consisted of 8 weekly 90 minutes sessions, delivered in groups of 4-6 children. After each child session, parents spent 30 minutes in a group, receiving a summary of the session and the week’s homework. The treatment was conducted by two CBT trained child therapists.

In the first three sessions, children were taught about anxiety, how to recognize their feelings and bodily signs of anxiety, practiced relaxation and meditation techniques, learnt the difference between “bullying” and “brave” thoughts, and they began to link thoughts, feelings and behavior. These theoretical concepts were taught using puppet play, stories, games and activities, making participation as fun and engaging as possible. In session four, there was a brief overview of the theory from the first three sessions, followed by a group graded exposure with a spider. Children were coached to apply the techniques they had learned and were encouraged to coach and help each other.

In sessions 5 to 8, children completed exposure tasks together, not only participating in exposures to their own feared situations, but also in those relevant to other children’s fears, during which they could act as a brave role model. Children received positive feedback from the therapists and other children. The intervention closed with a celebration session, in which parents and children together watched videos in which the child bravely performs exposure tasks, and the children received a small reward and diploma.

The 30-minute parent sessions were designed to include as little active parent training as possible. The goal of the sessions was to simply keep them informed of their child’s progress and to discuss the child’s homework for the next week, with which the parent was expected to help. In the first session, parents received psycho-education about anxiety and the rationale behind CBT. In the fourth session, parents were given their child’s anxiety hierarchy, which they could adjust as they...
felt appropriate to their child. They were asked to consider how to reinforce their children for the exposure tasks, using a reward system. During the parent sessions, parents received no explicit information on how to handle their child’s behavior (as is included in other programs directed specifically at parents, e.g. van der Sluis, van der Bruggen, Brechman-Toussaint, Thissen, & Bögels, 2012), the one exception being guidance on implementing the reward system.

Data analyses
For this study there were five measurement points: waitlist, pretest, posttest, 2-months follow-up, 12-months follow-up. There was no controlled waitlist, but a natural waitlist occurred for 12 participants who had to wait at least 4 weeks before the start of the treatment. Thereafter, all parents and children (n = 22) participated in measurement at pretest, posttest and 2-months follow-up. Twelve-months follow-up measurements were currently available for 17 families. Although every effort was made to include teachers as informants, only 9 teachers completed both pretest and posttest, and only four teachers completed 2-months follow-up. At 12-months follow-up, teacher measurements were no longer assessed, as children then often had new teachers. Due to the small number of teachers completing the questionnaires over time, they were only included in the pre- to posttreatment comparison. Graduate students, psychologists and the first author carried out the assessments.

A multi-level approach to repeated measures was used to examine treatment efficacy for the dimensional measures. In this study, measurements were repeated over time; e.g., mothers and fathers completed the same questionnaires on several measurement occasions over time. Multi-level analyses have the advantage of being able to impute missing values, using data from the other measurement points. All variables were transformed into standardized-scores, in which parameter estimates can be interpreted as Cohen’s d (≥ .20 = small effect; ≥ .50 = medium effect; and ≥ .80 = large effect; Cohen, 1992). Dependent variables were: summed severity of anxiety disorders (ADIS), anxiety symptoms (PAS-R, PAT, KFQ, SCBE anxiety-withdrawal subscale), behavioral inhibition (BIQ), social competence and anger-aggression (SCBE), parental anxiety (ASR), and parental rearing (CDQ). Predictors included in the model were the measurement points; waitlist, posttest, 2-months and 12-months follow-up, against the reference condition, which was pretest. Outliers were identified. Models were run twice with and without outliers, but results were not different so we report the analyses containing outliers. Assumptions of normality were checked and where violated, non-parametric analyses using a repeated measures approach (Wilcoxon signed rank test) were run. In most cases, results were similar in both sets of analyses. In a few cases, differences between the multi-
level approach and the non-parametric analyses were found and this is reported below the appropriate tables.

