

**Children with
Internalizing Problems
and Peer Problems**
Risk Factors, Treatment
Effectiveness, Moderation,
and Mediation

Saskia Mulder

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Children with Internalizing Problems and Peer Problems

Risk Factors, Treatment Effectiveness, Moderation,
and Mediation

Kinderen met Internaliserende Problemen en Peer Problemen

Risicofactoren, Behandeleffectiviteit, Moderatie
en Mediatie

(met een samenvatting in het Nederlands)

Proefschrift

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Chapter 1

General Introduction

Internalizing problems and peer problems are known to affect children's wellbeing (e.g., Hawker & Boulton, 2000; Kaltiala-Heino, Rimpelä, Marttunen, Rimpelä, & Rantanen, 1999; Pine, Cohen, Gurley, Brooks, & Ma, 1998; Wittchen, Essau, Von Zerssen, Krieg, & Zaudig, 1992). Children with internalizing problems and peer problems often have few friends, experience difficulty at school and are at risk of victimization (Essau, Conradt, & Petermann, 2002; Kendall, Safford, Flannery-Schroeder, & Webb, 2004; Khalid-Khan, Santibanez, McMicken, & Rynn, 2007; Rubin & Burgess, 2001; Wittchen, Stein, & Kessler, 1999). In addition, internalizing problems, and peer problems, also have consequences for later life. For example, early social anxiety is a risk factor for the development of internalizing disorders, such as anxiety disorders or clinical depression. Moreover, peer problems such as victimization are also a risk factor for later internalizing problems (Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005).

In this dissertation, we examine internalizing problems and peer problems in children around the age of twelve. These children were all about to make the transition to secondary school, or had just made that transition. The dissertation reports on four studies. In study 1 and 2 we examine the relation between social anxiety and victimization. In study 1, we also examine the extent to which the Big Five personality traits influence the likelihood of a socially anxious child being victimized. Gender differences are also considered in this study. In study 2, we examine the prospective relation between social anxiety and victimization, and whether gender differences exist. In study 3, we examine the effectiveness of the training program 'Happy at School' in alleviating internalizing problems and peer problems. In addition to the effectiveness of the program, also moderation of gender and initial problem levels are studied. In study 4, we examine the working mechanisms behind the effectiveness of 'Happy at School' by examining mediating processes.

The Relationship Between Social Anxiety and Victimization: Study 1 and 2

In the past, extensive research was undertaken on the relation between social anxiety and victimization. Mostly a positive correlation was found (e.g., Flanagan et al., 2008; Hawker & Boulton, 2000). Characteristic behaviors of socially anxious children, such as conflict avoidance, fear of rejection, unassertiveness, visible anxiousness (e.g., Creed & Funder, 1998; Davila & Beck, 2002), and poor social skills (Miers, Blöte, & Westenberg, 2010) make them easy targets for bullies (Egan & Perry, 1998; Grills & Ollendick, 2002).

However, not all socially anxious children are victimized. Several studies have examined the factors that influence this relationship. For example, a warm supportive classroom is found to be important in protecting socially anxious children from victimization (Gazelle, 2006). In addition, the transition to secondary school can also work as a protective factor for socially anxious children that protects them from victimization (Rubin, Coplan, & Bowker, 2009). Prior research mainly focused on the contextual factors that influenced the relationship between social anxiety and victimization. However, not much research has been done in studying personal factors that influence this relation. In study 1, we examine whether the Big Five child personality traits influence the relation between social anxiety and victimization.

There are several reasons to believe that socially anxious children with different levels of certain personality traits are less at risk for victimization than socially anxious children with other levels of these personality traits. Personality traits are associated with both social anxiety and victimization. In late childhood, children who are victimized are characterized by lower levels of agreeableness, extraversion, and conscientiousness, and higher levels of neuroticism (e.g., Bollmer, Harris, & Milich, 2006). Socially anxious adults have lower levels of extraversion and conscientiousness and higher levels of neuroticism (Kotov, Gamez, Schmidt, & Watson, 2010). We will examine whether these Big Five personality traits influence the relation between social anxiety and victimization in children.

A vicious cycle between social anxiety and victimization has been suggested, with social anxiety and victimization mutually influencing each other over time (e.g., Hodges & Perry, 1999). However, different theories and empirical research also suggested prospective directions in the relation between social anxiety and victimization. For example, a social information processing bias in socially anxious adults and adolescents has been observed (e.g., Beard & Amir, 2008; Miers et al., 2008), as socially anxious individuals are prone to interpret social situations more negatively than non-anxious individuals. Negative interpretations and expectations of events could lead to withdrawal from, and avoidance of, situations involving peers. Behaviors associated with this withdrawal, such as fewer positive interactions, unassertiveness, or visible anxiousness, could heighten the risk of victimization (Creed & Funder, 1998; Davila & Beck, 2002; Egan & Perry, 1998; Grills & Ollendick, 2002; Siegel et al., 2009). In addition, theoretical knowledge about fewer socially effective interactions in socially anxious children suggest a prospective direction from social anxiety to victimization (e.g., Beard & Amir, 2008; Miers et al., 2008; Ollendick & Hirshfeld-Becker, 2002). Socially effective interactions are essential in developing good social skills. When social skills are not properly developed, this decreases social acceptance and increases the risk of victimization (Ollendick & Hirshfeld-Becker, 2002). However, other perspectives suggest the opposite direction. Children that are victimized experience multiple incidences of exposure to harmful situations. They could become hypervigilant to situations including peers and to the opinions of others (Grills & Ollendick, 2002).

From an empirical perspective, studies examining the prospective relation between social anxiety and victimization have yielded inconsistent results. Two studies found a bidirectional relation (Hodges & Perry, 1999; Siegel, La Greca, & Harrison, 2009), one study found correlated changes (Storch, Masia-Warner, Crisp, & Klein, 2005), and one study found a prospective relation in which victimization leads to social anxiety (Vernberg, Abwender, Ewell, & Beery, 1992). These studies used a rather specific sample, causing problems with generalizability. In addition, none of the studies combined the use of self- and peer-reported victimization, which is important. Firstly, to reduce the chances of finding overly inflated relations caused by shared method variance (e.g., Crick & Bigbee, 1998; Storch et al., 2005). Secondly, using both peer-reports and self-reports allows for a comprehensive view of victimization compared to using only one informant source, as it was suggested that both constructs (peer-reported victimization and self-reported victimization) are not identical, but complementary (Juvonen et al., 2001).

In study 2, we examine the prospective interplay between social anxiety and victimization with a large generalizable sample with self- and peer-reports of victimization to disentangle the prospective relation between social anxiety and victimization.

Additionally, in both study 1 and 2, we examine whether gender influences the relation between social anxiety and victimization. Gender differences between boys and girls in social anxiety and victimization have been found in prior research (e.g., Crick & Bigbee, 1998; Crick & Grotpeter, 1995; La Greca & Lopez, 1998). More importantly, the relation between social anxiety and victimization has been found to be stronger for boys than for girls in late childhood (Flanagan et al., 2008). These differences between boys and girls indicate that it is important to consider gender in the relation between social anxiety and victimization.

Effectiveness, Moderation and Mediation of 'Happy at School': Study 3 and 4

Internalizing problems and peer problems, including victimization and social anxiety, can undermine the wellbeing of children and therefore it is important to intervene and minimize their prevalence. Unfortunately, interventions that aim to reduce internalizing problems and peer problems are not always satisfactory. Specifically, while some social skills training programs show moderate effects, other training programs have little or no effect on the improvement of social skills or the reduction of problem behavior (Beelmann, Pfingsten, & Lössel, 1994; Merry, McDowell, Hetrick, Bir, & Muller, 2004; Sheridan, Kratochwill, & Elliott, 1990; Spence, 2003). Moreover, effects often diminish after a short time period (Spence, 2003; Beelmann, Pfingsten, & Lössel, 1994).

In study 3 and 4, the effectiveness of an intervention called 'Happy at School' will be examined, and consideration will be given as to whom the program works for (i.e., moderation) and how the program works (i.e., mediation).

The Intervention 'Happy at School'

'Happy at School' is an indicated preventive social skills group training program for children that are about to make the transition to secondary school (10-12 years old). The goal of the program is to reduce internalizing behavior (e.g., social anxiety and low self-esteem) and peer problems (e.g., victimization and social disintegration), and to prevent psychological disorders from emerging. The program is based on cognitive behavioral therapy (Ellis, 1962). During the training program an extended version of the RET ABC scheme (Rational Emotive Therapy, A = activating event, B = beliefs, C = consequence, Ellis, 1962) is used. This scheme states that situations induce beliefs, which induce feelings. These feelings induce behaviors, which lead to the consequence (Ringrose & Nijenhuis, 1996). Modification of cognitions is an important part of the program. In addition, improving body language is important, such as standing up straight and making eye contact, as well as learning to start and end conversations and how to deal with physical tension. The program is offered in the summer break just before children, aged around 12, make the transition from primary school to secondary school. The training program consists of four different parts: an introductory interview, a parental meeting, a two-day training program, and a booster session.

In the introductory interview the program is explained and agreements about participation in the program are made. The parental meeting serves to discuss more extensively the content and theory on which the training program is based. Parents receive tools to support their children after the training program is finished. In addition, parents have the opportunity to exchange experiences and problems with other parents.

In the last week of the summer break, the child training program takes place. 'Happy at School' is a group training program (approximately ten children per group). During two full days, children learn about social skills and difficult social situations. The importance of helpful and not helpful beliefs is explained by using an extended version of the RET ABC scheme. During the entire training program, modification of beliefs is important. Exercises (e.g., starting and ending a conversation) and themes are connected to the school situation and problems with peers at school. Theoretical lessons and role-playing are alternated. During the second day, practical exercises about tough situations like victimization, saying no and standing up for oneself, are conducted. The extended ABD schema is integrated in the exercises, and although some theoretical lessons are taught again, the second day consists mostly of role-playing.

After six weeks, the booster session takes place. During this session, every child talks about new experiences in secondary school, and tough situations are practiced when necessary. At this point, the trainers check if certain children need more support. If they do, children will be referred for additional treatment at mental health institutions.

Different reasons for the lack of effectiveness of social skills training programs have been suggested in prior research. First, it is known that children often have difficulties bringing newly learned social skills into practice in the same peer group, in which social status is relatively stable (Olweus, 1992). Therefore, the transition to secondary school in which children form new peer groups could therefore be an ideal moment for a social skills training program. Second, problems with social validity are common (van Vugt, Deković, Prinzie, Stams, & Asscher, 2012). This means that the learned social skills have no relevance to everyday life for children. However, exercises and themes in 'Happy at School' are closely connected to everyday life, which makes social validity high. In addition, prior research indicated that most social skills programs do not take place in a natural environment, making generalizability hard for children (Maag, 2006). 'Happy at School' is conducted in the secondary school building, which improves generalizability. Third, parents are often not involved in social skills training programs, even though parent involvement in the program is shown to be important (Spence, Donovan, & Brechman-Toussaint, 2000; Frankel, Cantwell, & Myatt, 1996; Frankel, Myatt, Cantwell, & Feinberg, 1997). By means of the parental meeting, 'Happy at School' involves parents in the program. Finally, drop out is known to be a problem in most therapies. In psychotherapy, estimates of attrition can run as high as 85% (Novick, Benson, & Rembar, 1981), however drop out is less of a problem in 'Happy at School' because of its short duration.

The Outcome Measures

The main purpose of 'Happy at School' is to reduce internalizing problems and peer problems. The term internalizing problems is often used to cover a range of behaviors that are characterized by self-related difficulties, such as fearfulness, anxiety, low self-esteem, and social withdrawal (Achenbach, 1982; Achenbach & Edelbrock, 1978).

Children with internalizing problems are often sad, withdrawn and quiet (Zahn-Waxler, Klimes-Dougan, & Slattery, 2000); behaviors which are characterized by an over-control of emotions (Achenbach & Ebelbrock, 1978). In study 3 and 4, internalizing problems (i.e., social anxiety, self-esteem and broad-band internalizing problems) will be studied.

For peer problems, the second outcome measure of study 3 and 4, we focus on peer problems accompanied with internalizing problems, such as victimization, having few friends and feeling lonely among peers.

