Anxiety disorders in young children: Parent and child contributions to the maintenance, assessment and treatment
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Chapter 5

Parent-directed cognitive behavioral therapy for young anxious children: A pilot study

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Abstract
Anxiety in children age 8 years and above has been successfully treated with cognitive behavioral therapy (CBT). However, the efficacy of CBT for anxious children ages 4–7 years has not, to date, been fully investigated. This paper piloted a CBT intervention targeting child anxiety that was delivered exclusively to parents of 26 children with anxiety symptoms ages 4–7 years. The intervention consisted of four 2-hour group sessions of parents (couples) of four to six children. These group sessions were followed by four individual telephone sessions, once per week across a 4-week period. The pre- and post-intervention assessment involved measures of multiple constructs of child anxiety (anxiety symptoms, children’s fears, behavioral inhibition, and internalizing symptoms) from multiple informants (parents, children, and teachers). Parents also reported parenting strategies they were likely to use to manage their children’s anxiety pre- and post-intervention. Results indicated a significant decrease in child anxiety and behavioral inhibition as reported by parents and teachers. Furthermore, mothers reported significant increases in their use of positive reinforcement, and modeling/reassurance, and a significant decrease in their use of reinforcement of dependency directly after treatment. Taken together, parent-directed CBT appears to be an effective approach for treating children ages 4–7 years with anxiety symptoms. Limitations of the current research are discussed.
Introduction

Cognitive Behavioral Therapy (CBT) is an effective treatment for anxiety-disordered children and adolescents (see Cartwright-Hatton, Roberts, Chitsabesan, Fothergill, & Harrington, 2004). Some childhood anxiety studies show that age is predictive of CBT outcome, such that younger children experience better outcomes than older children (Bodden et al., 2008; Southam-Gerow, Kendall, & Weersing, 2001). However, despite evidence that younger children benefit more from CBT interventions, anxious children younger than 8 years of age have been involved in intervention studies only in the last few years. To date research exploring the efficacy of CBT and other interventions for young anxious children, or those at risk of anxiety disorders, include randomized controlled trials (RCTs; e.g., (e.g. Cartwright-Hatton et al., 2011; Hirshfeld-Becker et al., 2010; Kennedy, Rapee, & Edwards, 2009; Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2005; Waters, Ford, Wharton, & Cobham, 2009) as well as open trials (e.g. Cartwright-Hatton, McNally, & White, 2005; Hirshfeld-Becker et al., 2008; Monga, Young, & Owens, 2009; Pincus, Santucci, & Ehrenreich, 2008). Although the number of studies conducted with younger children can be considered quite small, the results of these studies are promising. This suggests that the benefits of CBT-based interventions in the context of anxiety can be extended down to children younger than 8 years of age.

Several factors may explain the relatively few treatment efficacy studies involving younger, compared to older, anxious children. First, as all children show age-appropriate fears and anxieties at various stages of development (Rockhill et al., 2010), until quite recently, fear and anxiety in young children has been viewed largely as a normal part of development. Along with this belief, parents and professionals may well have expected normative fear to dissipate as children matured. Nevertheless, there is evidence to the contrary. For example, results of a recent review found that anxiety disorders were already present in approximately 10% of preschool-age children (Egger & Angold, 2006). Thus, although some fears can be transient and developmentally appropriate, others are persistent and severe enough to impair the functioning of young children and their families (e.g. Tandon, Cardeli, & Luby, 2009). These findings highlight the clinical importance of effective interventions targeting child anxiety early in life.

Second, another reason that CBT interventions have not been widely used with young children is the assumption that children under the age of 8 years do not have the cognitive capacity needed for this type of intervention to be effective (Grave & Blissett, 2004). Again this assumption may not be valid. For instance, it could be argued that there are significant developmental advantages in treating younger children with CBT. Both the behavior and neurocognitive development of
younger children has been found to be more plastic and malleable than those of older children. Therefore, early intervention, which decreases and modifies anxious thoughts when children are young, may in fact halt the development of strong negative representations of the self that are characteristic of social and other forms of anxiety, as children mature (Hirshfeld-Becker & Biederman, 2002).