**Results**

**Descriptives**

Table 1 provides an overview of parents’, teachers’, and children’s reports of children’s anxiety at pretest.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mother (n = 22)</th>
<th>Father (n = 17)</th>
<th>Teacher (n = 14)</th>
<th>Child (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADIS summed severity</td>
<td>26.14 (20.20)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PAS-R</td>
<td>53.79 (13.34)</td>
<td>47.76 (14.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SCBE-aw</td>
<td>24.65 (6.80)</td>
<td>22.82 (5.53)</td>
<td>22.77 (10.54)</td>
<td>-</td>
</tr>
<tr>
<td>SCBE-sc</td>
<td>40.45 (8.32)</td>
<td>40.12 (5.86)</td>
<td>34.88 (6.28)</td>
<td>-</td>
</tr>
<tr>
<td>SCBE-aa</td>
<td>23.11 (5.45)</td>
<td>20.35 (5.66)</td>
<td>19.00 (11.02)</td>
<td>-</td>
</tr>
<tr>
<td>BIQ</td>
<td>115.36 (30.79)</td>
<td>112.93 (34.02)</td>
<td>105.25 (27.95)</td>
<td>56.37 (11.86)</td>
</tr>
<tr>
<td>KFQ</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>17.23 (9.34)</td>
</tr>
<tr>
<td>PAT-anx</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14.37 (9.82)</td>
</tr>
<tr>
<td>PAT-avoi*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>16.18 (9.25)</td>
</tr>
<tr>
<td>PAT-com</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

*Note. ADIS = Anxiety Disorder Interview Schedule, severity scores were summed, placed with mothers as the interview was most often conducted with mothers; PAS-R = Preschool Anxiety Scale – Revised; SCBE = Social Competence and Behavior Evaluation; aw = anxiety-withdrawal scale; sc = social competence scale; aa = anger aggression scale; BIQ = Behavioral Inhibition Questionnaire; KFQ = Koala Fear Questionnaire; PAT = Picture Anxiety Test; anx = anxiety subscale; avoi = avoidance subscale; com = composite score of anxiety and avoidance.

*The avoidance scale was completed by 19 children.

**Waitlist**

A natural waitlist period before commencement of treatment occurred for 54.5% of the children (n = 12). The mean duration of the waitlist period was 9 weeks (range 4 weeks to almost 26 weeks). During waitlist, no changes for children’s anxiety disorders occurred, chi-square test for independence (with Fisher’s exact test) showed $p > .05$. As shown in Tables 2, 3, and 4, there were also no significant waitlist changes on any of the questionnaire measures completed by parents and children. Nine children showed no change in their goals for treatment, whereas three children showed some improvement.
Table 2 Parameter estimates (SE) of the multi-level analyses concerning the effects of time (waitlist, posttest and follow-up measurements against pretest) on severity ratings of child anxiety disorders (ADIS), parent reported child anxiety symptoms (RPAS), parent and teacher reported child behavioral inhibition (BIQ) and child social competence and behavior (SCBE).

<table>
<thead>
<tr>
<th></th>
<th>Anxiety disorders</th>
<th>Anxiety symptoms</th>
<th>Anxiety withdrawal</th>
<th>Social competence</th>
<th>Anger/agression</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child anxiety</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Behavioral inhibition</strong></td>
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<tr>
<td><strong>Social competence and behavior</strong></td>
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<tr>
<td><strong>Mother report</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Waitlist</td>
<td>-0.10 (0.17)</td>
<td>-0.23 (0.21)</td>
<td>-0.08 (0.14)</td>
<td>0.13 (0.15)</td>
<td>-0.07 (0.12)</td>
</tr>
<tr>
<td>Posttest</td>
<td>-0.92 (0.16)***</td>
<td>-0.57 (0.15)**</td>
<td>-0.34 (0.10)**</td>
<td>-0.23 (0.12)†</td>
<td>0.14 (0.10)</td>
</tr>
<tr>
<td>FU1 (2-months)</td>
<td>-1.09 (0.20)***</td>
<td>-0.89 (0.18)***</td>
<td>-0.51 (0.16)**</td>
<td>-0.41 (0.14)**</td>
<td>0.18 (0.12)</td>
</tr>
<tr>
<td>FU2 (12-months)</td>
<td>-1.18 (0.18)***</td>
<td>-0.94 (0.15)***</td>
<td>-0.58 (0.15)**</td>
<td>-0.54 (0.11)***</td>
<td>0.32 (0.11)**</td>
</tr>
<tr>
<td><strong>Father report</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waitlist</td>
<td>0.25 (0.24)</td>
<td>0.16 (0.14)</td>
<td>0.32 (0.19)</td>
<td>-0.31 (0.31)</td>
<td>-0.25 (0.39)</td>
</tr>
<tr>
<td>Posttest</td>
<td>-0.53 (0.22)*</td>
<td>-0.08 (0.11)</td>
<td>-0.09 (0.16)</td>
<td>0.09 (0.14)</td>
<td>0.09 (0.14)</td>
</tr>
<tr>
<td>FU1 (2-months)</td>
<td>-0.80 (0.21)**</td>
<td>-0.40 (0.18)*</td>
<td>-0.52 (0.21)*</td>
<td>0.31 (0.18)</td>
<td>-0.26 (0.28)</td>
</tr>
<tr>
<td>FU2 (12-months)</td>
<td>-0.89 (0.27)**</td>
<td>-0.64 (0.19)**</td>
<td>-0.69 (0.14)***</td>
<td>-0.11 (0.36)</td>
<td>-0.35 (0.22)</td>
</tr>
<tr>
<td><strong>Teacher report</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posttest</td>
<td>-0.22 (0.13)</td>
<td>-0.27 (0.13)†</td>
<td>0.46 (0.17)*</td>
<td>-0.06 (0.11)</td>
<td></td>
</tr>
</tbody>
</table>

