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Childhood social anxiety: What's next?

Exploring the role of cognitions, depression, parents, and peers

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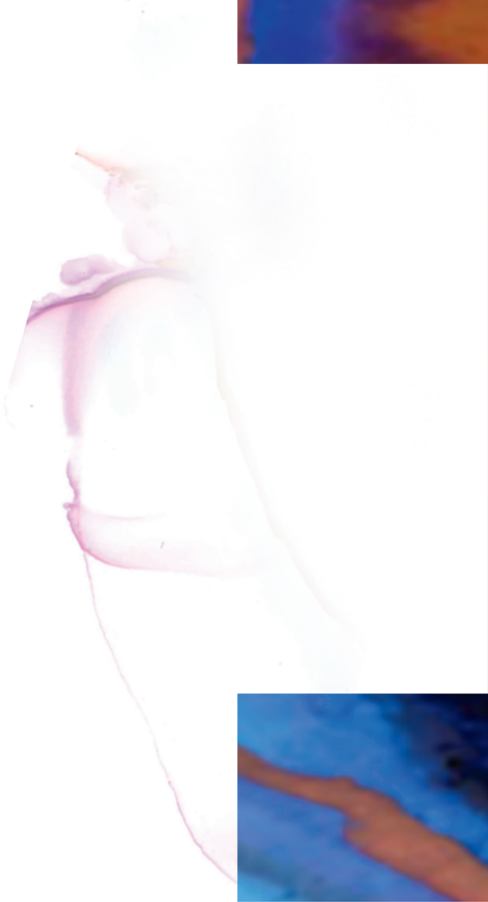
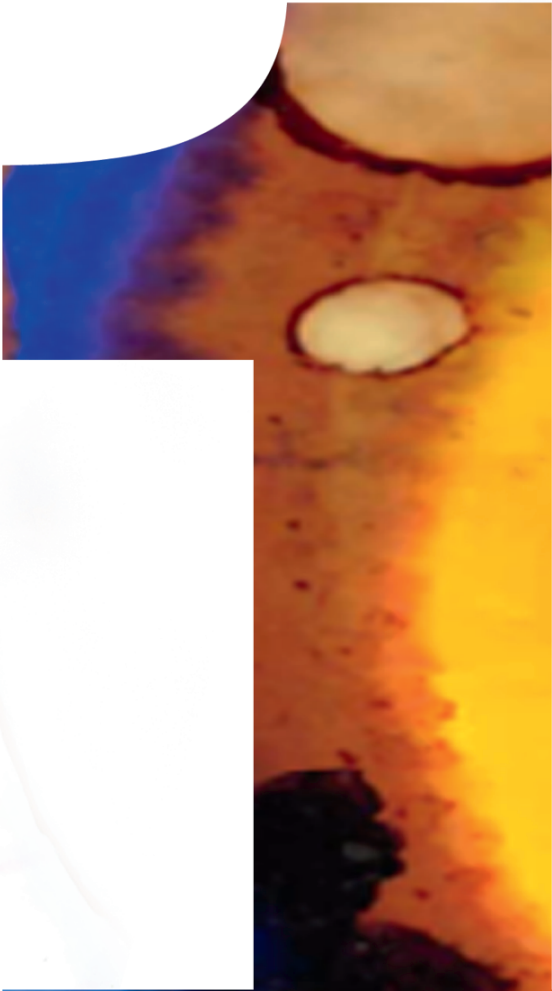
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General introduction



Anxiety disorders

Almost every individual experiences fear or anxiety at some point. Fear is an unpleasant emotion caused by the threat of danger or harm. Anxiety can be defined as a feeling of worry or nervousness about an uncertain outcome. Both fear and anxiety are natural responses in frightening situations. However, fear and/or anxiety could also occur without the presence of actual danger, elicit avoidance behavior and interfere with daily functioning. At that point, it becomes an anxiety disorder (American Psychiatric Association, 2013).

Anxiety disorders are the most common type of psychological disorders. Up to 33.7% of all individuals are affected by anxiety disorder at some point in their life (Bandelow & Michaelis, 2015). The 12-month prevalence rate of anxiety disorders in adults has been estimated at 24.9%, meaning that in twelve months' time almost a quarter of all adults still suffer from an anxiety disorder (Kessler et al., 2012). Individuals often have more than one anxiety disorder and the comorbidity with other disorders, for example depressive disorders or personality disorders, is high (American Psychiatric Association, 2013).

