Anxiety disorders in young children: Parent and child contributions to the maintenance, assessment and treatment
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General introduction
Case illustration

Toby, a 6-year-old boy, is referred to secondary mental health care due to social anxiety. He is the son of a mother with untreated social anxiety disorder and generalized anxiety disorder. His father does not meet criteria for any current disorder, but has been treated for a depression in the past. His mother is the primary caregiver, as she works part-time whereas Toby’s father works fulltime. Toby also has a 10-year-old sister and a 3-year-old brother.

Mother’s pregnancy of all three children occurred with the help of fertility treatments. Before mother got pregnant with Toby, some earlier attempts to get pregnant failed, or she got a miscarriage. Both parents were really excited when mother was pregnant of Toby, but at the same time they were afraid to enjoy it too much in case anything would go wrong. Overall, the pregnancy went without any major problems, although Toby’s mother was hospitalized several times due to blood loss. Toby was born 2 weeks early. A few weeks after he was born, he was hospitalized for an infection. He recovered within 3 weeks, although he cried a lot as a baby. None of the children went to day care since the grandmother could take care of the children when the mother was (and is) working.

Regarding his symptoms, his mother notices that, since Toby goes to school, he is always quiet when he comes home from school. She also mentions that he always wants to come home directly after school, instead of playing with his friends, like his older sister. In the beginning, his mother expected that these complaints would diminish and that they were related to his young age and the commencement of school. However, she now has the idea that his symptoms are only getting worse, as he, for example, also does not want to join any sport club. His father is usually not at home when Toby returns after school, but he supports his wife in her observations.

At school, his teacher notices that Toby avoids answering questions in class and he is known as a shy child. Nevertheless, he performs well, has friends and is not disturbing in class. The teacher therefore, in contrast to the parents, has no real concerns about him.

In the weekends, most time is spent inside the house rather than outside due to the mother’s social anxiety disorder. Also, Toby’s mother worries about him when he is playing outside, as he could be kidnapped, get hurt or be bullied by other kids. Therefore, she often plays a game with him and his younger brother inside. Toby’s father likes to join in on such activities, but also does groceries and other necessary chores. The oldest daughter does play outside. Toby’s mother also worries about what could happen to her when she is playing outside, but unlike Toby, she believes her daughter is independent enough and can stand up for herself.
Toby’s mother, supported by her husband, wishes that her son would be happier again and more socially active. She also wishes that he is no longer frightened at school, although she does not know whether that is possible as Toby is a very fragile child. She suggests that school can perhaps make adjustments to the demands they place on Toby, by offering him dispensation for giving a presentation in front of the class, for example.

This case study illustrates the possible relationship between the parenting behavior of a mother (with anxiety) and the anxiety symptoms of her young child. The anxiety of Toby seems to be intertwined with his environment. The role of parents in the life of young anxious children aged 4 to 7 years is assumed to be large, but rarely investigated. Therefore, that is the topic of this dissertation. More specifically, this dissertation addresses: (1) the maintenance of a young child’s anxiety and its relationship with parenting; (2) how anxiety can be assessed in these young children: do we need parents or are young children also able to provide informative self-report?; and (3) how anxiety disorders can be treated effectively: is this via the parent, or via the child? Before providing more information about each of these themes, information about anxiety in general and the role of parents in the lives of these young (anxious) 4-to-7-year-olds is given below.