Note. † p < .10, * p < .05, ** p < .01; *** p < .001; parameter estimates can be interpreted as Cohen’s d; a based on the total anxiety severity score of the ADIS parent report, reported in the table with mothers as they most often participated in the ADIS interview; b For teacher report, too many reports at follow-up were missing, and therefore only a pre-to-post-test design was used; c in non-parametric analyses p < .10; d in non-parametric analyses not significant.
Table 3 Parameter estimates (SE) of the multi-level analyses concerning the effects of time (waitlist, posttest and follow-up measurements against pretest) on child reported anxiety symptoms, as measured with the KFQ and PAT.

<table>
<thead>
<tr>
<th></th>
<th>KFQ</th>
<th>PAT anxiety</th>
<th>PAT avoidance</th>
<th>PAT composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waitlist</td>
<td>0.05 (0.25)</td>
<td>0.04 (0.44)</td>
<td>-0.25 (0.28)</td>
<td>-0.19 (0.27)</td>
</tr>
<tr>
<td>Posttest</td>
<td>-0.43 (0.23)†</td>
<td>-0.46 (0.16)**</td>
<td>-0.51 (0.17)**</td>
<td>-0.51 (0.15)**</td>
</tr>
<tr>
<td>FU1 (2-months)</td>
<td>-0.64 (0.19)**</td>
<td>-0.56 (0.22)*</td>
<td>-0.76 (0.23)**</td>
<td>-0.64 (0.21)**</td>
</tr>
<tr>
<td>FU2 (one year)</td>
<td>-0.47 (0.22)*</td>
<td>-0.44 (0.19)**</td>
<td>-0.66 (0.25)**</td>
<td>-0.60 (0.21)**</td>
</tr>
</tbody>
</table>

Note. † p < .10, * p < .05, ** p < .01; parameter estimates can be interpreted as Cohen’s d; in non-parametric analyses p < .10

KFQ = Koala Fear Questionnaire; PAT = Picture Anxiety Test.

Table 4 Parameter estimates (SE) of the multi-level analyses concerning the effects of time (waitlist, posttest and follow-up measurements against pretest) on parent reported parental anxiety (ASR), and parental rearing (CDQ)