Effectiveness

In the past few decades numerous interventions have been developed that aim to decrease internalizing problems and peer problems. However, only a few have thoroughly studied their effectiveness. To be able to choose the best intervention for a specific child, evidence-based working, accompanied with knowledge about moderating and mediating processes, is essential. The primary method to study the effectiveness of an intervention is to perform a randomized controlled trial (Kazdin, 2007), in which an intervention group following the intervention, and a control group not following the intervention, are compared. In study 3 and 4 the effectiveness of 'Happy at School' will be studied with a randomized controlled trial.

Moderation

In addition to measuring the effectiveness of 'Happy at School', we also examine for whom the program is (most) effective. Knowledge about moderators is informative in formulating inclusion and exclusion criteria, expected treatment responsiveness and possible needs for adapting the program for specific subgroups (Kraemer, Wilson, Fairburn, & Agras, 2002). In study 3 and 4, two moderators are studied. Firstly, we examine whether gender influences the effectiveness of the program. Differences between boys and girls in peer problems and internalizing problems are often considerable, especially in middle childhood (e.g., Bacon & Ashmore, 1985; Ruble, Martin, & Berenbaum, 2006). Prior studies also showed differences in treatment response in boys and girls with mixed results (Casey & Berman, 1985; Beelman, Pflingsten, & Lösel, 1994; Weisz, Weiss, Morton, Granger, & Han, 1992). Secondly, we examine whether the initial problem level influences the effectiveness of the program. Little research has been done in studying the influence of initial problem level on the effectiveness of programs reducing internalizing problems. To our knowledge, only one study found that internalizing problems decrease more when the initial problem level was high in children following a school-based intervention to reduce internalizing and externalizing problems (Vliek, Overbeek, & Orobio de Castro, 2013). In interventions dealing with externalizing behavior, two studies found that children with higher initial problems levels benefit more from an intervention (De Graaf, Speetjens, Smit, De Wolff, & Tavecchio, 2008; Leijten, Raaijmakers, Orobio de Castro, & Matthys, 2013).

Mediation

In addition to studying whether ‘Happy at School’ is effective and for whom, we also examine how the program works by studying mediation. A mediator is a variable that transmits the effect of an independent variable on a dependent variable (MacKinnon, Fairchild, & Fritz, 2007). Studying mediators informs us about working mechanisms and could help us optimize treatment effects (Kazdin, 2007).

Decreasing negative not helpful beliefs, and increasing positive helpful beliefs, is expected to be an important working mechanism of ‘Happy at School’. Therefore, in study 4, we examine whether changes in positive and negative beliefs mediates the effectiveness of ‘Happy at School’. In addition, by considering gender and initial problem level as moderators, we will be able to study whether this mediational process works the same for boys and girls and for children with high and low initial problem levels (moderated mediation).

Design of the Studies

In this dissertation we present four different studies with different designs. In Table 1 an overview of the different studies is provided. In Table 2 we present which constructs are examined, with which questionnaires, and at which waves.

Study 1. The research question of study 1 is: Do the Big Five personality traits and gender influence the relation between social anxiety and victimization?

In the first study that we describe in chapter 2, 1814 children ($M_{age} = 12$ years, 49.78% boys) who were in the last year of primary school participated, and they reported on self- and peer-reported victimization, social anxiety and the Big Five personality traits.

Schools were asked to participate in a study about the effectiveness of ‘Happy at School’. A screening was done to select children for this intervention study (study 3 and four). Although children were screened in two cohorts (in 2009 and 2010), due to technical issues, only data of the 2010 screening was used in study 1.

Study 2. The research questions of study 2 are: In what direction does the longitudinal relation between social anxiety and victimization go? Are there gender differences in this longitudinal relation?

In the second study that we described in chapter 3, 1669 children ($M_{age} =$ approximately 13 years, 45.1% boys) in the first year of secondary school participated. In the first year of secondary school, children reported on self- and peer-reported victimization and on self-reported social anxiety. In wave 1, collected in November 2011, secondary schools were contacted to participate in a study about the effectiveness of ‘Happy at School’ (study 3 and four). Data of all classmates of children participating in the effectiveness study was used for study 2. In June 2012, the second wave of study 2 was performed.

Study 3. The research questions of study 3 are: Is ‘Happy at School’ effective in reducing internalizing problems and peer problems? Is the effectiveness of the training program influenced by gender and initial problem level?

In the third study, that we described in chapter 4, 374 children (190 in the control group, $M_{age} = 12$ years, 42.78% boys) participated.

In a cluster randomized controlled trial, children were followed at four measurement waves with an initial data-collection at the end of elementary school, and three measurement waves thereafter (during their first year of secondary school). Randomization was done at the school level. Children reported on social anxiety, self-esteem, victimization and social disintegration. Parents reported on internalizing- and peer problems, teachers reported on internalizing problems and classmates reported on victimization via a nomination procedure. Children were selected for the longitudinal study based on a screening done at the end of their elementary school. Children were selected when they had, (1) high social anxiety scores, or (2) did not feel socially accepted *and* were being victimized, or (3) did not feel socially accepted *and* felt socially disintegrated, or (4) bullied others *and* felt socially disintegrated, or (5) bullied other children *and* did not feel socially accepted. A cut off score of 20% was used in all measurements, and calculated for boys and girls separately. Another selection criterion was that at least one of the parents was able to speak, write and read Dutch. Two exclusion criteria were formulated. First, children in special education settings could not participate in the program because of the moderate cognitive capacity needed to be able to follow 'Happy at School'. Second, selected children had to be moderately motivated to attend the program. During an introductory interview the trainer decided on the level of motivation.

Study 4. The research questions of study 4 were: Are changing positive and negative beliefs working mechanisms behind the effectiveness of 'Happy at School'? Are these working mechanisms the same for boys and girls and for children with different initial problem levels?

In the fourth study, that we have described in chapter 5, the same design and participants as in study 3 were used (RCT with 374 children participating). For this study, self-reports of victimization, social anxiety, self-esteem and social disintegration were used. Positive and negative beliefs were examined as possible working mechanisms (mediators), and were measured at all four waves. Gender and initial problem level functioned as moderators.

Table 1. *Overview of the Studies*

Ch.	Aim	Design	Waves	Outcomes	Predictors	Moderators & Mediators
2	Personality influencing the relation between social anxiety and victimization	Cross sectional Multi-informant	Screening data	Victimization	Social anxiety	Gender Personality traits
3	Longitudinal relation between social anxiety and victimization and gender differences	Longitudinal Multi-informant	T2 & T3 secondary school data	Victimization Social anxiety	Victimization Social anxiety	Gender
4	Effectiveness and moderators of 'Happy at School'	Cluster RCT Longitudinal Multi-informant	T0, T1, T2 & T3	Social anxiety Self-esteem Internalizing problems Victimization Social disintegration Peer problems	Treatment condition	Gender Initial problem level
5	The working mechanisms of 'Happy at School'.	Cluster RCT Longitudinal	T0, T1, T2 & T3	Social anxiety Self-esteem Victimization Social disintegration	Treatment condition	Gender Initial problem level Positive and negative beliefs

Table 2. *Overview of the Constructs*

Construct	Questionnaire	Informant	Wave
Internalizing problems	Child Behaviour Checklist (CBCL, Achenbach, 2007; Verhulst, van der Ende, & Koot, 2003) Teacher Report Form (TRF, Achenbach, 1991; Verhulst, van der Ende, & Koot, 1997)	CBCL: Parent-reports TRF: Teacher-reports	CBCL: T0, 1, 2, 3 TRF: T0, 2, 3
Social anxiety	Social Anxiety Scale (SAS-k, Dekking, 1983)	Self-reports	T0, 1, 2, 3
Self-esteem	Self-Perception Profile for Adolescents (Harter, 1988; Treffers et al., 2002)	Self-reports	T0, 1, 2, 3
Peer problems	Strength and Difficulties Questionnaire (SDQ, Goodman, 1997; SDQ-Dut, van Widenfelt, Goedhart, Treffers, & Goodman, 2003)	Parent-reports	T0, 1, 2, 3
Victimization	Olweus Bully/Victim Questionnaire (Olweus, 1986, KLRV-J; Liebrand, et al., 1991) Peer nominations as proposed by Coie, Dodge and Coppotelli (1982)	KLRV-J: self-reports Peer nominations: Classmates	T0, 2, 3
Social disintegration	Olweus Bully/Victim Questionnaire (Olweus, 1986, KLRV-J; Liebrand, et al., 1991)	Self-reports	T0, 2, 3
Personality traits	Big Five Inventory (BFI; Denissen, Geenen, van Aken, Gosling, & Potter, 2008)	Self-reports	T0
Positive and negative beliefs	Positive and Negative thoughts in children (PNG-k, Bracke & Braet, 1999)	Self-reports	T0, 1, 2, 3

Chapter 2

Socially Anxious Children at Risk for Victimization: The Role of Personality

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Abstract

This study focuses on the question of whether Big Five personality traits can affect, and to what extent, whether a socially anxious child will be victimized. A total of 1814 children participated in the study ($M_{\text{age}} = 11.99$ years). Children completed self-and-peer reports of victimization, which were aggregated, and self-reports of social anxiety and Big Five personality traits. A regression analysis was performed to study the moderating effect of personality traits on the relation between social anxiety and victimization. Socially anxious children scoring high on extraversion are less at risk for victimization than socially anxious children scoring low on extraversion. In addition, socially anxious boys, scoring high on agreeableness were less at risk for victimization than socially anxious boys scoring low on agreeableness. Conscientiousness, neuroticism and openness to experience did not moderate the relation between social anxiety and victimization.

Introduction

Social anxiety is a major problem for contemporary youth. Up to 40% of twelve-to-fourteen year old children experience problems such as social withdrawal or fear of evaluation (Essau, Conradt, & Petermann, 1999). These problems often persist into adulthood (Wittchen, Essau, von Zerssen, Krieg, & Zaudig, 1992). Social anxiety is defined as being scared to be evaluated as a person who fails, specifically in situations concerning social, physical or intellectual skills, or in situations where a child is made an exception because of physical appearance or his or her position in the group (Dekking, 1983). Social anxiety can have severe consequences, among others, victimization by peers (Essau et al., 1999). Victimization is aggressive and harmful behavior intended to hurt another person, marked by an imbalance of power between bully and victim (Olweus, 1993a, 1996). Although many socially anxious children have peer relation problems, not every child does. Some are able to interact with peers in an adequate manner (Chansky & Kendall, 1997; Flanagan, Erath, & Bierman, 2008). In this study we focus on victimization of socially anxious children in the last year of primary school (11-13 years of age). What factors could influence, and to what extent, whether a socially anxious child will be victimized? We aim to answer this question by taking children's personality traits into account. This is an important question that can influence the knowledge about the development of severe problems related to social anxiety and victimization, in addition to the development of interventions treating these problems. A few studies have examined contextual factors to explain why some socially anxious children are victimized to a greater or lesser extent than other socially anxious children. To our knowledge, this study is the first to examine the influence of all of Big Five personality traits on the relation between social anxiety and victimization in children.

Correlational research states unequivocally that a positive association exists between social anxiety and victimization by peers in children between 6 and 14 years of age (e.g., Flanagan et al., 2008; Hawker & Boulton, 2000). Characteristic behaviors of socially anxious children such as conflict avoidance, fear of rejection, unassertiveness, visible anxiousness (e.g., Creed & Funder, 1998; Davila & Beck, 2002), and poor social skills (Miers, Blöte, & Westenberg, 2010) make them easy targets for bullies (Egan & Perry, 1998; Grills & Ollendick, 2002).

This victimization can lead to social anxiety, leading to more withdrawal and anxiety, which, in turn, leads to more victimization. A vicious circle in which social anxiety and victimization are strengthening each other will be developed.