Anxiety
Children of all ages experience anxiety, and it is part of normal and healthy development to encounter such feelings. Anxiety is a functional response to danger, and it is also related to different developmental tasks. For example, the fact that most babies experience a phase in which they are afraid of strangers helps them to attach to their caregivers. Thus, to some level, anxiety is beneficial to a child’s development. Therefore, depending on the age and developmental phase of the child, different fears are considered ‘normal’. For example, toddlers are regularly afraid of specific objects or situations, such as thunder and lightning, darkness and animals. Children in the age range of 4 to 7 years commonly fear animals and darkness as well, but also storms, being separated from their parents and performance fears are prevalent. Older children more often worry, and are concerned with how well they perform in school and in social groups (Beesdo, Knappe, & Pine, 2009; Muris, 2007). Most of these common fears and anxieties fade away over time and help to behave in an appropriate way (e.g. experiencing some social anxiety helps one to adapt in peer groups). However, some fears and anxieties can become excessive, persistent and impair a child’s daily functioning. At that moment, the child’s fear is no longer considered normal, but has evolved into an anxiety disorder (American Psychiatric Association, 2000).
Anxiety disorders are the most common psychiatric disorders in children, adolescents and adults (Cartwright-Hatton, McNicol, & Doubleday, 2006; Egger & Angold, 2006; Wittchen et al., 2011). The onset of anxiety is often in childhood. Moreover, in a large prospective study of 9297 participants, it was found that for those 45-year-olds who meet criteria for a psychiatric disorder, 20% reported a childhood onset at age 7. In addition, internalizing symptoms at age 7 are related to 1.5-2 fold increased likelihood for affective and anxiety disorders in adulthood (Clark, Rodgers, Caldwell, Power, & Standfeld, 2007). Therefore, it is important to detect and treat anxiety disorders at an early age, preferably already before children reach the age of 7 years.

A recent study indeed shows that anxiety disorders are already present even in young children. In a sample of parents of 1.342 children aged 4 to 7 years, Paulus, Backes, Sander, Weber and von Gontard (2015) report that 15.9% of the children show clinical signs of one anxiety disorder and 6.3% already demonstrate clinical signs of at least two anxiety disorders. More precisely, 10.7% display clinical signs of social anxiety disorder, 9.8% of specific phobia, 7.0% of separation anxiety disorder and 3.4% of generalized anxiety disorder/major depressive disorder. Although the authors did not assess impairment, these results clearly illustrate that anxiety is already a serious issue in young children.

In contrast to the research focussing on older children, research involving children below the age of 8 years is scarce. First of all, there is a lack of instruments to assess anxiety in young children. Anxiety self-report questionnaires are hardly available, as young children who are not able to read and write yet, have difficulties in completing regular questionnaires for children aged 8 years and above. Furthermore, the most widely used interview to assess anxiety disorders (Anxiety Disorder Interview Schedule; Silverman & Albano, 1996) cannot be completed by young children and the parent version of this interview is only used if children have a minimum age of 6 years. Therefore, it is important to find and test ways in which anxiety symptoms and disorders in younger children can be detected, and to investigate if self-report questionnaires are reliable and valid for these younger children. Secondly, most research about the treatment of children’s anxiety disorders with cognitive behavioral therapy (CBT) concerns children in the age range of 8 to 18 years, and the involvement of parents above and beyond involving only the children themselves is questionable (Barmish & Kendall, 2005; Silverman, Kurtines, Jaccard, & Pina, 2009). For young anxious children, treatment studies are rare and seem to focus only or mainly on the parents. Effective treatment for these youngsters, with or without the involvement of parents, however, is of utmost importance because young children themselves can then acquire tools to manage their anxiety now and possibly also in the future.
Thus, taken together, there are three important reasons to focus on anxiety in young children: 1) anxiety is a childhood onset disorder; 2) untreated anxiety disorders can become chronic and are also related to the development of other disorders; and 3) most research examining anxiety has focused on children aged 8 years and above.

Role of parents in child development
In studying anxiety in children aged 4 to 7 years, it is important to note the role that parents play in the lives of these young children. For example, the accessibility, proximity, sensitivity and responsiveness children experience in the relationship with their parents is associated with the working models they internalize about their mother, father and themselves. These internal working models have an impact on how the child experiences daily life (attachment theory, e.g. Bowlby, 1988). From a young age, parents also have a large influence on the broader social environment of their child. As shown in the case illustration of Toby, for instance, parents are the ones that arrange the network around the child (e.g. whether or not the child goes to daycare), decide what children are and are not allowed to do, etcetera.