One limitation of existing research in this area is that most studies have included parents as the single informant commenting on changes in child behavior from pre- to post-intervention. Although we recognize that parental reports are important, sole reliance on parental report, especially when limited to the parent who was involved directly in the delivery of the intervention, may result in biased subjective reporting of child outcomes. Stronger evidence of intervention effectiveness is provided when multiple informants are included, such as the nonparticipating parent, and the child, although there is ongoing debate about whether young children are able to reliably report on their own anxiety. However, with age-appropriate methods, accurate self-reports of child anxiety can be obtained (Ialongo, Edelsohn, Werthamer-Larsson, Crockett, & Kellam, 1995; Luby, Belden, Sullivan, & Spitznagel, 2007). Moreover, teacher reports of decreases in child anxiety indicates that treatment effects generalize from the home to the school setting. Therefore, it would be beneficial to have teacher reports of child anxiety symptoms in addition to parent and self-reports.

Several longitudinal studies (e.g. Hirshfeld-Becker et al., 1992; Schwartz, Snidman, & Kagan, 1999) have shown that stable inhibition in young children is associated with higher prevalence of anxiety disorders as the child matures. Therefore, stable behavioral inhibition is viewed as a possible precursor, or beginning manifestation, of anxiety (Warren & Dadson, 2001). From this, it follows that measuring behavioral inhibition as well as anxious symptomaticity would be beneficial when it comes to understanding and tracking change as a result of interventions with young children. To date, only a few studies (e.g., Hirshfeld-Becker et al., 2008, 2010; Kennedy et al., 2009; Rapee et al., 2005) have examined the impact of treatment on behavioral inhibition. Supporting the effectiveness of an early intervention approach, behaviorally inhibited children ages 3–5 years involved in a parent-directed CBT intervention were found to experience decreased rates of anxiety disorders several years later, when compared to inhibited children whose parents were not involved in an intervention (Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2010). Successful interventions delivered early in life, which show subsequent change in the child’s life trajectory, also have major implications for public health (Rapee et al., 2010).

We are also aware that externalizing behaviors may represent expressions of underlying anxiety in some children (American Academy of Child and Adolescent Psychiatry, 2007; Rockhill et al., 2010). For example, children who are anxious and
afraid but unable to express these feelings verbally may engage in tantrum behavior in an attempt to escape exposure to the feared situation. Therefore, measures of externalizing behavior need to be included as well.

Another important construct not typically measured in earlier research involving parents in CBT-based interventions for young inhibited or anxious children is change in anxiety-enhancing parenting behavior. Parenting behaviors have been found to play a significant role in the development and maintenance of childhood anxiety, and this is especially the case for younger children (e.g., Ollendick & Horsch, 2007). In addition, as parent-directed intervention approaches assume that a change in parenting behavior is the mechanism by which a decrease in the child’s anxious symptomatology occurs, it would be advantageous to measure parenting behavior pre and post a parent-directed intervention.

This study was designed to extend current knowledge about the effectiveness of CBT-based interventions with anxious children ages 4–7 years in a number of ways. These include (a) using multiple informants to measure child behaviors (e.g., anxiety symptoms); (b) taking into consideration behavioral inhibition and externalizing behaviors as additional manifestations of anxiety; and (c) examining whether anxiety-enhancing parenting behaviors decreased, and parenting behaviors that assisted children to confront anxiety-provoking situations increased, post-compared to pretreatment.

The intervention study we piloted involved an eight-session structured CBT protocol for parents of children 4–7 years of age with anxiety symptoms. The intervention Confident Kids was developed by Brechman-Toussaint and Anderson (2003) in Australia and was previously trialed with positive results in a small RCT with a sample of Australian children ages 4–7 years (Brechman- Toussaint et al., 2005).

In the present study, 26 families with a child with anxiety concerns were involved in the intervention. We hypothesized that after parents had completed the program (pre–post differences) the children would be less anxious and less behaviorally inhibited, and show fewer externalizing symptoms. We also expected that parents would have learned effective parenting skills and would report being able to use these skills when their child showed signs of anxiety.

**Method**

**Participants**

Families of children ages 4–7 years ($n = 26$; 14 girls, 12 boys; $M_{age} = 5.58$ years; $SD = .95$) that came to the attention of their general practitioner or other health care professionals as having anxiety concerns, were referred to three community
child mental health care centers. A clinical diagnosis of anxiety disorder(s) was made by multidisciplinary staff teams at the various centers, based on an intake by a clinician with expertise in child anxiety disorders. However, no formal semi-structural diagnostic interview was conducted to confirm whether children actually met diagnostic criteria for an anxiety disorder. Inclusion criteria for our study were (a) anxiety symptomatology presumed to be at the level of disorder by the multidisciplinary team, (b) parent and child estimated IQ > 80, and (c) at least one parent willing to participate. Every effort was made to include both parents.