To our knowledge, few studies have examined factors influencing the association between social anxiety and victimization. However, some studies examined the association between social anxiety related constructs such as anxious solitary children (children who are anxious and play alone among familiar peers, Gazelle, 2006) or withdrawn children (children with behavior that is mainly characterized by inhibition, shyness and solitude, Rubin, Coplan, & Bowker, 2009). For example, school-based factors such as a warm supportive classroom are found to be important. It has been found that anxious solitary first grade children are rejected and victimized more in classrooms that exhibit a negative emotional climate (Gazelle, 2006). Furthermore, a school transition may, for some withdrawn children, be an opportunity to break through a cycle of negative peer reputations reinforcing their withdrawal (Rubin et al., 2009).

These prior studies addressed contextual factors, however little is known about how individual differences in personality modify the relation between social anxiety and victimization. Personality traits can be defined as individual differences in the tendency to behave, think and feel in certain ways that are consistent across time and situations (van Aken, Hutteman, & Denissen, 2011). Such individual differences could have an effect on the processes described above. A commonly used model in personality psychology is the Big Five model, which distinguishes extraversion (energetic approach; sociability, activity, assertiveness and positive emotionality), agreeableness (prosocial and communal orientation; altruism, tender-mindedness, trust and modesty), conscientiousness (prescribed impulse control; thinking before acting, delaying gratification, following norms and rules, and planning, organizing and prioritizing tasks), neuroticism (negative emotionality; feeling anxious, nervous, sad and tense) and openness to experience (depth of mental and experiential life; breadth, depth, originality and complexity of one's life) (John & Srivastava, 1999).

Personality traits are associated with both social anxiety and victimization. In late childhood, children who are victimized tend to have lower levels of agreeableness, extraversion and conscientiousness and higher levels of neuroticism (e.g., Bollmer, Harris, & Milich, 2006). A meta-analysis showed that socially anxious adults have lower levels of extraversion and conscientiousness and higher levels of neuroticism (Kotov, Gamez, Schmidt, & Watson, 2010). However, all these correlations were small to moderate in size, indicating that social anxiety and victimization cannot be equated with any personality trait, and that socially anxious and victimized individuals can still differ substantially in their scores on these traits. Could personality be important in moderating the relation between social anxiety and victimization? Some results pointing in this direction have been found for agreeableness. Socially anxious children scoring high on agreeableness experience low peer rejection and low victimization. In addition, when they are in third grade, they have markedly positive peer relations, and their peers report desirable social characteristics (Gazelle, 2008). In addition, when behavioral vulnerabilities (internalizing problems, physical weakness and low prosocial skills) in late childhood increased, victimization increased in children low on agreeableness whereas this relation was not present in children high on agreeableness (Jensen-Campbell et al., 2002). Despite their anxious behavior, more agreeable socially anxious children might be able to display responsive social behavior, such as sharing, listening to others and cooperation. Although these children may not take the initiative to interact with peers, the ability to show socially desirable behavior in response to peers (Gazelle, 2008), could protect them from victimization. Therefore, consistent with previous research we hypothesize that agreeableness moderates the relation between social anxiety and victimization. We expect that socially anxious children high on agreeableness are less at risk for victimization than socially anxious children low on agreeableness. In contrast to the previous studies, our study includes all personality traits, and not just agreeableness. This makes it possible to get a complete view of the moderating role of personality as a whole.

When regarding extraversion, although first thoughts may be that socially anxious children are introverted (the counterpart of extraverted), this is not true for all socially anxious children. Correlational analysis showed only a moderate negative relation between social anxiety and extraversion in adults (Kotov et al., 2010).

If this relation is also present in children, it might be that socially anxious children scoring high on extraversion are socially anxious in some situations, but not in other situations. Children scoring high on extraversion are outgoing, talkative, active and have high energy levels. In addition, they are socially directed and focused on positive emotions. Extraversion thus plays an important role in prosocial behavior. A socially anxious child scoring high on extraversion, might be better able to cope with negative peer feedback, better able to interact in a positive manner with peers and better able to make friends than a socially anxious child scoring low on extraversion. Therefore, we expect more extraverted socially anxious children to be less at risk for being victimized.

Based on the literature, we expect agreeableness and extraversion to be important in the relation between social anxiety and victimization. Despite the negative main effects of neuroticism and conscientiousness on social anxiety and victimization, we have no reason to expect that openness to experience, neuroticism and conscientiousness are influential in the relationship between social anxiety and victimization. However, in this study we want to study all of the personality traits of children for two important reasons. First, we believe that it is important to obtain a complete picture of personality as the Big Five is designed as a comprehensive framework (Caspi & Shiner, 2006). Second, different personality traits have overlapping characteristics. To really get an idea about the specific role one personality trait plays in the relation between social anxiety and victimization, it is necessary to control for the other personality traits simultaneously.

As an additional question, this study considers whether moderating effects of personality traits on the association between social anxiety and peer victimization depend on children's gender. Boys report being victimized more often and are nominated more often by peers as being victimized when they are in late childhood (Flanagan et al., 2008). A study of children in late childhood found equal frequency in overall victimization between boys and girls, but more relational victimization in girls, and more overt victimization in boys (Crick & Grotpeter, 1995). When regarding social anxiety, adolescent girls tend to report more social anxiety than adolescent boys (e.g., La Greca & Lopez, 1998). The link between social anxiety and victimization is stronger for boys than for girls in late childhood (Flanagan et al., 2008). Although we do not have specific hypotheses about gender differences in the moderating role of personality, the above studies show the importance of including gender in our analyses in an exploratory fashion.

Method

Participants

In the last year of primary school (when children are typically 11-13 years of age), 1847 children of 95 schools in The Netherlands participated in this study. When entire scales were missing, the data from these children were excluded from analyses. The final sample consisted of 1814 children (903 boys and 911 girls, $M_{age} = 11.99$ years, $SD = 0.58$ years).

Of all schools, 34.7% were located in the north of The Netherlands, 33.7% in the middle and 31.6% in the south. Of the sample, 81.0% were of Dutch origin and 18.2% had another ethnic background (mostly Moroccan, Turkish, Antillean or mixed). Also 0.8% of ethnic backgrounds were unknown.

This is fairly representative of the Dutch population, in which, 78.9% are of Dutch origin (Central Bureau of Statistics, 2013a). The social economic status of the sample is also representative of the Dutch population and includes diverse levels of social economic status. In 2.4% of the families both parents were unemployed. In 19.7% of the families only one of the parents had a paid job. In 75.8% of the families both parents had a paid job. Information was missing in 2.1% of the families.

Procedure

Schools were contacted first by letter to inform them about the study. In this letter, general information was given about the purpose of the study, time investment and a financial compensation for schools. Two weeks later, schools were contacted by phone for further information, and to answer questions that the schools might have. Consistent with school guidelines, passive informed consent was obtained when the school agreed to participate in the study. Parents were informed about the study by a letter and had the opportunity to withdraw their children from the study. Approximately 96% of children contacted participated.

The students filled in a pencil and paper questionnaires on personality, social anxiety and victimization during school hours. Additionally, peer nomination data on victimization were gathered. Teachers were responsible for the administrations of the questionnaires, and were instructed intensively prior to the assessment. Students had to fill in their questionnaires quietly. Confidentiality was assured. Teachers were instructed to set up the tables in rows of one. In addition, teachers were instructed to put the questionnaires in an envelope immediately after a child completed the questionnaires and to return the questionnaires to the researchers by mail.

Measures

Victimization. Victimization was measured by aggregated scores of self- and peer-reports. For self-reported victimization, the victimization subscale of a Dutch adaptation of the Olweus Bully/Victim Questionnaire (Olweus, 1986) was used (KLRV-J, Liebrand, van IJzendoorn, & van Lieshout, 1991). In the instructions, it was emphasized that victimization has a repetitive and intentional nature, and that it entails a power imbalance. Examples of what victimization is (e.g., saying mean things, kicking or hitting) and what it is not (when two kids of equal strength are fighting) were given. This definition of victimization captures verbal and physical victimization. The subscale consisted of five items (*How often did other children victimize you this school year? How often have you been victimized at school in the last 5 days? How often are you being hit, kicked, locked up or something like that? How often were you victimized previous school year? How often do children say mean things to you?*). Children were asked to respond to the items on a 5-point scale (1 = *never*; 5 = *several times a week*). A mean score of victimization was computed. The reliability score of the victimization subscale were reported to be adequate (van Lieshout, Verhoeven, Güroglu, Haselager, & Scholte, 2004). Cronbach's alpha in this study was .79.

Peer-reported victimization was calculated using peer nominations of victimization as proposed by Coie, Dodge and Coppotelli (1982). Children were asked to answer the following question: *'Which three classmates are often victimized by other children?'* Children were instructed that they could not nominate themselves. Cross-sex nominations were allowed.

Proportion scores were calculated to correct for the varying number of students in a class (received nominations divided by the number of classmates that participated in the study).

The association between self-and peer-reported victimization was relatively high ($r = .49$). Because of this relatively high correlation and to create a more reliable measure of victimization, scores of self-and peer-reported victimization were standardized and aggregated.

Social anxiety. Social anxiety was measured with a Dutch Social Anxiety Scale (SAS-k, Dekking, 1983). Participants responded to 46 statements about social anxiety distributed over four scales (1. anxiety concerning social skills and situations in which a child is being noticed, 2. anxiety concerning intellectual capabilities, 3. anxiety concerning physical capabilities, 4. anxiety concerning physical appearance). The questionnaire captures mainly affective and some somatic dimensions. The questionnaire does not specify whether the child should answer the questions regarding familiar or unfamiliar peers. Participants had to respond to statements by choosing 'yes' or 'no', corresponding to their (dis)agreement with the statement. Some examples of statements are: *'When I go into a room full of children, I get a shaky feeling.'* *'When I look different than other kids, I get an uncomfortable feeling.'* *'I get an uncomfortable feeling when I have to tell something in class.'* Mean scores on the four subscales together formed a total scale score. Negatively formulated items were recoded. Reliability and validity of the Social Anxiety Scale are reported to be adequate (Dekking, 1983). Cronbach's alpha for the total scale in this study was .85.

Personality traits. Personality traits were measured with a slightly age adapted version of the Big Five Inventory (BFI; Denissen, Geenen, van Aken, Gosling, & Potter, 2008). Participants had to respond to 44 statements, distributed over five scales measuring extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. They had to respond to statements on a 5-point scale (1 = *disagree strongly*; 5 = *agree strongly*). An example of an item for the extraversion scale is: *'I see myself as someone who is talkative.'* For the agreeableness scale: *'I see myself as someone who is generally trusting.'* For the conscientiousness scale: *'I see myself as someone who does a thorough job.'* An example of an item of the neuroticism scale is: *'I see myself as someone who can be tense.'* For the openness to experience scale: *'I see myself as someone who likes to think, plays with ideas.'* Mean scores per subscale were calculated. Negatively formulated items were recoded. Reliability and validity of the Big Five Inventory were reported to be adequate (Denissen et al., 2008). Cronbach's alphas in this study ranged from .69 to .73.

Results

Preliminary Analyses

Missing data. When items of scales were missing, these missing item values were estimated using the expected-maximization (EM) algorithm in Statistical Package for Social Sciences 20 (SPSS IBM Corp., 2011). In regard to social anxiety, the total scale score was computed based on four subscales.

EM was based on missing subscales instead of missing scale items in the social anxiety measure, as the questionnaire is a two point likert scale. EM is only allowed with a minimum of a four point likert scale answer format.

In regard to personality and self-reported victimization, EM was based on missing scale items. In regard to peer-reported victimization, EM was not necessary as there were no missing scale items.

In the social anxiety measure 3.7% of the subscales were missing and were imputed. In the personality scales, missing scale items ranged from 1.04% to 1.3% over the five scales. These were imputed. In self-reported victimization, 0.31% of the scale items were missing and were imputed.

Correlations, means and standard deviations. Preliminary analyses were performed to examine means, standard deviations and correlations for all variables that were studied (see Table 1). Social anxiety was positively correlated with victimization and neuroticism. Social anxiety correlated negatively with extraversion, agreeableness, conscientiousness, and with openness to experience. Victimization was negatively correlated with extraversion, agreeableness and conscientiousness and positively with neuroticism. Most correlations were small or medium, except for the correlations between neuroticism and social anxiety ($r = .51$), which can be considered high (Cohen, 1988).