One important skill that children of this age range have to learn is to regulate their emotions. Parents teach their children about emotions by talking to their children about the emotions of the child, their own emotions and emotions of others in the social network of the family. Furthermore, if children are not able to cope with their emotions, such as anxiety, parents are the most important persons to provide support. If parents can react in a responsive way, children learn to better tolerate and regulate their negative emotions. If parents do not react responsively, they undermine their child’s emotional development. Even when children start attending school, parents remain most important in stimulating children’s emotion regulation (see review by von Salisch, 2001).

A significant difference between younger and older children is that as children grow up, they become more independent and their social environment becomes larger. Research shows a shift from secure relatedness to mothers in elementary school children to friends and peers for children at middle school (Lynch & Cicchetti, 1997), suggesting the chief importance of parents in the lives of young children. In addition, the impact of parents may even be larger in the lives of young children who also experience excessive anxiety symptoms or disorders. According to Belsky (1997, 2013), children show different susceptibility to rearing. It may be the anxious children who are most susceptible to both the positive and negative rearing experiences they encounter.
General introduction

To summarize, young children base their working models of themselves and the world around them on the experiences they have with their parents. Young children also have to learn to regulate their emotions (such as anxiety), and their parents can be a great source of information and comfort. Thus, the impact of parents on children may be most significant when the children are young and still highly dependent on their parents. Child anxiety may further increase the susceptibility of children to their parents.

Parents versus children
In this dissertation, the role of parents is investigated in three areas: the maintenance, assessment and treatment of a young child's anxiety. In addition, the capacities and influence of the young children themselves regarding each of these themes is considered. For each of the themes an introduction to/summary of the literature is given below, followed by an outline of the dissertation's chapters.

Maintenance of anxiety disorders in young children
There are various ways in which parents may have an impact on whether their child develops or maintains an anxiety disorder. To illustrate, parents can ‘teach’ children to become anxious for certain situations or objects by showing anxious behaviors (e.g. Bunaciuc, Leen-Feldner, Blumenthal, Knapp, & Badour, 2014; Burstein & Ginsburg, 2010) or by providing threatening information (e.g. Burstein & Ginsburg, 2010; Remmerswaal, Muris, & Huijding, 2013, 2015). Parents can also have an impact on the child’s anxiety based on their reaction to the child’s anxious behavior. For example, by listening to and agreeing with their children’s anxious appraisals, parents reinforce their child’s anxiety (e.g. Dadds, Barrett, Rapee, & Ryan, 1996).

Young children in particular may be more susceptible to (anxiety enhancing) parenting than older children. In line with this suggestion is an experiment conducted by Zarbatany and Lamb (1985) in which the authors examined if 1-year-olds would more readily use their mother’s or a stranger’s happy or fearful facial reaction to a toy spider to determine whether the spider was dangerous or not. Results show that in response to their mother’s facial expression, children display more (mother’s happy facial expression) or less (mother’s fearful facial expression) approach behaviors towards the spider. Such a differential reaction was not observed for different facial expressions displayed by the stranger. Another study shows that 4- and 5-year-olds follow their mother’s claim rather than the conflicting claim of a stranger when the information provided could prove both claims (Corriveau et al., 2009), indicating the young child’s preference for the mother over the stranger. In contrast to the experiments described above (but in line with the suggestion that parents may be
more important to younger children), are the results of such experiments conducted with slightly older children. In a sample of 6-to-10-year-olds (mean age 8.73 years) no differences were found in children’s learning and unlearning of fear between the pictorial facial expression of the child’s mother or a stranger (Dunne & Askew, 2013), showing that there is no longer a sole reliance on mothers at this age.

Although parents can have an impact on their child’s anxiety through their parenting behaviors, child anxiety can also have an impact on parenting behaviors. It is found that mothers are more involved with an unfamiliar anxious child than with an unfamiliar non-anxious child, irrespective of whether their own child is anxious or not (Hudson, Doyle, & Gar, 2009). Results of a genetic study also suggest that anxious children evoke maternal overcontrol (Eley, Napolitano, Lau, & Gregory, 2010).