Although both parents were present for all families, not all parents attended the sessions: there were 8 mother–father dyads, 15 mothers, and 3 fathers in attendance. The mean age of fathers of the 26 children was 41.12 years ($SD = 6.62$) and the mothers mean age was 38.44 years ($SD = 5.14$). Average parental education, measured on a scale from 1 (elementary education) to 8 (university education), was 6.28 ($SD = 1.59$, range 2–8) for fathers and 6.52 ($SD = 1.08$, range 4–8) for mothers, indicating an above-average education level.

**Procedure and design**

After parents were referred to one of the community health care centers, an initial meeting took place between the therapist, parents and child. If significant anxiety symptoms were identified by the therapist and confirmed in a multidisciplinary staff meeting, families were informed about the intent of the study. All parents of families meeting inclusion criteria signed informed consent. The child, both parents (including the parent who did not attend the intervention), and teachers completed the questionnaires before and immediately after the intervention. Children completed the questionnaires at the health care centers with the help of clinical psychologists. Parents and teachers completed the questionnaires at home and school, respectively. Couples were instructed to complete questionnaires separately and not to influence each other.

**Measures**

*Child psychopathology*

Children completed the *Koala Fear Questionnaire* (KFO; Muris, Meesters, & Mayer, 2000), a self-report instrument to measure fear in children ages 4–12 years. The scale consists of 31 picture-illustrated items concerning potentially anxiety-provoking stimuli and situations, for example, “thunderstorms”. Each item is rated on a 3-point scale by indicating the koala face that best suits how the child would feel about the particular item, for example, a happy koala face is 1 (no fear), a koala face showing a little fear is 2 (some fear), or a koala face showing a lot of fear is 3 (a lot of fear).
The KFQ shows good internal consistency (Cronbach’s alpha ≥ 0.87) and test–retest reliability (.92; Muris et al., 2003). In our sample we found a Cronbach’s alpha of .85.

Parents completed the parent version of the *Spence Children’s Anxiety Scale* (SCAS-P; Spence, 1999) to measure the anxiety symptoms of their children. The SCAS-P consists of 6 subscales and a total score, in total 38 items, rated on a 4-point scale ranging from 0 (*never*) to 3 (*always*). A sample item consists of “My child is afraid when (s)he has to use public toilets or bathrooms”. The parent version of the SCAS shows satisfactory to good psychometric properties: internal consistency (0.89), convergent validity, and discriminant validity (Nauta et al., 2004). Cronbach’s alpha in our sample was .87 for mothers and .92 for fathers.

In addition, parents and teachers completed the *Behavioural Inhibition Questionnaire* (BIQ; Bishop, Spence, & McDonald, 2003). The BIQ measures how children react in three situational domains: social novelty, situational novelty, and minor risk physical activities. The BIQ consists of 30 items for parents and 28 items for teachers; all items are rated on a 7-point Likert scale ranging from 1 (*hardly ever*) to 7 (*almost always*). A sample item is “Will happily approach a group of unfamiliar children and join in their play”. The BIQ has good internal consistency (alpha .95 for mothers, .94 for fathers, and .97 for teachers) and strong convergent validity (correlations ≥ .85; Bishop et al., 2003). We found Cronbach’s alphas of .96, .97, and .92 for mothers, fathers, and teachers, respectively.

The last questionnaire to measure child psychopathology used in this study as a pre- and postmeasure was the *Social Competence and Behavior Evaluation–30* for preschoolers (SCBE-30). This measure has both a parent (LaFreniere, 1990) and teacher (LaFreniere & Dumas, 1996) version. Each questionnaire consists of 30 items representing 3 subscales (each 10 items); all items are rated on a 6-point scale ranging from 1 (*never*) to 6 (*always*). The subscales are (a) anger–aggression (e.g., “My child screams or yells easily”), (b) social competence (e.g., “My child considers others’ points of view”), and (c) anxiety–withdrawal (e.g., “My child is unnoticed in groups”). The teacher version of this scale shows construct validity, interrater reliability (.78–.91), internal consistency (Cronbach’s alphas .77–.92), test–retest reliability (.78–.86), and temporal stability (.61–.79; LaFreniere & Dumas, 1996). The parent version also shows acceptable internal consistency (Cronbach’s alphas .73–.82) and construct validity (Kotler & McMahon, 2002). Cronbach’s alphas in this study were .82, .67, and .94 for the anger–aggression scale, .79, .80, .89 for the social competence scale, and .87, .92, and .81 for the anxiety–withdrawal scale for mothers, fathers, and teachers, respectively.
Parenting