Table 1 Means, Standard Deviations and Correlations for Personality Traits, Social Anxiety and Victimization

	<i>M</i>	<i>SD</i>	<i>Possible range</i>	1	2	3	4	5	6
1. Social anxiety	0.17	0.17	0-1	-					
2. Aggregated z-score victimization	0.00	0.86	-0.65-5.33	.36*	-				
3. Extraversion	3.68	0.68	1-5	-.44*	-.23*	-			
4. Agreeableness	3.85	0.60	1-5	-.08*	-.18*	.21*	-		
5. Conscientiousness	3.49	0.66	1-5	-.16*	-.11*	.19*	.44*	-	
6. Neuroticism	2.66	0.72	1-5	.51*	.20*	-.41*	-.24*	-.31*	-
7. Openness	3.40	0.66	1-5	-.09*	.04	.26*	.24*	.38*	-.14*

* $p < .01$

Primary Analyses

To study the influence of personality traits on the relation between social anxiety and victimization a three-step hierarchical regression analysis was performed. In step one, we entered social anxiety, personality traits and gender; in step two we added five two-way interaction variables of personality trait*social anxiety, five two-way interaction variables of personality trait*gender, and one two-way interaction variable of social anxiety*gender; and finally in step three we added five three-way interaction variables of personality traits*social anxiety*gender. Beforehand, we ensured that correlations between the five interaction variables (personality traits*social anxiety) were not too high (r ranged from -0.12 to -0.57). To reduce multicollinearity in the interaction analyses, predictor scores were centered (Aiken & West, 1991). When interaction effects with gender were analyzed, girls were coded as 1 and boys as 0.

The figures of the moderation effects between social anxiety and Big Five traits were constructed with an online tool as recommended by Preacher, Curran, and Bauer (2006) in which high and low scores of personality traits were represented by -1SD and +1SD of the trait. Results of the regression analyses are presented in Table 2. Significant moderation effects are probed in Figure 1.

The first step of the analysis revealed the main effects of social anxiety, extraversion, agreeableness, openness to experience and gender (see Table 2). Social anxiety and openness to experience were positively related to victimization, whereas extraversion and agreeableness were negatively related to victimization. Boys reported more victimization compared to girls. The second step of the analysis revealed that the main effects were qualified by two-way interaction effects between social anxiety and extraversion, between social anxiety and agreeableness, between gender and extraversion and between openness to experience and gender. The main effects were not qualified by any other two-way interaction effect. In step three a three-way interaction effect between social anxiety, gender and agreeableness was found, indicating that gender influenced the interaction effect between agreeableness and social anxiety. Agreeableness functioned as a moderator for boys ($\beta = -.14, p < .001$). For girls, agreeableness did not influence the relationship between social anxiety and victimization ($\beta = .01, p = .81$).

When examining the direction of the moderation effects of extraversion (see Figure 1A) the relation between social anxiety victimization was stronger for less extraverted children ($\beta = .41, p < .001$) than for children scoring higher on extraversion ($\beta = .27, p < .001$). For agreeableness (see figure 1B), the relation between social anxiety and victimization was stronger for less agreeable boys ($\beta = .51, p < .001$) and less agreeable girls ($\beta = .39, p < .001$) than for boys scoring higher on agreeableness ($\beta = .15, p < .05$) or girls scoring higher on agreeableness ($\beta = .17, p < .001$). Although the direction of the relationship was the same for boys and girls, the difference between high and low scores of agreeableness influencing the relationship between social anxiety and victimization was only significant for boys. These findings supported our hypothesis about extraversion, and about agreeableness for boys, but not for girls.

Table 2 Main and Moderation Effects of Personality Traits, Gender and Social Anxiety on Victimization

	<i>B</i>	<i>SE</i>	β	<i>R</i> ²	ΔR^2	ΔF
<i>Step 1</i>				.18	.18	54.80***
Constant	0.07	.03				
Social anxiety	1.78	.14	.34***			
Extraversion	-0.11	.03	-.09**			
Agreeableness	-0.22	.04	-.15***			
Conscientiousness	-0.03	.03	-.03			
Neuroticism	-0.02	.03	-.02			
Openness	0.18	.03	.14***			
Gender	-0.13	.04	-.08**			
<i>Step 2</i>				.19	.02	3.37***
Social anxiety X Extraversion	-0.54	.18	-.09**			
Social anxiety X Agreeableness	-0.53	.21	-.07*			
Social anxiety X Conscientiousness	0.06	.21	.01			
Social anxiety X Neuroticism	-0.02	.17	-.00			
Social anxiety X Openness	0.17	.18	.02			
Extraversion X Gender	0.18	.07	.11**			
Agreeableness X Gender	0.10	.08	.05			
Conscientiousness X Gender	-0.07	.07	-.04			
Neuroticism X Gender	-0.03	.07	-.02			
Openness X Gender	-0.13	.06	-.08*			
Social anxiety X Gender	-0.27	.29	-.04			
<i>Step 3</i>				.20	.01	2.63*
Social anxiety X Extraversion X Gender	-0.08	.40	-.01			
Social anxiety X Agreeableness X Gender	1.49	.45	-.15**			
Social anxiety X Conscientiousness X Gender	-0.30	.47	-.03			
Social anxiety X Neuroticism X Gender	0.15	.36	.02			
Social anxiety X Openness X Gender	-0.47	.40	-.05			

* $p < .05$, ** $p < .01$, *** $p < .001$

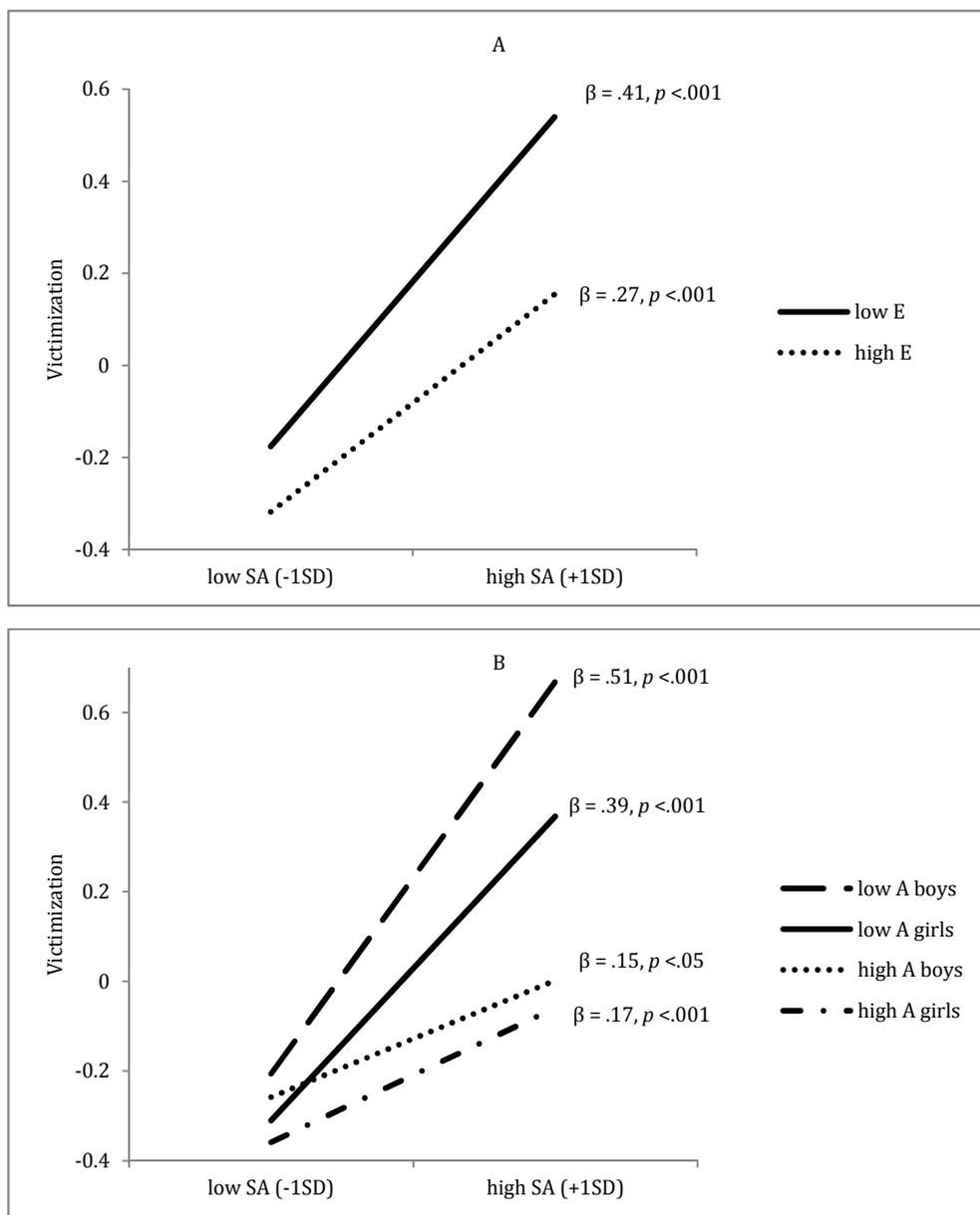


Figure 1. Graphical descriptions of the moderators extraversion and agreeableness.

SA = social anxiety, E = extraversion, A = agreeableness.

A. extraversion moderating the relation between social anxiety and victimization

B. agreeableness moderating the relation between social anxiety and victimization for boys and girls

Discussion

A relation between social anxiety and victimization has been found in several studies (e.g., Flanagan et al., 2008; Hawker & Boulton, 2000). However, not all socially anxious children are victimized. Some previous research has studied factors influencing the relation between social anxiety and victimization. Mainly contextual factors have been studied. In contrast to previous research, this study investigated all Big Five personality traits in relation to social anxiety and victimization. We expected, and found extraversion and agreeableness to function as protective factors against victimization in socially anxious children.

Correlational analyses replicated the findings of prior research that social anxiety and victimization were positively related (e.g., Flanagan et al., 2008; Hawker & Boulton, 2000). In addition, the results showed that social anxiety and victimization were moderately related with personality traits. To examine why some socially anxious children are victimized, while others are not, personality traits were taken into account.

With regard to extraversion, results of this study suggested that it works as a protective factor against victimization in socially anxious children. As mentioned in the introduction, more extraverted socially anxious children might be better able to cope with negative peer feedback, better able to interact in a positive manner with peers and better able to make friends. Overall, despite their social anxiety, these children may engage in more positive interaction, and are probably more accepted. Chances of becoming victimized could therefore be lower, because bullies generally pick on children who are not as popular as their victims (Veenstra, Lindenberg, Munnikma, & Dijkstra, 2010).

Additionally, highly extraverted children describe themselves as happier compared to less extraverted children (Fleeson, Malanos, & Achille, 2002). Positive affect might have a positive influence on the anxious schemata that plays an important role in social anxiety. In the schemata of socially anxious children strong cognitions around the fear of negative social evaluation are present (e.g., Hope, Rapee, Heimberg, & Dombeck, 1990; Kendall & Treadwell, 2007). These cognitions lead to withdrawal and thus, fewer positive social interactions. It might be that viewing oneself as extraverted gives some nuances to the cognitions in the schemata. Somewhat more extraverted children may still be socially anxious, but may believe themselves to be better able to interact with other children than less extraverted socially anxious children. This belief may lead to a more positive evaluation of the self and situations, and therefore lead to less socially anxious behavior (such as withdrawal) and perhaps also to less victimization.

With regard to agreeableness, this study showed it to function as a protective factor against victimization for children scoring high on social anxiety. This finding is in line with what we expected based on prior research (see Gazelle, 2008; Jensen-Campbell et al., 2002). Despite their social anxiety, more agreeable socially anxious children might be better able to engage in positive peer relations than their less agreeable socially anxious peers. However, what is remarkable about these results is that the effect of agreeableness on victimization is only present in boys. This could be explained by considering the different characteristics of 'boy victimization' and 'girl victimization'.