<table>
<thead>
<tr>
<th></th>
<th>Positive reinforcement</th>
<th>Punishment</th>
<th>Force</th>
<th>Modeling/reassurance</th>
<th>Reinforcement of dependency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother report</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waitlist</td>
<td>0.37 (0.34)</td>
<td>-0.14 (0.12)</td>
<td>0.16 (0.19)</td>
<td>0.02 (0.18)</td>
<td>-0.08 (0.21)</td>
</tr>
<tr>
<td>Posttest</td>
<td>0.13 (0.13)</td>
<td>0.35 (0.10)**</td>
<td>0.13 (0.13)</td>
<td>0.04 (0.08)</td>
<td>0.18 (0.12)</td>
</tr>
<tr>
<td>FU1 (2-months)</td>
<td>0.01 (0.14)</td>
<td>0.38 (0.11)**</td>
<td>0.26 (0.15)†</td>
<td>0.07 (0.11)</td>
<td>0.39 (0.11)**</td>
</tr>
<tr>
<td>FU2 (12-months)</td>
<td>-0.10 (0.14)</td>
<td>0.37 (0.10)**</td>
<td>0.37 (0.17)**</td>
<td>0.26 (0.15)</td>
<td>0.52 (0.14)**</td>
</tr>
<tr>
<td><strong>Father report</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waitlist</td>
<td>0.02 (0.28)</td>
<td>-0.19 (0.24)</td>
<td>-0.02 (0.12)</td>
<td>0.08 (0.17)</td>
<td>0.33 (0.31)</td>
</tr>
<tr>
<td>Posttest</td>
<td>-0.17 (0.16)</td>
<td>0.33 (0.20)</td>
<td>0.03 (0.13)</td>
<td>-0.05 (0.15)</td>
<td>0.16 (0.17)</td>
</tr>
<tr>
<td>FU1 (2-months)</td>
<td>-0.06 (0.14)</td>
<td>0.50 (0.17)*</td>
<td>0.06 (0.16)</td>
<td>-0.12 (0.14)</td>
<td>0.38 (0.22)</td>
</tr>
<tr>
<td>FU2 (12-months)</td>
<td>-0.27 (0.14)†</td>
<td>0.29 (0.19)</td>
<td>0.67 (0.29)*</td>
<td>0.30 (0.24)</td>
<td>-0.06 (0.22)</td>
</tr>
</tbody>
</table>

Note. † p < .10, * p < .05, ** p < .01; *** p < .001; parameter estimates can be interpreted as Cohen’s d; * in non-parametric analyses not significant.
Chapter 6

Primary outcome measures

One child met criteria for an anxiety disorder at waitlist, but no longer at pre-test. This child’s results are not included in this section on rates of anxiety disorders after treatment (dichotomous analyses on anxiety disorder free rates only). However, as the child had anxiety symptoms in need of treatment, and the child’s scores were not deviant from the other children on anxiety questionnaires at pre-test, nor between different measurement points, these results are included in all other analyses (described below).

Directly after intervention and at 2-months follow-up, 76.2% \((n = 16 \text{ of } 21)\) no longer met criteria for their primary anxiety disorder and 57.1% \((n = 12 \text{ of } 21)\) were free of all anxiety disorders. At 12-moths follow-up \((n = 16)\), 68.8% \((n = 11 \text{ of } 16)\) were free of their primary anxiety disorder, whereas 56.3% \((n = 9 \text{ of } 16)\) were free of all anxiety disorders. As shown in Table 2, the decreases in the ADIS severity scores were of large effect size at posttest, 2-months follow-up and 12-months follow-up.

Decreases in anxiety symptoms were also reported on questionnaires. Parents reported significant decreases in children’s anxiety symptoms (PAS-R) with medium (posttest) to large effect sizes (2-months and 12-months follow-up), see Table 2. The results of the PAS-R, a questionnaire often used in treatment studies on anxiety in young children, are also displayed in Figure 1. Teachers and mothers reported a trend level significant decrease in children’s symptoms of anxiety and withdrawal (SCBE) at posttest, although effect sizes were small. Mothers also reported significant reductions in these symptoms at 2-months and 12-months follow-up, as did fathers,

Figure 1. Mother and father report of children’s anxiety symptoms (PAS-R) at different measurement occasions, treatment was between pre- and post-test.

![Graph showing decreases in anxiety symptoms over time with posttest, 2-months, and 12-months follow-up](image-url)
with mainly medium effect sizes (results reported in Table 2). Children self-reported (borderline) significant decreases in their anxiety symptoms and avoidance levels (KFQ and PAT) with overall medium effect sizes (see Table 3).

Regarding children’s treatment goals, at post-test ($n = 22$), six children (27.3%) showed some improvement, 13 children (59.1%) showed much improvement, and three children (13.6%) reached the highest possible improvement. At 2-months follow-up ($n = 22$) five children (22.7%) showed some improvement, 13 (59.1%) showed much improvement and four (18.2%) reached maximum improvement. At 12-months follow-up ($n = 17$), five children (29.4%) showed some improvement, seven (41.2%) showed much improvement, and five children (29.4%) showed maximum improvement. None of the children deteriorated or made no improvement on the goals at any of the assessments.

**Secondary outcome measures**
Mothers reported significant decreases in children’s behavioral inhibition (BIQ) at all points, and fathers noted changes at 2-months and 12-months follow-up (medium effect sizes). No significant differences in BIQ were reported by teachers at posttest (note that fathers also did not report any change at posttest), see Table 2. Teachers did report an increase in social competence (SCBE) at posttest (small effect), but this was not reported by parents. Mothers reported a decrease in children’s anger/aggression (SCBE) at posttest (small effect) and 12-months follow-up (medium effect), however, this effect was not reported by fathers or teachers, see Table 2.