Mothers and fathers individually completed the Child Development Questionnaire (CDQ; Zabin & Melamed, 1980) at pre- and posttest. The CDQ is a self-report questionnaire that represents hypothetical parental responses to children’s anxiety. Originally this scale consisted of 14 items, but some modifications were made. One item (going to summer camp) was modified to fit the cultural situation. And four items relevant to obsessive-compulsive disorder (see Challacombe & Salkovskis, 2009), were added. Parents were asked how often they would apply each of the five structured responses using a 5-point scale ranging from 1 (never/almost never) to 5 (always/almost always). These items comprise five subscales, namely, positive reinforcement, punishment, force, modeling/reassurance, and reinforcement of dependency. An item example: “If I took my child to get a haircut and he absolutely refused to sit on the chair because he was frightened, I would most likely (a) explain that children get their hair cut all the time and nothing bad happens to them [modeling/reassurance], (b) tell my child that if he didn’t sit down he’d get a mild spanking [punishment], (c) tell my child that if he sat in the chair and behaved he’d get a lollipop [positive reinforcement], (d) take my child home immediately [reinforcement of dependency], and (e) put my child in the chair and hold him there [force].” A split-half reliability coefficient of .67 was found, and parental disciplinary techniques represented on the scale were significantly correlated to various measures of anxiety (Zabin & Melamed, 1980). The CDQ was analyzed only for parents who actually participated in the intervention program. For those parents, we found Chronbach’s alphas of .86 and .74 for positive reinforcement, .65 and .68 for punishment, .69 and .59 for force, .65 and .76 for modeling/reassurance, and .62 and .73 for reinforcement of dependency in mothers and fathers, respectively.

Intervention

The Confident Kids program (Brechman-Toussaint & Anderson, 2003) is a CBT-based intervention for parents of anxious children ages 4–7 years. It is an eight-session program with the first four 2-hour sessions presented in group format over 4 consecutive weeks. These sessions provide parents with knowledge about child anxiety and introduce the concept of inadvertent reinforcement of child anxiety through the use of avoidant and/or overcontrolling parenting strategies. Parents are taught a range of parenting strategies they can use when children display anxiety and fear, and they are taught how to apply these strategies to manage situations the child finds anxiety in a manner that approximates guided exposure. The program also teaches parents how to be aware of and better manage their own anxiety and provides opportunity for practice of skills learned each week in homework assignments.
The next four sessions involve each parent/couple receiving an individual telephone consultation of approximately 20 minutes duration each week for 4 weeks. During these telephone sessions parents receive individual attention and support, directed at the specific needs of their child. Therapists also check how parents are managing to implement the strategies they have learned during the group program. Parents also receive a detailed workbook that is used during group and telephone sessions to provide them with information, instructions, and assignments.

What is somewhat unique about Confident Kids is that it is (a) delivered exclusively to parents who then take the role of “therapist coaches” for their children (i.e., the knowledge and application of CBT-based skills for managing anxiety as well as parenting skills is transferred from the therapist to parents); (b) the intervention focuses on parenting strategies that can be used to manage both children's internalizing and externalizing behaviors (this is important as young children’s anxiety can be expressed externally, e.g., by tantrums and arguments, as well as internally by withdrawal and the refusal to speak); and (c) the protocol has the benefit of being both a group as well as an individual therapy.

The intervention took place in small groups of 4 to 6 parents/couples. Groups were facilitated by two therapists. Parents/couples were then assigned to one of the two therapists for the four telephone consultations. The therapists were clinical psychologists, trained in CBT for anxious children and their parents, and trained and supervised by the last author.

Data reduction, missing values, and data analysis
Families were seen as treatment completers if they attended at least three of the four group sessions and participated in at least three of the four telephone calls. Although none of the families dropped out during treatment, four families (15%) did not engage in enough sessions to be considered as treatment completers. Of those four families, two families in which the father participated did not attend enough group treatment sessions due to the father’s work obligations, but these two families did complete all measurements. The other two families (both parent couples) only had one telephone session due to improvements in the children’s behaviors. They did not complete postmeasurements. Of the 22 fully participating families (i.e., treatment completers), two families could not be reached for assessment at posttreatment. Two children did not complete the KFQ because their parents did not want their children to visit the clinic.