Whereas girls are more frequently relationally (covert, indirect) victimized, physical and verbal victimization (overt or direct victimization) occur more in boys (Crick & Bigbee, 1998; Crick & Grotpeter, 1995). This study focused mainly on verbal and physical victimization, which may be more in line with 'boy victimization'. Maybe if relational victimization were measured, agreeableness would have worked as a moderator between social anxiety and victimization in girls. The kind of victimization measured in the present study does not occur as much in girls as it does in boys. It might be that, in girls, scores are too low and the scales may not have enough variance to find a moderation effect causing a threshold effect. It would be interesting to examine this in future research. Also, in overt victimization there are more direct conflicts, whereas in relational victimization, the victimization is more about gossiping and excluding children. Children scoring low on agreeableness use less constructive conflict tactics (Jensen-Campbell & Graziano, 2001), which might provoke overt victimization more than it does relational victimization. Scoring high on agreeableness and thus using more constructive conflict tactics might protect a boy from getting involved in conflicts, and thus from (overt) victimization.

In the study of Gazelle (2008), in contrast to our study, it was found that agreeableness protects anxious solitary girls and not boys from victimization. It might be that methodological issues have played a role in these contradictory findings. In our study, agreeableness and social anxiety were measured with self-reports. In Gazelle's (2008) study agreeableness and anxious solitude were measured with a peer nomination procedure. Besides that, differences in findings could also be explained by the different constructs of social anxiety (which covers four different aspects of social anxiety as explained in the method section) versus anxious solitude (which was mainly about interaction with other children) and by different definitions of victimization. Future research should look into the difference between boys and girls regarding the influence of agreeableness on the relation between social anxiety and victimization.

Further, the protective role of extraversion and agreeableness against peer victimization among socially anxious children could also be explained by friendships. More extraverted or more agreeable children are likely to have more or higher-quality friendships (Gazelle, 2008) because of their prosocial behavior, which might protect them from victimization. Prior research has shown that high quality friendships protect socially anxious children from victimization (Hodges, Malone, & Perry, 1997).

In addition to the two traits that we hypothesized, we also considered conscientiousness, neuroticism and openness to experience as possible moderators of the relation between social anxiety and victimization. As we expected conscientiousness, neuroticism, or openness to experience did not influence the relation between social anxiety and victimization.

In addition to the interaction effect between social anxiety and personality, we would like to discuss one additional finding. Children, especially boys, high on openness to experience had higher chances of getting victimized as was shown by the interaction effect between openness to experience and gender. This might be because children scoring high on openness to experience are often interested in art, culture or science. In The Netherlands, these children, especially boys, are seen as a bit nerdy. Nerdy children are seen as weaker, and this makes them more vulnerable to victimization.

This study has important implications for prevention and early intervention. For prevention, teachers, parents and other important adults in children's lives should be more alert to children showing signs of social anxiety as well as low agreeableness or low extraversion, because these children are at higher risk for getting victimized. In this manner the development of a vicious circle (as mentioned in the introduction) can be prevented.

In early intervention, symptoms of social anxiety and victimization can be signaled and treated before escalating. It could be useful to teach children behavioral aspects of extraversion, such as assertiveness or taking initiative, or behavioral aspects of agreeableness, such as listening to other children or working together. Prior research has examined whether or not 'acting' extraverted is as good as 'being' extraverted. It was found that people 'acting' extraverted were happier than people 'acting' more introverted, regardless of whether the participant is more introverted or extraverted (Fleeson et al., 2002). Zelenski, Santoro and Whelan (2012) replicated this finding and also examined possible negative effects of 'acting' counter-dispositional ('acting' extraverted, but 'being' introverted) such as increased negative affect and possible cognitive fatigue. No such negative effects were found. However, long-term effects of 'acting' extraverted for introverted people have not yet been studied. It might be that acting counter-dispositional has positive effects on the short-term, but negative effects on the long-term (Zelenski et al., 2012). Further research should study this phenomenon. The kind of intervention described deals with state extraversion, not with trait extraversion. Although people are relatively stable in their trait extraversion/introversion, everybody behaves in an extraverted fashion from time to time (state extraversion) (McNeil, Lowman, & Fleeson, 2010). Thus, we do not aspire to change children's stable personality traits; instead, we hope to equip them with the behavioral tools to prevent peer victimization from happening.

Some strengths and limitations of this study should be discussed. The sample of this study was community based. Whether or not the results are applicable to children with clinical levels of social anxiety is unclear. For example, less variation in personality traits could exist in a clinical sample, influencing the moderating effects. However, in the line of early intervention and prevention, attention to children with sub-clinical levels of social anxiety is very useful.

This study used cross-sectional data. Longitudinal data would have given us the opportunity to learn more about the temporal order of the relation between social anxiety and victimization, and about the effect of personality traits on this relation. However, we assumed a vicious circle in which social anxiety and victimization strengthened each other. Therefore, when trying to break through this vicious circle, it might not matter whether the initial focus is on social anxiety or on victimization.

In this study, many variables have been studied. The degree of power is large enough to allow many variables in one equation. However, results should be interpreted with caution.

Although personality traits seem to affect whether a socially anxious child is being victimized or not, they are not fully accountable for the difference between socially anxious children being victimized and not being victimized, as effect sizes of the interactions were only small. For future research, it is important to examine other factors that may influence the relation between social anxiety and victimization.

A prior study for example showed that in early adolescents, close mutual friendship in social anxious children protects them from victimization (Erath, Flanagan, Bierman, & Tu, 2010). Other factors that might be important to study are for example popularity, friendships or self-esteem.

Furthermore it is important to keep in mind that the results of this study are representative for a Dutch population. The results may not be applicable to other populations. It has been assumed that in Western cultures social anxiety is mostly about the fear of social evaluation by others, whereas in Japanese or Korean cultures for example it is more about concerns of offending or embarrassing others (Hofmann, Asnaani, & Hinton, 2010). Furthermore, individualistic societies such as The Netherlands, value individuality, expression and assertion in social situations, but collectivistic societies value interpersonal accommodation, deference and cautiousness in social situations (Ho & Lau, 2011). Therefore, the relation between social anxiety and victimization, and the influence of personality on this relation may be different in non-Western cultures.

A strong point of this study is that victimization was measured both with self-reported victimization and with peer-reported victimization. Using multiple informants broadens the view of the study. By aggregating self-reports and peer-reports an even stronger measure of victimization was constructed. However, social anxiety and personality traits were only measured with self-reports. It could have been informative to take peer-reported social anxiety and personality into account. This would have given more information about whether or not socially anxious children see themselves in the same way as their peers do.

Conclusion

This study examined whether Big Five personality traits affect the extent to which a socially anxious child is being victimized. We found that extraversion and agreeableness (for boys) may protect socially anxious children from being victimized. In social anxiety research, individual differences between children are therefore important to consider.

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Chapter 3

Gender Differences in the Longitudinal Relation Between Social Anxiety and Victimization

Mulder, S. F., Hutteman, R., & van Aken, M. A. G. (2014). Gender differences in the longitudinal relation between social anxiety and victimization. *Manuscript submitted for publication.*

Abstract

This longitudinal study focused on the question as to whether social anxiety predicts increases in future victimization and/or vice versa. In addition, we studied gender differences in this association. A total of 1669 children (45.1% boys, approximately 13 years) of 65 secondary school classes participated. Self-reports and peer nomination data of victimization and self-reports of social anxiety were gathered at baseline (T0) and seven months later (T1). Latent multiple-group cross-lagged analyses were conducted to study the longitudinal associations between social anxiety and victimization, and the moderating role of gender. Results showed that higher baseline social anxiety scores predicted increased future peer- and self-reported victimization in boys, and increased future self-reported victimization in girls, over and above the stability of victimization. Reverse cross-lagged effects of victimization on changes in social anxiety were not found. Implications for prevention and early interventions that follow from these important results will be discussed.

Introduction

A long history of research has found consistent evidence for a relation between social anxiety and victimization (e.g., Flanagan, Erath, & Bierman, 2008; Hawker & Boulton, 2000 and see chapter 2). A vicious cycle between social anxiety and victimization has been suggested, with social anxiety and victimization mutually influencing each other over time (e.g., Hodges & Perry, 1999). However, most of this research was correlational and cross-sectional in nature, leaving the direction of longitudinal associations unknown. The aim of the present study was to fill this gap in the literature by examining whether a) baseline social anxiety predicts future victimization, b) baseline victimization predicts future social anxiety, or c) both. In addition, it was examined whether this longitudinal relation differs for boys and girls.

The Development and Consequences of Victimization

Victimization refers to aggressive and harmful behavior intended to hurt another person, marked by an imbalance of power between bully and victim (Olweus, 1993a, 1996). Prevalence rates of victimization differ enormously across studies and countries. For example, in Germany 8% of the children report to experience victimization weekly, whereas in England this percentage is 24% (Wolke, Woods, Stanford, & Schulz, 2001) and in the US 10.6% of the children report to be victimized frequently (Nansel et al., 2001). In The Netherlands 16% of the children reported being bullied at least a few times a month (Fekkes, Pijpers, & Verloove-Vanhoric, 2005).

Victimization is highly stable (e.g., Camodeca, Goossens, Terwogt, & Schuengel, 2002) and is associated with serious and long lasting consequences, such as intrapersonal problems (e.g., self-harm, depression, loneliness, negative self-concept, low social and global self-esteem, and general and social anxiety; Hawker & Boulton, 2000; Hay & Merldrum, 2010), interpersonal problems (e.g., having few friends, Hodges, Malone & Perry, 1997), and academic problems (e.g., poor academic performance and disliking and avoiding school; Juvonen, Graham, & Schuster, 2003; Kochenderfer & Ladd, 1996; Olweus, 1978).

In the development of peer victimization, three different aspects are assumed to play an important role: personal factors, peer-relational factors and family factors (Perry, Hogdes, & Egan, 2001). In the current study we focus on one specific personal factor, namely social anxiety.

The Development and Consequences of Social Anxiety

Social anxiety can be defined as being scared to be evaluated as a person who fails, specifically in situations concerning social, physical or intellectual skills, or in situations where a child is made an exception because of physical appearance or his or her position in the group (Dekking, 1983). Socially anxious behavior is, for example, characterized by deviant social interactions (Heerey & Kring, 2007), conflict avoidance, fear of rejection, unassertiveness, visible anxiousness (e.g., Creed & Funder, 1998; Davila & Beck, 2002), poor social skills (Inderbitzen-Nolan, Anderson, & Johnson, 2007; Miers, Blöte, & Westenberg, 2010), and social withdrawal and inhibition (Erath, Flanagan, & Bierman, 2007). Symptoms of social anxiety among youth are not rare. Up to 40 percent of 12–14-year-old children experience problems such as social withdrawal or fear of evaluation (Essau, Conradt, & Petermann, 1999).

Social anxiety is relatively stable across time (Hayward, et al., 2008), and its consequences can be severe and long lasting (e.g., Wittchen, Essau, Von Zerssen, Krieg, & Zaudig, 1992). These consequences include intrapersonal problems (e.g., depression and other broad band internalizing problems, and substance abuse; Essau, Conradt, & Petermann, 2002; Kendall, Safford, Flannery-Schroeder, & Webb, 2004), interpersonal problems (at risk for victimization, less liked by their peers and fewer positive and supportive friendships; La Greca & Lopez, 1998; Siegel, La Greca, & Harrison, 2009), and in severe forms of social anxiety, academic problems (difficulties with school attendance, and lower educational attainment; Khalid-Khan, Santibanez, McMicken, & Rynn, 2007; Rubin & Burgess, 2001)

The development of social anxiety is a multi-factor process in which genetic vulnerability, temperament factors, family factors and other environmental factors are all important (e.g., Essex, Klein, Slattery, Goldsmith, & Kalin, 2010; Detweiler, Comer, Albano, 2010; Ollendick & Hirshfeld-Becker, 2002).

The Association Between Social Anxiety and Victimization

Disentangling the longitudinal interplay between social anxiety and victimization and the direction of effect provides opportunities to intervene in these problematic phenomena in a more specific way. Different theories suggest different possible directions of the longitudinal relationship between social anxiety and victimization, which will be discussed below.