Even though childhood fears are normal in the development of children, children and adolescent also develop anxiety disorders (Muris et al., 1998). In fact, the onset of the first anxiety disorder is most of the time in childhood (Beesdo et al., 2010; Kessler et al., 2005). The prevalence of anxiety disorders in children and adolescents ranges between 15% and 20% with a median age of onset at the age of six, meaning that 15% to 20% of all children with an anxiety disorder develop the anxiety disorder at this age. However, the prevalence rates of different types of anxiety disorders vary between age groups and have a different age of onset. Separation anxiety disorder (fear or worry about being separated from an attachment figure) and specific phobia (an intense and irrational fear for exposure to a certain object, animal, or situation) typically develop before adolescence. Social anxiety disorder (fear and worry about negative evaluation by others) usually develops in late childhood or adolescence. Generalized anxiety disorder (excessive worrying), panic disorder (panic attacks and fear for panic attacks), and agoraphobia (anxiety in situations in which one cannot

easily escape) often develop in late adolescence or early adulthood (American Psychiatric Association, 2013; Beesdo et al., 2009).

Anxiety disorders in youth are related to a number of negative outcomes including avoidance of school-related activities, academic underachievement, lower social economic outcomes, and disabling in school related development tasks (Albano et al., 2013; Bell-Dolan & Brazeal, 1993; Turnbull et al., 1990; Woodward & Fergusson, 2001). When childhood and adolescent anxiety disorders are not treated, this can result in impairments in academic, social, and family functioning and is related to an increased chance of developing further psychopathology in later life (Rapee et al., 2009).

Treatment of anxiety disorders

Cognitive Behavioral Therapy (CBT) is the standard – and in general first indicated - type of treatment for childhood and adolescent anxiety disorders. CBT consists of several components that focus on changing the thoughts, feelings, and the avoidance behavior related to the anxiety. Examples of these components are psychoeducation for children and parents; identifying, challenging and restructuring anxious thoughts, practicing adequate coping strategies, (imaginary, in vitro, and in vivo) exposure exercises, and relapse prevention (Velting et al., 2004; Wang et al., 2007).

Childhood anxiety is treated in comparable manner for children and adolescence in different age groups and with different types of anxiety disorders in a generic manner. The available treatment protocols have in general a broad focus which covers the most frequently used CBT-components (Barrett, 2000). Examples of frequently used individual and/or group CBT-programs for childhood and adolescent anxiety are ‘Coping Cat’ (in Dutch: ‘Dappere Kat’; Kendall & Hedtke, 2006), ‘Cool kids / Chilled Adolescents’ (Rapee et al., 2009), ‘Take Action’ (Waters & Groth, 2016), ‘FRIENDS’ (In Dutch: VRIENDEN; Barrett, 2000), and ‘Discussing + Doing = Daring’ (In Dutch: Denken + Doen = Durven; Bögels, 2008). These treatment programs all have shown to be efficacious treatments for child anxiety (e.g. Warwick et al., 2017).

CBT is the first choice of treatment for childhood anxiety since it has shown to be effective and does not have the side effects that medication has (Cartwright-Hatton et al., 2004). Nevertheless, studies show that up to 40% of the children are not free of their anxiety disorder(s) after treatment (James et al., 2013; Silverman et al., 2008; Warwick et al., 2017). Previous research tried to identify factors that explain differences in responsiveness to treatment. So far, there are no clear answers to the question why some children and adolescence are less responsive. However, it has been suggested that treatment should be personalized with more attention for developmental factors and the pretreatment anxiety severity, comorbidity, and parental factors (Compton et al., 2014; Knight et al., 2014). Furthermore, the type of primary diagnosis has consistently been mentioned as an indicator of differences in treatment effectiveness of CBT for childhood and adolescent anxiety disorders (Hudson, Keers, et al., 2015; Knight et al., 2014). That is, several studies found indications that CBT for children with social anxiety disorder is less effective. In a large multisite study in which 1.519 children received CBT for an anxiety disorder, it was found that children and adolescents with a social anxiety disorder were less often free of their diagnosis immediately after treatment, three months after treatment, six months after treatment and one year after treatment. These results were found regardless of whether they received individual, groups of guided self-help CBT. The presence of a comorbid mood disorder was related to worse outcomes after treatment (Hudson, Keerst, et al., 2015). Manassis and colleagues (2002) also found that children, mothers, and clinicians reported no differences in effectiveness of the CBT between different anxiety disorders, but that children with a social anxiety disorder seemed to benefit less from the treatment when the treatment was provided in a group. Crawley and colleagues (2008) found that children who were diagnosed with a primary social anxiety disorder were less likely to be free of their anxiety after treatment than children with a primary generalized or separation anxiety disorder. Also, other studies concluded that recovery rates for youth with a social anxiety disorder are lower than the recovery rates for youth with other anxiety disorders after treatment (Compton et al., 2014; Ginsburg et al., 2011; Scharfstein & Beidel, 2011).