All participating mothers and 81% of the participating fathers (9 of the total 11 participating fathers), completed questionnaires at pretest. Of the nonparticipating parents, 67% of the mothers and 67% of the fathers completed questionnaires
at pretest. Complete missing data at pre- or posttest were estimated with SPSS missing value analysis based on regression (Roth, Switzer, & Switzer, 1999). The questionnaires of mothers and fathers (participating and nonparticipating) were aggregated into an overall mean score for child anxiety, child behavioral inhibition, and child externalizing behavior (but parenting behavior reports were not aggregated into an overall mean score).

All analyses were conducted using the intent-to-treat principle. Paired t-tests were performed to identify changes in behavior from pre to posttest. Within-subject effect size of change was calculated using Cohen’s d. Effect sizes < 0.5 are considered small, 0.5 to 0.8 medium, and ≥ 0.8 as large (Cohen, 1992). Due to restricted power, effect sizes are more informative than t-tests.

Results
Correlations
Table 1 presents correlations between various measures by different raters at pretest. Teacher and parent responses correlate highly. This indicates that regardless of who was completing the measures, the child was seen to be displaying a similar level of anxiety.

Table 1 Correlations of anxiety measures of different informants at pretest

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anxiety-C</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Anxiety-P</td>
<td>-.08</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Behavioral inhibition-P</td>
<td>-.04</td>
<td>.37</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Behavioral inhibition-T</td>
<td>.13</td>
<td>.24</td>
<td>.68**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Internalizing symptoms-P</td>
<td>.06</td>
<td>.53*</td>
<td>.72**</td>
<td>.67**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>6. Internalizing symptoms-T</td>
<td>.21</td>
<td>.17</td>
<td>.35</td>
<td>.62*</td>
<td>.69**</td>
<td>-</td>
</tr>
</tbody>
</table>

*p < .01; **p < .001
C = child as respondent; P = parent as respondent; T = teacher as respondent

Child psychopathology
In our sample, boys and girls had a mean anxiety score of 30.36 (SD = 14.23) and 26.88 (SD = 10.16), respectively, on the SCAS. In previous research (Nauta et al., 2004), mean scores of 31.4 (SD = 12.9) for boys and 33.0 (SD = 13.5) for girls were found for referred 6-to-11-year-old children with anxiety disorders.

From pre- to posttest, children in the intervention group improved on various measures according to parents, teachers, and children (see Table 2). Children and parents reported a significant decrease in child anxiety symptoms (as measured by the KFQ [child] and SCAS [parents]) after treatment. Effect sizes of change were
Parents and teachers reported significant decreases in children’s behavioral inhibition and the effect sizes indicated small changes.

Table 2  Anxiety, behavioral inhibition and internalizing and externalizing behavior: Means (SDs), t-tests, and effect sizes (d)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pretest</th>
<th>Posttest</th>
<th>t</th>
<th>p value</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFQ</td>
<td>55.03 (10.58)</td>
<td>48.83 (11.91)</td>
<td>3.02</td>
<td>.006</td>
<td>0.55</td>
</tr>
<tr>
<td>SCAS-P-total</td>
<td>28.49 (12.08)</td>
<td>21.51 (9.28)</td>
<td>5.86</td>
<td>&lt;.001</td>
<td>0.65</td>
</tr>
<tr>
<td>BIQ-P</td>
<td>131.53 (36.09)</td>
<td>117.97 (28.33)</td>
<td>5.37</td>
<td>&lt;.001</td>
<td>0.42</td>
</tr>
<tr>
<td>BIQ-T</td>
<td>122.68 (28.94)</td>
<td>113.41 (27.20)</td>
<td>2.30</td>
<td>.032</td>
<td>0.33</td>
</tr>
<tr>
<td>SCBE-IN-P</td>
<td>27.50 (9.17)</td>
<td>23.71 (6.49)</td>
<td>3.56</td>
<td>.002</td>
<td>0.48</td>
</tr>
<tr>
<td>SCBE-IN-T</td>
<td>24.65 (8.34)</td>
<td>22.51 (9.18)</td>
<td>1.93</td>
<td>.067</td>
<td>0.24</td>
</tr>
<tr>
<td>SCBE-SC-P</td>
<td>35.98 (6.03)</td>
<td>37.01 (5.72)</td>
<td>-1.30</td>
<td>.204</td>
<td>-0.17</td>
</tr>
<tr>
<td>SCBE-SC-T</td>
<td>33.77 (10.94)</td>
<td>35.63 (9.41)</td>
<td>-1.30</td>
<td>.207</td>
<td>-0.18</td>
</tr>
<tr>
<td>SCBE-EX-P</td>
<td>23.09 (5.18)</td>
<td>21.61 (5.59)</td>
<td>1.77</td>
<td>.089</td>
<td>0.27</td>
</tr>
<tr>
<td>SCBE-EX-T</td>
<td>17.68 (10.09)</td>
<td>16.69 (8.19)</td>
<td>0.81</td>
<td>.425</td>
<td>0.11</td>
</tr>
</tbody>
</table>