First, social anxiety might lead to future victimization. This can be explained by the social information processing bias. Prior research on socially anxious adults and adolescents confirmed such a bias (e.g., Beard & Amir, 2008; Miers et al., 2008), in which socially anxious individuals are prone to interpret social situations in a more negative manner than non-anxious individuals. Negative interpretations and expectation of events could lead to more withdrawal from and avoidance of situations involving peers. Behaviors associated with this withdrawal, such as fewer positive interactions, unassertiveness, or visible anxiousness, could heighten the risk of victimization (Creed & Funder, 1998; Davila & Beck, 2002; Egan & Perry, 1998; Grills & Ollendick, 2002; Siegel et al., 2009).

Along the same lines, developmental models suggest that low levels of prosocial behavior combined with high levels of social withdrawal, one of the most characteristic behaviors of social anxiety, prevent socially effective interactions (Ollendick & Hirshfeld-Becker, 2002). Socially effective interactions are essential in developing proper social skills. When social skills are not properly developed, this decreases social acceptance and increases this risk of victimization (Ollendick & Hirshfeld-Becker, 2002)

In contrast to the two theories described above, which suggest a prospective relation from social anxiety to victimization, it has also been proposed that victimization leads to social anxiety. Children that are victimized experience multiple incidences of exposure to harmful situations. They could become hypervigilant to situations including peers and to the opinions of others (Grills & Ollendick, 2002). This hypervigilance could lead to social anxiety symptoms like fear of being evaluated negatively by peers, and to avoidance of social interaction with peers.

From an empirical perspective, studies examining the prospective relation between social anxiety and victimization have yielded inconsistent results.

For example, Storch, Masia-Warner, Crisp and Klein (2005) examined prospective effects between social anxiety and victimization in a one-year follow-up study with self-reports in thirteen year-olds from urban parochial middle class families. They found that change in social anxiety was positively associated with change in relational victimization, but no cross-lagged effects were found. Different findings were revealed in a study with thirteen year-olds (mostly from upper and middle class families; Vernberg, Abwender, Ewell, & Beery, 1992) on victimization (exclusion and overt victimization) and social anxiety, in which no effects of social anxiety on the later frequency of victimization were found, but a significant effect of the frequency of victimization on later social anxiety. However, this was only found for exclusion and not for overt victimization (Vernberg et al., 1992). Two studies found associations in both directions: In a two-month longitudinal study using self-reports in a slightly older (16 years) sample of adolescents a cross lagged-effect of relational victimization on social anxiety for girls, but not for boys was found. In addition a cross-lagged effect of social anxiety on relational victimization for both boys and girls was found. This study sample consisted of adolescents from suburban public high schools and middle class families with an overrepresentation of Hispanic adolescents (78%; Siegel et al., 2009). Similar results were found in a one-year longitudinal study examining the broader construct of internalizing problems and victimization in early adolescents from white, middle class families. Drawing on peer ratings of victimization, a significant bidirectional association was found (Hodges & Perry, 1999). In sum, two studies found a bidirectional relation, one study found correlated changes, and one study found a prospective relation in which victimization leads to social anxiety.

Although these studies provide useful first insights into the relationship between social anxiety and victimization, they have several limitations. First, the samples were rather specific, making generalizability difficult. Second, the studies used either self-reports or peer-reports of victimization, but did not combine both, leading to a higher risk of results being susceptible to shared method variance and leading to overly inflated relations (e.g., Crick & Bigbee, 1998; Storch et al, 2005).

The Present Study

In the current study we aimed to disentangle the direction of the longitudinal relation between social anxiety and victimization. In contrast to prior studies, the current study was a longitudinal study with a large community based sample. This sample enabled us to draw conclusions that are generalizable to the community of early adolescents. In addition, both self- and peer-reports of victimization were collected, which is important for several reasons: Children themselves are in the best position to report on the incidence of perceived victimization. However, peer-reports provide a useful different judgment on victimization. In addition, the use of peer reports reduces the chances of finding results that are based on shared method variance (e.g., Crick & Bigbee, 1998; Storch et al., 2005) when self-reported victimization is combined with self-reported social anxiety. Moreover, the correlation coefficient between peer-reported and self-reported victimization is typically only .2 - .4 (Juvonen, Nishina & Graham, 2001), suggesting that both constructs (peer-reported victimization and self-reported victimization) are not identical, but complementary (Juvonen et al., 2001). Including both informants allowed for a comprehensive view of victimization compared to using only one informant source.

Prior research and theories on the development of both social anxiety and victimization do not provide a clear hypothesis with regard to the direction of the relation between social anxiety and victimization. The first aim of the study was therefore to disentangle the bidirectional relation between social anxiety and victimization.

The second aim of our study was to examine the moderating effect of gender on the relation between social anxiety and victimization. Boys and girls have been found to differ in both social anxiety and victimization. With regard to the latter, victimization occurs as often in boys as in girls, but in girls victimization is more relational and in boys more overt (Crick & Bigbee, 1998; Crick & Grotpeter, 1995). Concerning the former, girls report more social anxiety than boys (e.g., La Greca & Lopez, 1998). More importantly, the relation between social anxiety and victimization has been found to be stronger for boys than for girls in late childhood (Flanagan et al., 2008; and chapter 2). These differences between boys and girls indicate that it is important to consider gender effects in answering the question as to whether baseline levels of social anxiety predict future victimization, the other way around, or both. Moreover, previous research that has examined gender differences in the association between social anxiety and peer victimization has mostly exclusively relied on self-reports. The present study includes both self- as well as peer-reports to examine whether gender differences are a phenomenon that can be found across raters, or whether they only exist in the eye of the beholder.

Method

Participants

A total of 1669 children of 65 school classes participated in this study. All children were in secondary school (mean age approximately 13 years). The sample consisted of 753 (45.1%) boys and 769 (46.1%) girls. Of 147 (8.8%) children gender was unknown. The study sample was a heterogeneous group. Schools were highly diverse. First, schools with different religions were represented in the sample (e.g., Public schools, Roman Catholic schools, Protestant school, and Reformed schools). Second, school sizes varied, including small and large schools (mean number of first year students = 244.08, $SD = 120.35$). Third, children were in classes of different educational level (36.8% of school classes were of lower levels, 46.3% of middle levels and 12.7% of higher levels. Information was missing in 4.2% of the schools). Fourth, schools were located in areas with different densities of population (62.1% of school in cities with more than 25,000 residents, 37.9% of schools in villages less than 25,000 residents).

Procedure

In November 2010 (T0) we contacted 137 secondary school classes (of 73 different schools) as part of a larger intervention study (see chapter 4). Schools were contacted by letter to inform them about a study on victimization in secondary school. In this letter they were informed that they would receive a package with materials for the study in two weeks, and they were kindly requested to participate in the study. Two weeks later they received the questionnaires, an instruction letter, return envelopes and letters to inform the parents about a study. Of the contacted school classes, 65 (47.44%) agreed to participate in the study.

Consistent with school guidelines, passive informed consent of parents was obtained when the school agreed to participate in the study. Parents were informed about the study by a letter and had the opportunity to withdraw their children from the study.

Students filled out paper- and-pencil questionnaires on social anxiety and victimization during school hours. Teachers were responsible for the administrations of the questionnaires and were instructed intensively prior to the assessment. Students were requested to fill out their questionnaires quietly and confidentiality was assured. Teachers were instructed to set up the tables in rows of one. In addition, teachers were instructed to put the questionnaires in an envelope immediately after a child completed the questionnaires and to return the questionnaires to the researchers by mail.

In June 2011 the whole procedure, including the passive informed consent was repeated for the second measurement wave (T1).

Measures

Victimization. Victimization was assessed by means of self-reports and peer reports. Self-reported victimization was measured with the victimization subscale of the Olweus Bully/Victim Questionnaire (Olweus, 1986, Dutch adaptation: KLRV-J, Liebrand, van IJzendoorn, & van Lieshout, 1991). In the instructions, it was emphasized that victimization has a repetitive and intentional nature, and that it entails a power imbalance. Examples of what victimization is (e.g., saying mean things, kicking or hitting) and what it is not (when two kids of equal strength are fighting) were given. The subscale consisted of four items (*How often did other children victimize you this school year? How often have you been victimized at school in the last 5 days? How often are you being hit, kicked, locked up or something like that? How often do children say mean things to you?*). Children were asked to respond to the items on a 5-point scale (1 = *never*; 5 = *several times a week*). Higher scores indicated more victimization. Cronbach's alphas in this study were .74 at T0 and .75 at T1. To correct for the relatively low reliability, victimization was included as a latent factor in our model. The four items were used as indicators for a latent variable of self-reported victimization.

Peer-reported victimization was assessed using peer nominations of victimization as proposed by Coie, Dodge and Coppotelli (1982). Children were asked to answer the following question: *'Which three classmates are often victimized by other children?'* Children were instructed that they could not nominate themselves. Cross-sex nominations were allowed. Proportion scores were calculated to correct for the varying number of students in a class (received nominations divided by the number of classmates that participated in the study - 1 because they could not nominate themselves). The measure of peer-reported victimization was a one-item manifest variable.

Social anxiety. Social anxiety was assessed by means of a Dutch Social Anxiety Scale (SAS-k, Dekking, 1983). Participants responded to 46 statements about social anxiety distributed over four scales (1. anxiety concerning social skills and situations in which a child is being noticed, 2. anxiety concerning intellectual capabilities, 3. anxiety concerning physical capabilities, 4. anxiety concerning physical appearance). The questionnaire mainly captures affective and some somatic dimensions.

Participants were asked to respond to statements by choosing 'yes' or 'no', corresponding to their (dis)agreement with the statement. Some examples of statements are: *'When I go into a room full of children, I get a shaky feeling.'* *'When I look different than other kids, I get an uncomfortable feeling.'* *'I get an uncomfortable feeling when I have to tell something in class'.* Cronbach's alpha in this study was .95 at T0 and .94 at T1. The four subscales were used as indicators for a latent variable of social anxiety.

Analyses

The longitudinal associations between social anxiety and victimization were investigated using latent cross-lagged models in Mplus version 7 (Muthén & Muthén, 2013). Missing data were handled using full information maximum likelihood (FIML) in which all available data were used. Model fit was evaluated on the basis of the Comparative Fit Index (CFI), the Tucker–Lewis Index (TLI), the Root-Mean-Square Error of Approximation (RMSEA), and the Standardized Root Mean Residual (SRMR; Hu & Bentler, 1998, 1999). CFI and TLI values of .90 or above and RMSEA and SRMR values of .08 or below indicate acceptable fit. Children were nested in schools. This violated the assumption of non-independence of the data. School ID was included as a cluster variable to control for this non-independence of observations (Muthén & Satorra, 1995).

To test the longitudinal reciprocal associations between social anxiety and victimization, we examined cross-lagged effects from social anxiety at T0 to victimization at T1 and vice versa. By estimating the stability of both constructs over time as well as their concurrent associations and the degree to which both constructs mutually influenced each other over time, we were able to investigate to what degree social anxiety predicted changes in victimization over time, and vice versa. The model was estimated twice, once with self-reported victimization and once with peer-reported victimization.

In addition, gender differences were investigated by conducting multiple-group analyses. The model was simultaneously specified for both male and female subsamples. Gender differences were tested in four steps. In the first step, all paths were fixed. In the second step, only cross-lagged effects were freely estimated. In the third step, both cross-lagged effects and stabilities of social anxiety and victimization were freely estimated. In the fourth step, within-wave correlations, stabilities and cross-lagged effects were freely estimated. Per step it was tested whether the model fit was significantly better compared to the model in which all parameters were fixed. A better fit was tested by the use of the DIFFTEST command. This test is used to calculate chi-square differences in nested models. Chi-square differences are calculated based on log likelihood and scaling correction factors of the nested model compared to the comparison model. A significant chi-square difference indicated a better model fit.

A graphical representation of the latent cross-lagged model can be found in Figure 1 and Figure 2. To ensure that change in the latent cross-lagged models was explained by structural relations over time and not by variance in trait measurement over time, we analyzed our models under strict factorial invariance.

Strict factorial invariance requires cross-measurement occasion equality in factor loading, intercepts, and residual variances (Meredith, 1993). In addition, indicator residuals were allowed to correlate across waves.

Results

Descriptive Analyses

Preliminary analyses were performed to examine means, standard deviations, and correlations for the total sample and for boys and girls separately (see Table 1).