Hudson, Rapee, and colleagues (2015) concluded that children with a social anxiety disorder response less to treatment and that children with a generalized anxiety disorder have better response to CBT than children with other anxiety disorders. In addition, Kodal and colleagues (2018) and Waters and colleagues (2018) also concluded that children with a social anxiety disorder have poorer outcomes after treatment than children with other anxiety disorders. All in all, it can be concluded that there are clear indications that having social anxiety disorder is related to worse outcomes after treatment in children and adolescents. In addition, in adult CBT - where more often specific treatment programs are used for different types of anxiety disorders - individuals with social anxiety disorder also recover less (Norton & Price, 2007; Powers et al., 2008).

Social anxiety disorder

A social anxiety disorder is an intense fear of being embarrassed, humiliated or rejected in social situations (American Psychiatric Association, 2013). Like all anxiety disorders, avoidance is one of the core symptoms. People with high levels of social anxiety tend to avoid situations in which they expect to be judged negatively by others. Examples of these situations are: giving a presentation, meeting with unfamiliar people, or joining a group. There is a specific subtype of social anxiety disorder that only applies to performance situations. In general, the pattern of fear and avoidance is broader when age increases (American Psychiatric Association, 2013). Social anxiety disorder is the most common anxiety disorder with a 12-month prevalence of 7 to 8% and a lifetime prevalence of 13 to 14% (Sareen & Stein, 2000). In almost all cases social anxiety disorder has an early age of onset and usually starts in childhood or early adolescence (Chavira & Stein, 2005).

Social anxiety disorder has a chronic nature and is a risk factor for the development of depressive disorder and addictive disorders (Stein & Stein, 2005). Furthermore, research with adults shows that social anxiety disorder has high comorbidity rates with other anxiety disorders and with depressive disorders (Erwin et al., 2002; Rush et al., 2005). Anxiety disorders and depressive disorders also have high comorbidity rates in children and

adolescents and the correlation between social anxiety disorder specifically and depressive disorders is even higher (Brady & Kendall, 1992; Wright et al., 2010). Underlying mechanisms of social anxiety are thought to be dysfunctional assumptions and biased processing (often described as cognitive biases). Indeed, individuals with high levels of (social) anxiety are found to have cognitive biases in their interpretations, attention, and memory; when the anxious individuals process ambiguous information, they tend to interpret this in line with their anxious thoughts and are more prone to remember the negative information in line with their anxiety (MacLeod & Mathews, 2012; McNally & Reese, 2009).

Clark and Wells (1995) developed a model in which they aimed to explain how social anxiety usually maintains without proper treatment. Even though there are more models that describe the mechanisms in social anxiety disorder, this model is often seen as the most frequently used and generally accepted model about social anxiety disorder (e.g. Hofmann, 2007; Rapee & Spence, 2004). It is stated that the desire to convey a particular impression towards others and insecurity about one's own ability to do so is the core symptom. Based on previous experiences, individuals develop assumptions about social situations and may think that they are in danger or not behaving as desired and that this may have disastrous consequences. This activates further anxiety with corresponding cognitive, affective, physical and behavioral symptoms. These symptoms are in turn interpreted as threat (e.g., of failing or being rejected) in social situations and thus become further sources of perceived danger. In addition, there is an increased self-focused attention to anxiety symptoms and these symptoms might lead to worse social functioning because individuals are distracted by their symptoms. This in turn would confirm the negative predispositions and expected threat in social situations. In this way, the Clark and Wells' model (1995) demonstrates the vicious cycle in which socially anxious individuals are captured. Rapee and Heimberg (1997) added to this model by stating that the maintaining cognitive process in social anxiety is the forming of a mental representation of themselves as seen by others. This mental representation develops influenced by memories of prior experiences,

internal cues (i.e. physical and behavioral symptoms), and by external cues (i.e. feedback from the environment).