No significant changes were found for parent reports of their own anxiety (ASR) at any of the measurement points, see Table 4. However, their mean scores also showed no elevated levels of anxiety at pretest. With regards to parenting (CDQ, displayed in Table 4), mothers reported an increase in positive reinforcement (small effect) at all assessment points, and fathers reported an increase in positive reinforcement at 2-months follow-up (medium effect). Mothers, but not fathers, reported more modelling/reassurance at 2-months (small effect) and 12-months follow-up (medium effect). Mothers and fathers reported an increase in punishment at 12-months follow-up, but no other point. No changes between pretest and any other point were found for both fathers and mothers on force or reinforcement of dependency.

**Discussion**
This study examined whether a child-focused group CBT, with only minimal parental involvement, would reduce young children’s anxiety, and whether differences in parenting would also be reported. First, the effects of treatment on children’s anxiety
disorders will be discussed, followed by a discussion of the results on other primary outcomes (i.e. sum of anxiety severity, anxiety symptoms, anxiety goals, and anxiety/withdrawal). Next, effects on secondary outcome measures (i.e. behavioral inhibition, social competence, and anger/aggression) will be considered. Last, changes in parental rearing and parental anxiety will be reviewed.

With regard to children’s anxiety disorders, it appears that CBT directed at young children can reduce their anxiety disorders, with almost 60% of the children free of all their disorders at posttest and 2-months follow-up. At 12-months follow-up (although preliminary as not all children have been measured), the results remained stable. Furthermore, results over the waitlist period showed no changes, indicating that the anxieties of these young children were not transient. Interestingly, these results are comparable to parent-only treatments designed for young children (e.g. Cartwright-Hatton et al., 2011; Waters, Ford, Wharton, & Cobham, 2009). The results indicate that young children probably have the ability to engage in CBT, as long as the treatment is adjusted to the young age of the child. Moreover, several benefits may be related to treating children themselves rather than their parents. First, delivering CBT skills direct from therapist to child, rather than via parents is likely to reduce errors in transfer. Second, when children are able to apply these skills themselves, they are perhaps more likely to use them outside the context of the therapy as well (Hirshfeld-Becker et al., 2008). These skills may also help children in addressing future anxiety, and other problems. Third, treatment in small groups of children may have the benefit of engaging reluctant children more easily in exposure tasks. One child, for instance, managed to stroke a dog after another child who was also afraid of dogs overcame her dog phobia.

Next, parents reported large reductions in children’s anxiety symptoms and severity of anxiety disorders. Also, over 70% of the children made ‘very much’ and ‘highest possible’ improvement on their (mainly) anxiety-related goals after treatment, indirectly showing a decrease in their avoidance levels. Importantly, both parents and children reported decreases in children’s anxiety symptoms, ranging from small to almost large effects. Teachers, however, did not report statistically significant reductions in children’s anxiety symptoms. There may be several reasons for this. First, it is important to note that we only obtained teacher report for a part of the sample, so there may have been a lack of power to detect differences. Second, parents also reported somewhat lower effect sizes (small to medium) on the anxiety/withdrawal subscale of the SCBE (the questionnaire also completed by teachers) than on the PAS-R, indicating that the PAS-R might be more sensitive to change in children’s anxiety symptoms. Third, some of the anxiety disorders and symptoms, such as specific phobias, are not always apparent in the school environment,
therefore, teachers may not identify changes. Other studies on treatment of young children’s anxiety symptoms have usually not included teachers as informants, therefore these results are difficult to interpret and compare. In a former study from our lab (van der Sluis et al., 2012), investigating the effects of a parent directed treatment for young anxious children, we found a borderline significant reduction in anxiety symptoms as reported by teachers.