Thus far, despite the assumed bidirectional relationship between child anxiety and parenting, research shows that this association might only be modest (McLeod, Wood, & Weisz, 2007). One hypothesis is that parenting is important, but mainly to young children. Many studies examine the effects of parenting on child anxiety (e.g. see meta-analysis by McLeod et al., 2007). However, most studies do not cover a wide age range and do not specifically examine the effect of child age in the relationship between parenting and child anxiety. Therefore, one research goal in this dissertation was to examine whether the relationship between parenting and child anxiety is stronger for younger (4-7 years) than relatively older children (8-12 years).

**Assessment of anxiety disorders in young children**

There are specific challenges related to diagnosing young children. One important challenge concerns the parent-child interaction. Specific problem behaviors (e.g. anxiety) of a young child can be associated with the care-giving context rather than being inherent to the child. As young children need their parents’ help and support to regulate their emotions (also see above), their problem behaviors can be limited to the caregivers who interact with the child in a certain way (Carter, Briggs-Gowan, & Ornstein Davis, 2004). Therefore, it seems important for clinicians and scientists, to not only include parents as informants.

In addition, there are good other reasons to not only rely on parental information, but to include other informants as well. Parents may have a tendency to overreport the anxiety symptoms of their child, either because they want treatment for their child or due to their own psychopathology (Krain & Kendall, 2000), or they may underreport the child’s anxiety symptoms as parents may not observe all the anxiety symptoms their child encounters (e.g. Cartwright-Hatton et al., 2006). Furthermore, young children specifically may lack the necessary skills to verbally inform their
parents or others about their symptoms. Therefore they may show behaviors such as somatic complaints, clinging or aggressive behaviors (Rockhill et al., 2010), which could be misinterpreted by parents.

Older children are considered to be valuable informants in assessing anxiety disorders, whereas for young children it is the assumption that they are not able to reliably and validly report on their anxiety symptoms. Hirshfeld-Becker, Micco, Mazursky, Bruett, and Henin (2011) mention that young children “have an undeveloped sense of time and are unable to report on frequencies or durations of symptoms. In addition, they are frequently hesitant to admit to fears or worries, and often do not understand the importance of accurate reporting” (p. 363). Thus, a young child’s self-report is considered unreliable. However, whether young children actually can or cannot provide informative self-reports has rarely been examined and needs attention. If there are age appropriate measures for young children to provide informative self-reports, this could be of great value. In addition to the possibility to include more informants in the diagnostic process, one could then also easily screen for anxiety disorders and possibly detect them at a younger age, which may prevent worsening of anxiety symptoms when left untreated. Therefore, in this dissertation, the possibilities for young children to provide informative self-report on their anxiety was examined.

**Treatment of anxiety disorders in young children**

CBT consists of two phases: cognitive therapy and behavioral (learning) therapy. Cognitive therapy aims to reduce anxiety by focussing on changing anxious thoughts into more functional ones (i.e. cognitive restructuring), for example through the discussion of thoughts or by conducting behavioral experiments. During behavioral therapy, the purpose is to reduce anxiety and avoidance by performing hierarchical exposures. Exposures are the core component of child CBT to resolve anxiety disorders (Seligman & Ollendick, 2011). Other elements that are often part of (child) CBT are: psycho-education about anxiety, bodily symptoms, the association between thoughts-feelings-behaviors, relaxation exercises to manage bodily signs of anxiety, improving or expanding problem solving skills, and relapse prevention (Read, Puleo, Wei, Cummings, & Kendall, 2013).

It is questioned whether young children are able to engage in the cognitive part of CBT, as this requires a certain level of reasoning skills which young children usually have not yet developed (Grave & Blisset, 2004). Nevertheless, several authors have adapted or developed CBT for younger children. Hirshfeld-Becker et al. (2011) describe how to adapt each component of CBT to the younger child so that the treatment becomes more playful, for example by introducing exposures as
Another important difference between standard CBT for older and for younger children is the involvement of parents. As parents may be specifically important to their young children, CBT to treat anxiety disorders of children in the age range of 4 to 7 years is often only or mainly directed at the parents (e.g. Cartwright-Hatton et al., 2011; Hirshfeld-Becker et al., 2010; Kennedy, Rapee, & Edwards, 2009), in contrast to CBT for older children (e.g. Bodden et al., 2008).