Even though these models originally focused on explaining social anxiety in adults, studies show that the model presumably also applies to social anxiety in children and adolescence, since children and adolescence also show negative cognitions, self-focused attention, safety behaviors, and negative expectations of their social performance (Blöte et al., 2014; Hodson et al., 2008). Furthermore, research also shows that socially anxious children and adolescents have more often negative interpretations of social situations, have dysfunctional cognitions about ambiguous situations, and overestimate the cost and probability of negative social events (Bögels & Zigterman, 2000; Klein et al., 2019; Miers et al., 2008; Mobach et al., 2020; Muris et al., 2000; Rheingold et al., 2003). Even though the application of these theoretical concepts seems to be comparable between adults and children and adolescents, it has also been suggested that more attention should be paid to developmental influences, like parental and peer processes (Leigh & Clark, 2018; Rapee & Spence, 2004).

Youth anxiety and parental anxiety

There is considerable research suggesting that there is a large overlap in anxiety disorders between family members (Hettema et al., 2001). Children of parents with an anxiety disorder have an increased chance of developing anxiety disorders (e.g. Beidel & Turner, 1997; Merikangas et al., 1998) and vice versa: Children with an anxiety disorder are more likely to have a parent with an anxiety disorder (e.g. Last et al., 1991; Lieb et al., 2000). The intergenerational transmission of anxiety is thought to be more specific than in other disorders and is affected by an internalizing factor for genetic problems (Fyer et al., 1995). The intergenerational transmission of social anxiety disorder may be even more specific (Telman et al., 2018). However, more research is needed to obtain a better understanding of the specific intergenerational relations in child social anxiety (Ollendick & Benoit, 2012).

The finding that anxiety runs in families may be explained by both genetical as well as environmental factors. Besides the genetic component,

shared environmental factors play an important role in the overlap in anxiety between family members (Gregory & Eley, 2007). Shared temperament characteristics, like an inhibited temperament, may also contribute to the overlap between parental and child anxiety (Rapee et al., 2009). Furthermore, parenting aspects, especially parental control, are found to be related to the development of child anxiety (McLeod et al., 2007; Wood et al., 2003). Another manner in which parental anxiety is transferred to the child is by observational learning when anxious parents are (unconsciously) modelling anxious behavior or show anxious responses to their children. Furthermore, shared negative life experiences and cognitive processing biases could play a role in the intergenerational transmission of anxiety (Rapee et al., 2009; van Niekerk et al., 2018). Finally, there is evidence that aspects of family functioning, like conflicts and relationship quality, and attachment between children and their parents could be related to both parent and child anxiety. Nevertheless, many of these factors are also related to the development of other types of psychopathology and is therefore not specifically related to child anxiety. It is thus not completely clear yet which factors contribute (the most) to this intergenerational transmission of anxiety and which are specific for anxiety (Bögels & Brechman-Toussaint, 2006).

There are also several studies that investigated how parental anxiety relates to treatment outcomes after CBT for childhood anxiety. So far, the results of these studies are not completely conclusive, but seem to indicate that parental anxiety might have a negative effect on the outcomes after the treatment of child anxiety (Creswell & Cartwright-Hatton, 2007). CBT interventions can include parents in the treatment in various manners ranging from small to large involvement. Parents can receive psychoeducation sessions, be included as co-therapist and trained in home practicing, or receive training in managing their own anxiety in relation to their child's problem. Yet, meta-analyses and reviews of the literature do not report convincing beneficial effect of including parents in the treatment. Even though some studies found a trend towards a superior effect, other studies found no superior effects or found even inverse relations between the amount of parental involvement in the treatment and treatment

outcomes (Creswell & Cartwright-Hatton, 2007; In-Albon & Schneider, 2007; Manassis et al., 2014; Öst & Ollendick, 2017; Rapee et al., 2009; Reynolds et al., 2012; Silverman et al., 2008; Spielmans et al., 2007). A possible explanation that has been described for the indications for inverse effects on treatment outcomes of parental involvement is that parents serve as a safe person and consequently children might be less able to develop personal self-efficacy in overcoming their fears in the presence of their parents (Ollendick et al., 2015; Öst & Ollendick, 2017).