KFQ = Koala Fear Questionnaire; SCAS = Spence Children’s Anxiety Scale; SCBE = Social Competence and Behavior Evaluation-30 for preschoolers; IN = Anxiety-Withdrawal subscale; SC = Social Competence subscale; EX = Anger-Aggression subscale; BIQ = Behavioural Inhibition Questionnaire; T = teacher as respondent; P = parent as respondent.

Note 1: N of cases varied by respondents (children = 24; parents = 26; teachers = 23)
Note 2: Based on difference scores, assumption of normality was violated for SCBE-EX parents and teachers. Therefore, one outlier for SCBE-EX-P was removed and this lead to the following result: t (24) = 2.91, p = .008, Cohen’s d = 0.37. For the same reason, 3 outliers were removed for SCBE-EX-T, but results were not influenced.

Note 3: Analyses for SCAS-P-total were repeated for the parent (father or mother) who reported the child’s anxiety to be higher at pretest. This was done because in previous research (Krain & Kendall, 2000) it was found that mothers report higher levels of child anxiety than fathers. Using the mean may therefore lead to underestimating real symptom levels, since mothers are mostly primary caregivers and therefore may observe symptoms that the other parent may not see. The following result was obtained: pretest (M = 31.33, SD = 12.79), posttest (M = 22.51, SD = 9.17); t (25) = 5.84, p < .001, Cohen’s d = 0.79.

Note 4: All analyses were repeated with subjects with missing values deleted (N of cases varied by respondents: Children = 18; Parents = 22; Teachers = 17 for SCBE and 15 for BIQ); this caused comparable results as when the missing values were estimated; except for BIQ-T: t (14) = 1.581, p = .136, Cohen’s d = 0.28.
On the internalizing scale of the SCBE, teachers reported a borderline statistical significant decrease, with a small effect size, whereas parents reported a significant reduction indicated by an almost medium effect size. Parents and teachers reported no statistically significant change on the externalizing behaviors and social competence subscales of the SCBE. (Note, however, that with removal of one outlier (based on difference scores) the data for externalizing behavior is significant for parent report).

**Parenting behaviors**

Table 3 reports changes in parenting behaviors for participating fathers and mothers separately.

<table>
<thead>
<tr>
<th>CDQ scales</th>
<th>Pretest</th>
<th>Posttest</th>
<th>t</th>
<th>p value</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive reinforcement</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Mothers</td>
<td>42.20 (10.37)</td>
<td>50.86 (14.49)</td>
<td>-4.34</td>
<td>&lt;.001</td>
<td>-0.69</td>
</tr>
<tr>
<td>Fathers</td>
<td>52.16 (7.99)</td>
<td>53.61 (7.20)</td>
<td>-0.92</td>
<td>.385</td>
<td>-0.19</td>
</tr>
<tr>
<td><strong>Punishment</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Mothers</td>
<td>26.99 (4.61)</td>
<td>25.84 (6.53)</td>
<td>1.34</td>
<td>.194</td>
<td>0.20</td>
</tr>
<tr>
<td>Fathers</td>
<td>30.07 (5.21)</td>
<td>28.48 (6.21)</td>
<td>1.10</td>
<td>.304</td>
<td>0.28</td>
</tr>
<tr>
<td><strong>Force</strong></td>
<td></td>
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</tr>
<tr>
<td>Mothers</td>
<td>30.94 (6.49)</td>
<td>32.99 (9.05)</td>
<td>-1.26</td>
<td>.222</td>
<td>-0.26</td>
</tr>
<tr>
<td>Fathers</td>
<td>28.32 (5.59)</td>
<td>30.00 (9.34)</td>
<td>-0.53</td>
<td>.610</td>
<td>-0.22</td>
</tr>
<tr>
<td><strong>Modeling/reassurance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers</td>
<td>64.83 (6.75)</td>
<td>69.79 (6.34)</td>
<td>-2.78</td>
<td>.011</td>
<td>-0.76</td>
</tr>
<tr>
<td>Fathers</td>
<td>70.85 (7.31)</td>
<td>69.67 (6.37)</td>
<td>0.56</td>
<td>.588</td>
<td>0.17</td>
</tr>
<tr>
<td><strong>Reinforcement of dependency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers</td>
<td>45.76 (6.84)</td>
<td>43.00 (6.82)</td>
<td>2.93</td>
<td>.008</td>
<td>0.40</td>
</tr>
<tr>
<td>Fathers</td>
<td>49.00 (7.48)</td>
<td>48.05 (7.08)</td>
<td>0.32</td>
<td>.756</td>
<td>0.13</td>
</tr>
</tbody>
</table>