The involvement of parents in child anxiety treatment, however, is not undisputed. Two meta-analyses have not found evidence for a superior effect of parent involvement in child CBT for older children (e.g. Reynolds, Wilson, Austin, & Hooper, 2012; Silverman, Pina, & Viswesvaran, 2008), and another one even reported a (non-significant) negative effect (Thulin, Serlachius, Andersson, & Öst, 2014). One exception is the meta-analysis by Manassis et al. (2014), which found that parental ‘transfer of control’ and ‘contingency management’ are related to further improvements in children’s anxiety disorders from posttest to one-year follow-up. Whether these findings also generalize to younger children is as yet unknown.

Due to the important role of parents in the lives of their young children (Barmish & Kendall, 2005; von Salisch, 2001), it seems logical to target parents rather than children, or to largely include them in the child’s treatment. However, there is as yet little scientific evidence that parental involvement in treatment improves child anxiety outcomes, especially when other aspects than contingency management and transfer of control are addressed. Therefore, it seems important to examine a CBT protocol with only minimal levels of parental involvement (e.g. only focusing on contingency management) for young children. If such a treatment is effective, this could inform clinical practice about the capacities of young children and the extent to which parental involvement is necessary. Therefore, we examined both a parent focused and a child focused CBT intervention for young anxious children, to examine the effects of both treatments on child anxiety and parenting behaviors.

**Dissertation outline**

As it is apparent that young children suffer from anxiety (disorders), there is increasing interest in the maintenance, assessment and treatment of anxiety disorders of these young children. In this dissertation, different studies were conducted to increase our knowledge of these topics, and the role of parents and children in each of these themes. We decided to focus on children aged 4 as the lower age boundary because 4-year-olds start a new phase of their life (at this age they enter school in the Netherlands). The upper boundary of a child age of 7 years was chosen because

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1 Transfer of control means that the therapist transfers his/her skills and knowledge to perform exposures to the parents who then transfer this further on to the child. By using contingency management strategies, parents positively reinforce their children for showing brave or approach behaviors during the exposure to the feared stimuli or situation (Silverman & Kurtiness, 1996).
it is clear that anxiety symptoms start at an early age, but most research to date has focused on older children.

Maintenance. As it is unclear how anxiety symptoms develop over time, chapter 1 provides an overview of the course of anxiety symptoms and disorders in preadolescent children. More specifically, this chapter addresses what happens to the anxiety symptoms/disorders of these children when they do not receive treatment compared to when they do receive treatment. Next, chapters 2 and 3 focus on the association between child anxiety/internalizing symptoms and parenting. In Chapter 2, differences in parenting between clinically anxious and healthy control children were examined, while accounting for child age, child gender and parent gender. In Chapter 3, the extent to which parenting is related to children's internalizing symptoms in situations that are hypothetically anxiety provoking was examined, as well as whether child age, child gender and parent gender affected this relationship.

Assessment. Chapter 4 focuses on the assessment of anxiety symptoms in young children. More specifically, it addressed children’s own capacities to report on their anxiety symptoms. Therefore, we examined whether children could be differentiated in having an anxiety disorder or not based on their self-report.

Treatment. In chapters 5 and 6, different CBT treatments are evaluated. First, in Chapter 5, CBT directed solely at the parents to decrease child anxiety was examined. An underlying assumption was that children’s anxious behavior will decrease as parenting practices became less anxiety enhancing. In addition, parenting of fathers and mothers before and after treatment was measured. Second, Chapter 6 reports on a study in which CBT is mainly directed at the young children themselves, with only minimal parental involvement. Changes in anxiety disorders and symptoms, as well as changes in parenting practices were measured, as parenting practices could also change as a consequence of changes in children’s behaviors.

This dissertation ends with a summary of the findings followed by a discussion of these findings and directions for future research. Limitations of the studies conducted in this dissertation, clinical implications of the findings and final conclusions are also addressed.
General introduction

References


General introduction