Social anxiety and peer relations

As mentioned above, the prevalence of social anxiety peaks in adolescence. Peer relations are important for the social-emotional development in adolescence and social anxiety symptoms might especially be troublesome in school-like situations. There are indications that socially anxious children and adolescents experience difficulties in peer relations and in their social functioning. Children with high levels of social anxiety often avoid social situations, which might give them less opportunities to practice their social skills (Kingery et al., 2010). That is, experiencing distress in social situations with peers leads to avoidance and social withdrawal, and less practicing might lead to more anxiety for future social situations. The relation between social anxiety and social withdrawal is thought to be cyclical. Children who behave withdrawn are not liked by peers and have difficulties developing friendships (Rubin & Burgess, 2001). A number of associations between social anxiety in youth and social functioning with peers have been described. Even though studies are not completely in line with each other, some studies suggest that there are relations between rejection or negligence by peers and social anxiety symptoms. Furthermore, higher social anxiety is related to lower peer acceptance in youth and lower perceived support by classmates. Social anxiety has also been associated with less friendships, less intimacy in friendships, less companionship, disclosure, and support in friendships and more conflicts in friendships (for a review, see Kingery et al., 2010). It is important to note that most of these conclusions are based on self-report studies, which makes it not clear whether these described relations between social anxiety symptoms and

social functioning with peers are accurate or a perception that is influenced by the social anxiety itself.

Social skills are thought to play a role in the relation between social anxiety in youth and peer acceptance (Greco & Morris, 2005). Socially anxious children and adolescence have cognitive symptoms in which they have low expectations and judgement of their social performances (Alfano et al., 2006; Miers et al., 2009; Morgan & Banerjee, 2006; Spence et al., 1999). However, studies are inconclusive about whether children and adolescents with high levels of social anxiety actually have skills deficits or not. Some studies found that peers do not rate socially anxious children as less socially skilled and suggest that the social skills deficit is mainly a self-perception (Cartwright-Hatton et al., 2003, 2005; van Niekerk et al., 2017), while other studies found that social anxiety symptoms in youth are related to worse social skills and performance (Inderbitzen-Nolan et al., 2007; Spence et al., 1999). It has been suggested that adding social skills training to CBT for social anxiety disorder might enhance treatment effectiveness (Waters et al., 2018; for a randomized controlled trial with adults, see Herbert et al., 2005).

This dissertation

The aim of this dissertation is threefold. First, the aim was to study the relations between child and parental anxiety symptoms at a detailed level. Second, we studied treatment outcomes after CBT for childhood anxiety disorders in a clinical sample. We mainly focused on the outcomes of the Dutch CBT-program ‘Discussing + Doing = Daring’ in children and adolescents with a social anxiety disorder compared to children with another anxiety to disorder. This program is comparable to other childhood anxiety CBT-programs, but devotes more attention to challenging anxious thoughts and behavioral experiments. In general, the DDD-program has shown to be an effective treatment for childhood anxiety (Bodden et al., 2008; Jansen et al., 2012). In addition, the goal was to investigate what predicts – comorbid depression and/or parental anxiety - differences in treatment outcomes between youth with a social anxiety disorder compared

to youth with other anxiety disorders. This second part of the dissertation therefore includes three clinical studies addressing these questions.

The third aim of this dissertation is to obtain a better understanding of social functioning in relation to social anxiety symptoms and especially the capacity of youth to accurately estimate aspects of their own social functioning in relation to social anxiety symptoms. As was outlined before, one of the core symptoms of social anxiety is the worry and the assumptions about one's own social functioning and (social) anxiety is related to cognitive biases related to the anxiety. The last three studies of this dissertation therefore focus on children and adolescents' perception of their likeability by peers and friendship with peers, the actual likeability and friendships as indicated by peers, and how discrepancies between these views relate to childhood and adolescent social anxiety. These results could provide more specific information on whether it is important to treat the bias, to improve the actual social functioning, or a combination of both to improve treatment.