CDQ = Child Development Questionnaire.

*Note 1: N of cases varied by respondents (mothers = 23; fathers = 9)*

*Note 2: Based on difference scores, assumption of normality was violated for mother’s reinforcement of dependency. Therefore 2 outliers were removed, this lead to the following result: t(20) = 3.72, p = .001, Cohen’s d = 0.37.*

*Note 3: All analyses were repeated with subjects with missing values deleted (N of cases varied by respondents; mothers = 18; fathers = 8) this lead to comparable results; except for mothers modeling and reassurance: t (17) = -1.91, p = .073, Cohen’s d = -0.53.*
After treatment, mothers reported significant increases in their likely use of positive reinforcement, and modeling/reassurance, when dealing with children’s expressions of anxiety as depicted in the various scenarios on the CDQ. Medium effect sizes were found for these pre–posttest changes. Mothers also reported a significant decrease in their likely use of parenting strategies that reinforce children’s dependency. A small effect size was found. Fathers did not report significant differences on pre- and postmeasures on any of the parenting measures.

Discussion
The major aim of this study was to investigate the effectiveness of a CBT-based treatment for anxious 4-to-7-year-olds. We conducted an open pilot study of a parent-directed CBT intervention for young children with anxious symptomatology. Based on reports from parents, children, and (to a lesser extent) the child’s teacher, our results demonstrated significant decreases in child anxiety symptoms, behavioral inhibition, and internalizing problems posttreatment. In addition, maternal parenting behaviors changed for the positive after engaging in the intervention compared to preintervention. That is, mothers showed a significant increase in their reported tendency to use positive reinforcement, and modeling/reassurance, and a significant decrease in reinforcement of dependency, to manage an anxious situation with their child. This finding demonstrates that parents’ understanding of anxiety and how it can best be managed changed as a result of the intervention.

Our results of reductions in anxiety symptoms are comparable with the results found by others (e.g., Monga et al., 2009). However, in contrast to most other studies (except for Cartwright-Hatton et al., 2005, 2011; Waters et al., 2009), only parents, rather than children and parents, participated in the intervention. The four group-/four phone-session intervention was shorter than most other therapeutic interventions, yet proved to be feasible, and equally as effective as other studies using CBT with children of this age. This indicates that a short parental-focused intervention, which places little burden on parents and their children can effectively reduce child anxiety.

One significant advantage of working with parents as the agents of change is that children do not need to be pathologized within the mental health system. Another advantage is that parents are empowered as they recognize themselves as successful change agents. The skills they have learned to address anxiety symptoms, as well as effective parenting strategies, are embedded within their parenting repertoire and can be used again in the future, without returning the child to “treatment”. Parents can also apply these strategies to their own anxiety symptoms and/or to anxiety symptoms in another family member including siblings of the anxious child. Given that
anxiety disorders have fairly high familial concordance rates (e.g., Beidel & Turner, 1997), there is the potential for considerable flow of effects as parents generalize their skill sets and apply strategies learned in the program more broadly.

A strength of this study was the inclusion of multiple respondents, that is, mothers and fathers, teachers, and young children themselves. To our knowledge, this was one of the few intervention studies with young children that included child self-report of anxiety. The fact that these young children indicated a medium effect size of change in anxiety symptoms, after an intervention that only involved their parents, is meaningful. Measuring self-reported anxiety and change in anxiety in very young children is in itself a novel area of study. Our results suggest that young children are indeed capable of reporting on self-perceived change in their anxiety. As these children were not directly involved in the intervention, it is not likely that the self-reported change in anxiety was a function of their personal investment of time and effort into participating in the intervention or a social desirability tendency. Furthermore, the finding that these young children, who were not included in treatment, reported improvement, suggests that parents managed to influence their children’s avoidance and anxiety levels.