Table 1 Means, Standard Deviations and Correlations for Social Anxiety and Victimization at T0 and T1

	<i>n</i>	<i>Observed range</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
<i>Total group</i>										
1. Social anxiety T0	1156	0-1	0.19	.20	-					
2. Social anxiety T1	1119	0-1	0.16	.19	.77*	-				
3. SR Victimization T0	1477	1-5	1.45	.57	.35*	.27*	-			
4. SR Victimization T1	1457	1-4.5	1.47	.59	.29*	.39*	.57*	-		
5. PR Victimization T0	1642	0-.94	0.06	.14	.22*	.18*	.43*	.39*	-	
6. PR Victimization T1	1649	0-.96	0.06	.16	.20*	.23*	.33*	.44*	.74*	-
<i>Boys</i>										
1. Social anxiety T0	524	0-.94	0.14	.17	-					
2. Social anxiety T1	520	0-.91	0.12	.16	.77*	-				
3. SR Victimization T0	669	1-4.5	1.52	.62	.35*	.29*	-			
4. SR Victimization T1	657	1-4.5	1.51	.62	.36*	.42*	.64*	-		
5. PR Victimization T0	747	0-.94	0.08	.17	.29*	.24*	.46*	.49*	-	
6. PR Victimization T1	751	0-.96	0.08	.19	.28*	.34*	.41*	.51*	.78*	-
<i>Girls</i>										
1. Social anxiety T0	527	0-1	0.23	.22	-					
2. Social anxiety T1	521	0-1	0.20	.21	.76*	-				
3. SR Victimization T0	684	1-5	1.47	.71	.41*	.36*	-			
4. SR Victimization T1	679	1-5	1.50	.77	.29*	.40*	.50*	-		
5. PR Victimization T0	761	0-.94	0.04	.11	.25*	.21*	.35*	.25*	-	
6. PR Victimization T1	758	0-.91	0.06	.14	.19*	.20*	.21*	.36*	.69*	-

SR Victimization = self-reported victimization, PR Victimization = peer-reported victimization.* $p < .01$

Measurement Model

Self-reported victimization. Model fit was good ($\chi^2(112, N = 1669) = 315.30, p < .001$, CFI = .97, TLI = .97, RMSEA = .03, SRMR = .04). Gender differences were tested in four steps. In the first step all paths were fixed. Second, cross-lagged effects were freely estimated for boys and girls ($\Delta \chi^2(4, N = 1522) = 4.33, p = .11$). Third, both cross-lagged effects and stabilities of social anxiety and victimization were freely estimated for boys and girls ($\Delta \chi^2(4, N = 1522) = 5.42, p = .25$). Fourth, within-wave correlations, stabilities and cross-lagged effects were freely estimated for boys and girls ($\Delta \chi^2(6, N = 1522) = 7.94, p = .24$). None of the 2nd to 4th steps resulted in a better model fit than the first model, leading to the conclusion that there were no gender differences in stabilities, concurrent correlations and cross-lagged effects.

Social anxiety and self-reported victimization were associated at baseline ($B = .06, p < .001$). Social anxiety was stable over time with a stability coefficient of .75 ($p < .001$). Self-reported victimization was also stable with a stability coefficient of .66 ($p < .001$).

There was a significant cross-lagged effect of social anxiety at baseline on future self-reported victimization ($B = .43, p < .01$). Higher levels of baseline social anxiety predicted an increase in future self-reported victimization. The reverse effect of self-reported victimization on prospective social anxiety was not found (see Figure 1).

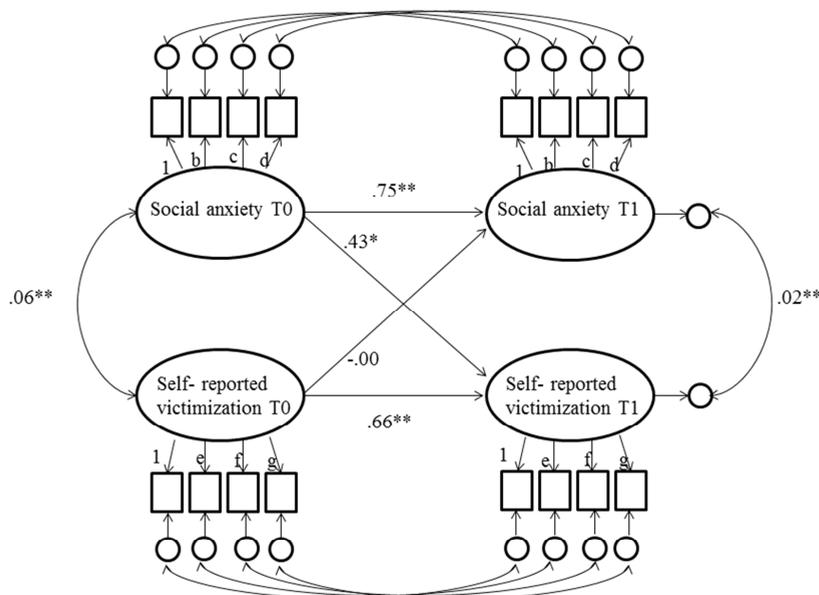


Figure 1. Latent cross-lagged model of the associations between social anxiety and self-reported victimization.

Factor loadings (b–g), measurement intercepts, and residual variances were constrained to be equal across waves, and indicator residuals were allowed to correlate over time. * $p < .01$ ** $p < .001$.

Peer-reported victimization. The model fit under strict factorial invariance was good ($\chi^2(38, N = 1669) = 125.32, p < .001, CFI = .98, TLI = .98, RMSEA = .04, SRMR = .03$). Again, gender differences were tested in four steps. In the first step all paths were fixed. Second cross-lagged effects were freely estimated for boys and girls. Third, both cross-lagged effects and stabilities of social anxiety and victimization were freely estimated for boys and girls. Fourth, within-wave correlations, stabilities and cross-lagged effects were freely estimated for boys and girls. When cross-lagged effects were freely estimated and concurrent correlations and error correlations were fixed, the model fit was significantly better compared to the model in which all parameters were fixed ($\Delta \chi^2(2, N = 1522) = 6.63, p < .05$). Steps three and four did not improve the model fit anymore (step 3: $\Delta \chi^2(4, N = 1522) = 6.71, p = .15$; step 4: $\Delta \chi^2(6, N = 1522) = 9.31, p = .16$).

Social anxiety and peer-reported victimization were associated at baseline ($B = .01, p < .001$). Social anxiety was stable over time with a stability coefficient of .73 ($p < .001$). Peer-reported victimization was slightly more stable with a stability coefficient of .84 ($p < .001$). Gender differences were found for the cross-lagged effects. There was a significant cross-lagged effect of social anxiety at baseline on future peer-reported victimization in boys.

Higher levels of baseline social anxiety predicted an increase in future peer-reported victimization. The reverse effect of peer-reported victimization on prospective social anxiety was not found for boys. For girls no significant cross-lagged effects were found at all (see Figure 2).

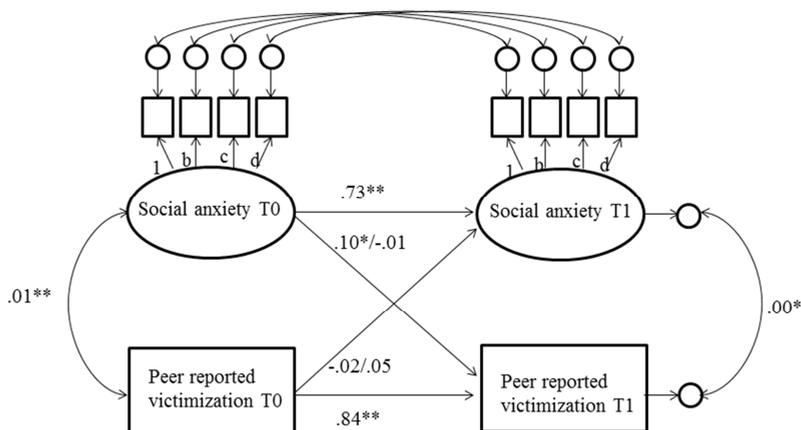


Figure 2. Latent cross-lagged model of the associations between social anxiety and peer-reported victimization.

Factor loadings (b–d), measurement intercepts, and residual variances were constrained to be equal across waves, and indicator residuals were allowed to correlate over time. Estimates of B are given for boys/girls. * $p < .01$ ** $p < .001$.

Discussion

The main aim of the present study was to examine the longitudinal interplay between social anxiety and victimization and to disentangle the direction of effects. This study was the first to use both self-reports and peer-reports of victimization in examining the relation between social anxiety and victimization. The results showed that baseline social anxiety predicted future self-reported victimization in boys and girls, and future peer-reported victimization in boys. Baseline victimization did not predict future social anxiety. Thus, social anxiety predicted an increase in self-reported victimization in both boys and girls, and an increase in peer-reported victimization in boys. This is partly in line with previous research, which showed that social anxiety predicted an increase in victimization for both boys and girls (Siegel et al., 2009; Hodges & Perry, 1999). However, in contrast to prior research (Hodges & Perry, 1999; Siegel et al., 2009; Vernberg et al., 1992) we did not find victimization to predict future social anxiety.

Apparently, for girls the prospective relation from social anxiety to victimization only exists when self-reports of both victimization and social anxiety are used. In boys the prospective relation from social anxiety to victimization exist for both self- as well as peer-reports. A combination of the social information processing bias and gender roles might explain this gender difference. Socially anxious children are prone to interpret social situations in a more negative manner than non-anxious children (e.g., Beard & Amir, 2008; Miers et al., 2008).

It could be that socially anxious children (both boys and girls) are prone to interpret (ambiguous) situations as situations in which they are victimized, explaining the effects when self-reports are used. However, perhaps only in boys these situations are also observed as victimization situations by peers, because of male gender roles. These roles describe boys as being dominant and tough. Socially anxious boys do not fit in this gender role, which might make them an easy target for bullies. For girls, on the other hand, social anxiety might be less discrepant with gender roles. These differences in gender roles in the eye of peers might explain why girls' social anxiety does not lead to later peer-reported victimization.

This study showed that there is a prospective relation from social anxiety to victimization. This was in line with the social information procession bias and with the theory about low levels of prosocial behavior combined with high levels of social withdrawal (Beard & Amir, 2008; Ollendick & Hirshfeld-Becker, 2002; Miers et al., 2008) and also in line with previous empirical studies (Siegel et al., 2009; Hodges & Perry, 1999). Almost every child experiences being hurt at one time, for example by being excluded from play, hit by a peer, or gossiped about. Most children cope well with these incidents (Stassen Berger, 2007), but it could be that socially anxious children react in such a way that it is reinforcing for the bully.

In contrast to our expectations based on the theory of hypervigilance in victimized children (Grills & Ollendick, 2002) and previous studies examining the relation between social anxiety and victimization (Hodges & Perry, 1999; Siegel et al., 2009; Vernberg et al., 1992), no prospective relation from victimization to social anxiety was found in this study. The relation between social anxiety and victimization could exist for a specific group and not for other groups, because of moderating factors that influence the cross-lagged relation from victimization to social anxiety. Genetic vulnerability, temperament factors and family factors such as attachment or parenting styles are known to influence the development of social anxiety (e.g., Essex et al., 2010; Detweilier et al., 2010; Ollendick & Hirshfeld-Becker, 2002).

Limitations and Future Research

Some strengths and limitations of the study should be discussed. This study is one of the first to longitudinally study the relationship between social anxiety and victimization in a large community based sample. In contrast to most prior studies, the current study used a heterogeneous, community based sample (diverse schools; religion, size, educational level, diverse levels of SES, both rural and urban areas), and thus has high generalizability. In addition the current study used multiple informants, which strengthens the results that are found and reduces the chances of finding inflated relations caused by shared method variance.

This study used a normative sample. Therefore, results cannot be generalized to a clinical sample. However, the results of this study are important for prevention and early intervention since social phobia as a clinical disorder emerges in the late teenage years. Consequently, intervening in children with elevated, but not clinical, levels of social anxiety might be very important and useful in preventing social phobia from emerging. Moreover, the results of this study are also only generalizable to other western societies.