Part I: Parent-child relations in anxiety

Chapter 2 ('Relations between children's and parents' anxiety symptoms') describes a study in which the relation between children's and parent's anxiety symptoms are studied in a clinical sample. This chapter provides detailed information about the extent to which different anxiety symptoms relate within and between family members and if these relations differ between a group of children with an anxiety diagnosis and a group with other clinical diagnoses. Participants in this study were parents of 1452 children who were referred to an academic treatment center. All parents reported about their children's and their own anxiety symptoms. We used a network analysis approach to obtain a more detailed understanding of the intergenerational relation between anxiety symptoms as background information for further studying parent's role treatment outcomes of anxious youth.

Part II: Treatment outcome studies

Chapter 3 ('Treatment outcomes in youth with social anxiety disorder compared to other anxiety disorder – a replication study') is a treatment study in which we compare the effectiveness of the CBT-program for children with a social anxiety disorder and children with another anxiety disorder. In total, 152 children and their parents reported before and after the treatment in interview and various questionnaires on the children's symptoms. This main goal of this study is to replicate previous research (focusing on other CBT-programs) that found worse outcomes for children with a social anxiety disorder after treatment. We do not only look at primary diagnosis, but also at treatment outcomes when children have a social anxiety disorder as a comorbid diagnosis in addition to another primary anxiety disorder. Chapters 4 and 5 focus on further explaining the treatment outcomes in this group of participants by focusing on predictors. Chapter 4 ('Treatment outcomes in youth with social anxiety disorder compared to other anxiety disorder – the role of comorbid mood disorders') describes how having a comorbid mood disorder relates to treatment outcomes and if these comorbid problems can explain differences in treatment effectiveness. Chapter 5 ('Treatment outcomes in youth with social anxiety disorder compared to other anxiety disorder – the role of parental anxiety') focusses on the role of parental anxiety. In this study we investigate how parent's anxiety before the start of the treatment and parents' change in anxiety during their child's treatment is related to the treatment outcomes. In addition, we study if parental anxiety could possibly explain differences in effectiveness between children with and without a social anxiety disorder.

Part III: Social relations studies

Chapters 6, 7, and 8 focus on social functioning in peer relations and perceptions of this social functioning in relation to social anxiety symptoms. Chapter 6 ('Are socially anxious children really less liked, or do they only think so?') focusses on the perceptions of likeability. In this chapter we examine in a group of 586 children between 7 and 13 years old how social anxiety symptoms relate to children's self-estimates of their likeability by

peers, the peer-nominations of likeability, and the discrepancy between these two measures. We also study the role of depressive symptoms in these relations. This study provides information on how accurately children are able to estimate their own likeability according to peers and if a possible bias in perception relates to social anxiety symptoms. Chapter 7 ('A further investigation of the relation between social anxiety symptoms in children and (perceptions of) likeability by peers') is comparable to the previous study, but extends chapter 6 as the peer-ratings are adjusted by using a scale measure that is comparable to the self-estimate measure and the role of experienced social support by a best friend on perception accuracy was studied. In total, 532 children reported on their social anxiety symptoms, depressive symptoms, the likeability measures and experienced support by their best friend. Chapter 8 ('Social anxiety symptoms in adolescents and (perceptions of) likeability by peers and friendship with peers – the role of avoidance') is a study in which again the perception accuracy of likeability by peers in relation to social anxiety was studied, but this time in a group of adolescents. Friendship quantity and the corresponding perception accuracy was studied. In addition, we focus in more detail on the social worrying and (tendency to) avoid social situations as symptoms of social anxiety. Therefore, 263 reported about their social anxiety symptoms, self-estimated likeability, liking and disliking of their peers, their friendships within the class and about classmates who behave withdrawn. The combination of these last three studies should provide information on if social anxiety symptoms are mainly related to biased perceptions of others' opinions of their social functioning, or if there are actual social deficits that could be addressed to improve treatment.