It needs to be recognized, however, that in some ways results from our study were more positive for mothers than they were for fathers. For example, our finding that mothers but not fathers increased their use of parenting strategies that were more likely to reduce anxiety was unexpected. To date it is not entirely clear whether fathers and mothers differ in how they typically assist children to overcome anxiety, but recent models suggest that there may be some limited but important differences (Bögels & Perotti, 2011; Bögels & Phares, 2008). We also need to recognize that the present study involved (data of) very few fathers compared to mothers ($n = 9$ fathers vs. $n = 23$ mothers), therefore results may reflect a lack of power to detect pre–post differences in fathers’ behavior. In future treatment research, every effort should be made to include more fathers, as to date we lack knowledge about the specific role fathers may play in the treatment of child anxiety.

Even though the results of our study are generally meaningful, the study is not without its limitations. Although we tried to include measures that were specific to the different constructs of interest (i.e., anxiety and fear, behavioral inhibition, externalizing problems) results were not as clear as we hoped. For instance, independent reports from teachers identified a reduction of small effect size in behavioral inhibition and internalizing problems, whereas parents reported almost medium effects on these same constructs. However, disagreement among informants is not uncommon (Achenbach, McConaughy, & Howell, 1987). The fact that all informants reported (statistically significant) differences with small to medium effect sizes suggests that
changes were apparent in the home as well as the school setting. The children themselves also reported that they experienced less anxiety and fear after their parents participated in the intervention than they were experiencing before parent participation.

Other limitations of our study are also worth noting. One limitation was that although clinicians (i.e., multidisciplinary teams) considered the children of parents who were involved in the intervention to be experiencing an anxiety disorder, based on information gained at initial interview done by an expert clinician, this interview did not involve the administration of a standardized interview protocol (e.g., the ADIS interview) to confirm disorder status. Therefore it remains unclear whether the children in our study would have met criteria of an anxiety disorder as measured with a semi-structured interview. Second, although we used the SCAS, a measure used by others to measure anxiety symptoms in young children (Waters et al., 2009), given the young age of the children in our sample, the preschool version of this questionnaire may have been the preferable instrument to capture parent-observed anxious behavior. We also relied solely on questionnaire measures. The study would have been strengthened by the use of (parent) interviews or behavioral assessments of children’s behavior in anxiety-provoking situations (e.g., observing and rating children’s reactions to feared situations). However, there are ethical issues associated with exposure of children to situations they may fear. Nevertheless, it would be beneficial for future research to endeavor to include more objective assessment tools. It also would have been beneficial to include more than two data collection points (i.e., pre- and posttest). Following children longitudinally would have allowed us to determine whether treatment effects were maintained.

Another important limitation of our study was that, as an open trial, we could not determine whether the reductions in anxiety symptoms were due to the treatment or (also) to spontaneous reductions in anxiety symptoms over time, regardless of treatment (LaFreniere & Capuano, 1997; Rapee et al., 2005). RCTs with larger sample sizes are needed. Nevertheless, thus far, RCTs that have been conducted with young children and their parents or parents alone have shown favorable outcomes for CBT compared to wait-list control groups (e.g., Cartwright-Hatton et al., 2011; Hirshfeld-Becker et al., 2010; Waters et al., 2009). A final limitation of our sample was that parents had above-average levels of education. Although the program manual appears suitable for people with lower educational status, this is an empirical question that needs to be addressed.

Conclusion and clinical implications
Overall, based on the results of this open pilot study, a brief parent-directed CBT

intervention targeting anxious 4-to-7-year-olds was able to reduce symptoms of behavioral inhibition, fear, and anxiety in these children according to multiple informants. The intervention was short and successfully empowered and educated parents (or at least mothers) to change the way they parent their anxious child. Given our knowledge that anxiety runs in families, the advantage of parents as the agents of change is that there is the potential for considerable flow of effects. For example, these parents may use their newly gained knowledge to manage future expressions of anxiety by the child who was the target of the current intervention. Parents could also use the information and skills gained from participation in the program more broadly to manage their own anxiety symptoms, and/or anxiety symptoms expressed by another family member such as siblings of the targeted anxious child.

Given the lack of a control group, small sample size, and other limitations mentioned above, there is an obvious need to replicate the findings from this study, using a more robust research design. Nevertheless, the present results suggest that the content and format of the treatment protocol might be of clinical value.

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