In addition, results showed decreases in behavioral inhibition as reported by mothers and fathers, with small to medium effect sizes. These results are in line with other studies (Hirshfeld-Becker et al., 2008, 2010; Kennedy, Rapee, & Edwards, 2009), which all found decreases in children’s behavioral inhibition, either observed and/or as rated by parents. These results may indicate that behavioral inhibition can be reduced by treatments targeting children’s anxiety symptoms. However, teacher reports did not indicate changes in children’s behavioral inhibition. It is important to note that teacher reports were only obtained at posttest, and it is likely that changes were only starting to emerge by that time, as fathers also did not report differences in behavioral inhibition at posttest, but did report differences at 2- and 12-months follow up. No significant improvements were found for children’s social competence as reported by parents, with the exception being maternal report at 12-months. Teachers, however, did report a significant increase in children’s social competence at posttreatment. Why immediate improvement in social competence was not reported by parents is unclear, and more research on this matter is needed. Finally, fathers and teachers reported no changes in children’s anger and aggressive behaviors, in contrast to mothers who reported small to medium decreases at posttest and 12-months, but no changes at 2-months follow-up. It is important to note that we only had a few children with co-morbid externalizing disorders in our sample, and substantial changes, therefore, should not have been expected.

Parenting plays an important role in theories concerning the development and maintenance of anxiety (e.g. Bögels & Brechman-Toussaint, 2006; Murray, Creswell, & Cooper, 2009; Rapee, 2012) and, therefore, it is important to assess whether parenting changes for the positive after treatment. An increase in positive reinforcement (for mothers at all assessments and for fathers at 2-months follow-up) and modeling/reassurance (only mothers) was found. Although we cannot be sure that these changes in parenting are the consequence of reductions in child anxiety, rather than the minimal information parents were giving, or to the sharing of experiences between parents (during group session or possibly in the waiting room), the results do show that even without explicit information on how parents can best respond to their child’s anxiety, they (or at least mothers) seem to be able to pick up these strategies themselves. However, when we compare these results to our
former parent-only treatment (van der Sluis et al., 2012), in which the same parenting behavior scale was used, the changes reported in parenting behaviors in our parent training study were larger (medium to almost large effect sizes), although overall, changes in the same parenting behaviors occurred. We also found an increase in parental levels of punishment at 12-month follow-up. As this effect was only found at 12-months follow-up, it is likely that this finding is related to child maturation rather than to treatment. However, it is also possible that as parents began to experience their children as less anxious, they felt able to reprimand them more appropriately.

With regards to parental anxiety, we found no change over the course of treatment, but this is probably because the parents in our sample were simply not very anxious. Post hoc analyses showed that at pretest only the mother and father of one child reported subclinical levels of anxiety, therefore change was not to be expected. It is difficult to compare whether the parents in our sample were less anxious compared to the parents in other samples, as most studies examining the treatment of anxiety in young children have not assessed parental anxiety (e.g. Cartwright-Hatton et al., 2011; Monga, Young, & Owens., 2009; Schneider et al., 2011).

To conclude, the results of this study suggest that group CBT mainly focused on children can reduce young children’s anxiety (disorders), with large improvements found up to 12 months later. Although some previous studies have involved young children in CBT (Hirshfeld-Becker et al., 2008, 2010; Minde et al., 2010; Monga et al., 2009; Schneider et al., 2011), this was the first study to mainly focus on the young child itself and to show positive results without the use of medication (as in Minde et al., 2010). Some parents in the present study indicated that they were eager to learn more about how to assist their child, although they were satisfied with the treatment. Providing additional information might have increased their satisfaction, but since several meta-analyses (e.g. Ishikawa et al., 2007; Reynolds et al., 2012; Silverman et al., 2008) have found no differences in child anxiety outcomes between studies with and without parental involvement, it is not clear that such additional investment is of benefit. Our results might suggest that the outcomes from these meta-analyses, of studies with much older children, may also be true for young children. However, more randomized controlled trials are necessary before firm conclusion can be drawn.

Strengths, limitations and future research
Strengths of this study were that the sample consisted of clinically referred anxious children. Multiple informants (mothers, fathers, teachers, and children) were used at all measurement points. However, some limitations are worth mentioning. Most
importantly, the sample was small, 12-months follow-up data is incomplete, and there was no control group. It would be of value if the results in this study were replicated in another study using a randomized controlled design and a larger sample of clinically anxious children. Second, the parents in our sample had above average educational levels and were, with the exception of one parent couple, not anxious themselves. What the effects of a mainly child-focused program would be in a clinical sample of less well-educated and more anxious parents is yet unknown.

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Child-focused cognitive behavioral therapy


school and primary school children. *Behaviour Research and Therapy, 41*, 597-617. doi: 10.1016/S0005-7967(02)00098-0