Although this study showed a prospective relation from social anxiety to victimization, this relation was small, as is usually the case for cross-lagged effects.

Other factors, such as the group process of victimization (e.g., Olweus, 2001; Salmivalli, 2010) are known to be important. Also, for example, the frequency, duration, stability, and severity of victimization influence the consequences of victimization (Kochenderfer Ladd & Ladd, 2001).

In addition, family-factors can play an important role in determining the incidence of both victimization and social anxiety (e.g., Detweilier et al., 2010; Ollendick & Hirshfeld-Becker, 2002; Perry et al., 2001) Future research should examine the magnitude of these other factors on the relationship between social anxiety and victimization.

This study used self-reports and peer-reports of victimization, showing different results for boys and girls. For future research it could be interesting to examine how parents and teachers observe the prospective relation between social anxiety and victimization. This is important, because parents and teachers can be of importance in the prevention of victimization in socially anxious children. From a social information processing perspective, the associations between social anxiety and victimization found in the present study might be explained by a social information processing bias in socially anxious children. Future studies examining the processes underlying this association might want to examine whether social information processing biases act as a mediator.

Implications

This study has important implications for both the literature about social anxiety and victimization and for practical purposes. This study contributes to the debate about the direction of the association between social anxiety and victimization. Although this study is not an experimental study and conclusions about a causal relation should be made with caution, this study does clarify that social anxiety can lead to peer victimization over time.

For teachers and parents it is important to know that socially anxious children are at risk for victimization. Victimization can have serious consequences for children in different aspects of life, such as in peer relations and well-being (e.g., Camodeca et al., 2002; Fekkes et al., 2005; Hay & Merldrum, 2010; Hodges et al, 1997). It is therefore important that teachers and parents keep a close eye on socially anxious children so that they can prevent victimization for emerging, or that they can intervene rapidly when victimization starts. In addition, socially anxious children could be taught behavioral tools for interacting with peers, such as standing up straight, making eye contact and learning how to start a conversation (see for example 'Happy at School', Faber, 2005; chapter 4). Learning and adopting these behavioral tools could prevent victimization from happening.

Conclusion

This study examined the longitudinal relation between social anxiety and victimization. Baseline social anxiety predicted an increase in future self-reported victimization for boys and girls, and increased future peer-reported victimization in boys, but not vice versa.

Chapter 4

Effectiveness and Moderators of the Preventive Child Training Program 'Happy at School': A Cluster Randomized Controlled Trial

Mulder, S. F., van Aken, M. A. G., Raaijmakers, Q. A. W., & Onrust, S. A. (2014). Effectiveness and moderators of the child program 'Happy at School': A cluster randomized trial. *Manuscript submitted for publication.*

Abstract

In this cluster RCT, the effectiveness of 'Happy at School', a program for children with internalizing problems and peer problems, was studied during four measurement waves. In addition, moderators of initial problem level and gender were included. A total of 374 children with internalizing problems and peer problems that were about to make the transition from primary school to secondary school participated in the study ($M_{age} = 12$ years, $SD = 6.14$ months, 42.78% boys, 85.3% of Dutch origin). For all children 'Happy at School' was effective in increasing self-esteem and in decreasing parent-reported internalizing problems. In addition, the program was largely effective in reducing social anxiety, self-reported victimization and social disintegration in boys with higher initial problem scores, but not in girls. 'Happy at School' was not effective in reducing parent-reported peer problems and peer-reported victimization. Teachers reported noticing more internalizing problems in the intervention group compared to the control group for both boys and girls. This could be explained by lower thresholds for children to report problems to teachers as a result of following 'Happy at School'.

Introduction

Internalizing problems and peer problems such as social anxiety, low self-esteem, social disintegration and victimization are common problems in late childhood, with severe and long lasting consequences such as an increased risk of mental health problems like depression and anxiety or avoidance and problems such as having few friends (Hawker & Boulton, 2000; Hodges, Malone, & Perry, 1997; Kaltiala-Heino, Rimpelä, Marttunen, Rimpelä, & Rantanen, 1999; Kumpulainen et al., 1998; Pine, Cohen, Gurley, Brooks, & Ma, 1998; Steiger, Allemand, Robins, & Fend, 2014; Wittchen, Essau, Von Zerssen, Krieg, & Zaudig, 1992). Of children who have been victimized, 19% experience internalizing problems, while only 6% of the children who never have been victimized experience internalizing problems (Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005). Therefore, it is important to intervene in these problems. So far, studies have shown modest effects of intervention that are most commonly used. It might be that the transition from primary school to secondary school (at the age of approximately 12 years of age) is an ideal moment to intervene. However, this has not been studied before.

In the current study, we examined the effectiveness of 'Happy at School' (Faber, 2005), which is an indicated preventive social skills training program for children about to make the transition from primary school to secondary school. The goal of the program is to reduce internalizing problems (e.g., social anxiety and low self-esteem) and peer problems (victimization, having few friends, feeling lonely or less liked among peers) and to prevent psychological disorders from emerging. In addition to the effectiveness, we studied for whom the program works best, by studying the influence of gender and initial problem level on the effectiveness of the program.

Unfortunately, studies examining the effectiveness of interventions meant to reduce internalizing problems and peer problems often are mixed (Merry, McDowell, Hetrick, Bir & Muller, 2004; Spence, 2003). For example some social skills training programs are moderately effective in improving social skills of withdrawn children (e.g., Sheridan, Kratochwill, & Elliott, 1990), but for other training programs results are inconsistent, often with problems of generalizability (Spence, 2003; Schneider, 1992). Moreover, effects are often for a short period of time, and then effects diminish (Spence, 2003; Beelmann, Pflingsten, & Lössel, 1994). To our knowledge, few recent studies have been done in examining the effectiveness of social skills training programs for children with internalizing problems. Two studies examined the effectiveness of a social skills training-based cognitive behavioral intervention for children with social phobia. One program was effective in the short term, but effect sizes were not reported (Spence, Donovan, & Brechman-Toussaint, 2000). The other program was effective in treating social phobia up to three years later (Beidel, Turner, Young & Paulsen, 2005). However, these programs were meant for children with a psychiatric disorder, which is not the focus of the current study. One other social skills training program for children who experienced peer dislike, bullying or social anxiety was effective (with small effect sizes) in increasing peer likes, enhancing self-esteem and self-efficacy, and decreasing social anxiety (DeRosier, 2004). In addition, one other social skills training program for victims of bullying was not effective in changing bullying status, but was effective in increasing self-esteem (Fox & Boulton, 2003).

There are several reasons why social skills training effectiveness is limited, but these may be overcome. These potential improvements are incorporated in 'Happy at School'.

First, 'Happy at School' is a two-day group training program given during the summer break before children make the transition from primary school to secondary school, around the age of 12. It is known that children often have difficulties bringing new learned social skills into practice in the same peer group, in which social status is relatively stable (Olweus, 1992). In The Netherlands, when children go to secondary school, they go to a new school with almost all new classmates. This moment gives the children the opportunity to use their new skills directly in a new peer group, where they do not yet have a social status. Second, exercises and themes in 'Happy at School' are very closely connected to everyday life, which makes social validity high (van Vugt, Deković, Prinzie, Stams, & Asscher, 2012). In addition, prior research indicated that most social skills programs do not take place in a natural environment, making generalizability hard for children (Maag, 2006). 'Happy at School' is given in a secondary school building, in which the child will need to bring the new learned skills into practice in everyday life. Third, involving parents in the program is shown to be important (Spence et al., 2000; Frankel, Cantwell, & Myatt, 1996; Frankel, Myatt, Cantwell, & Feinberg, 1997). In 'Happy at School', there is a parental meeting in addition to the training program for children. At this meeting parents get tools to how to help their child after the training program is finished. Finally, drop out is known to be a problem in most therapies, but not in 'Happy at School'. In psychotherapy, estimates of attrition can run as high as 85% (Novick, Benson, & Rembar, 1981). 'Happy at School' is a very short (two full days) and intensive program (16 hours of social skills training), which causes drop out to be very low. Thus, participating children have full exposure to the program.

Promising results were found in a pilot study (Faber, Verkerk, van Aken, Lissenburg, & Geerlings, 2006). A group of 166 children participating in the training program were assessed prior to the intervention, shortly after the intervention (approximately one week after the intervention) and before a booster session (approximately six weeks after the intervention). After the training program, children were less socially anxious and less victimized. In addition, parents and teachers reported less psychological problems and less social problems. Although these results were promising, the study lacked a control group. Therefore it was not possible to conclude that these promising findings were a result of the training program. Other explanations, such as the transition to secondary school could also account for these results.

The present study was the first to examine the effectiveness of 'Happy at School' with a cluster randomized design. Because of the specific characteristics of 'Happy at School' and the promising results of the pilot study, we expected the program to be effective in reducing internalizing problems (e.g., social anxiety and low self-esteem) and peer problems (e.g., victimization and social disintegration).

In addition to studying the effectiveness of the program, we also examined whether the program is more effective for some children than for other children (i.e., whether child characteristics moderate the program's effectiveness). Knowledge about moderators is informative when inclusion and exclusion criteria for interventions are formulated (Kraemer, Wilson, Fairburn, & Agras, 2002). In addition, information about moderators suggests what the expected responsiveness to an intervention is. Moreover, information about moderators is informative to adapt interventions for specific groups of patients (Kraemer, et al., 2002). Finally, knowledge about possible moderators contributes to theoretical insight in what works for whom (Kellam & Rebok, 1992). In this study, we examined gender and initial problem level as possible moderators.

Differences between boys and girls in peer problems and internalizing problems are often considerable, especially in middle childhood. For example, girls experience lower feelings of well-being and more depressive symptoms than boys do. In addition, in general, girls are more likely to seek and accept help than boys are (Ruble, Martin, & Berenbaum, 2006). Prior studies found girls to profit more from therapy than boys (Casey & Berman, 1985; Weisz, Weiss, Morton, Granger, & Han, 1992), but Beelman, Pfungsten, and Lösel (1994) found no differences between boys and girls in meta-analyses about the effectiveness of social skills training programs. These prior studies examined therapy effectiveness in general. However, this study focuses specifically on internalizing problems, where gender differences might be more apparent. Shyness in childhood causes more negative feedback from peers and parents in boys compared to girls (Bacon & Ashmore, 1985). For example, it is known that girls report more social anxiety but that boys suffer more from social anxiety (Bacon & Ashmore, 1985). In addition, social anxiety contrasts much with male gender roles, whereas it is more accepted in girls (Sadker & Sadker, 1994; Weinstock, 1999). Social anxiety and victimization are positively correlated and this correlation is stronger for boys. Socially anxious boys get victimized more than socially anxious girls do (e.g., Flanagan, Erath, & Bierman, 2008; chapter 2). Therefore, it is possible that when it concerns internalizing problems, boys are more likely to be highly motivated to change their behavior, because they suffer more from internalizing problems than girls do. This higher motivation might influence the effectiveness of 'Happy at School' in a positive direction.

In addition, we studied the influence of initial problem level on the effectiveness of the program. Several studies found that children with higher initial problem levels benefit more from interventions targeting externalizing problems (De Graaf, Speetjens, Smit, De Wolff, & Tavecchio, 2008; Leijten, Raaijmakers, Orobio de Castro, & Matthys, 2013). Little research has examined the influence of initial problem level on the effectiveness of interventions targeting internalizing problems and peer problems. To our knowledge, only one study found that internalizing problems decrease more when the initial problem level was high in children following a school-based intervention to reduce internalizing and externalizing problems (Vliek, Overbeek, & Orobio de Castro, 2013). Based on the previous studies (mostly concerning externalizing problems), we expect children with higher initial problem levels to benefit most from 'Happy at School'.

Method

Design and Randomization

In a cluster randomized trial, 374 children were followed at four measurement waves with an initial data-collection at the end of elementary school, and three measurement waves thereafter during their first year of secondary school.

Randomization was done at the school level. A waiting list control group was not possible because of the specific timing of the program. Therefore, children of the control group were not informed about 'Happy at School'. Moreover, randomization was done at a school level to prevent children within one class to be divided in having the opportunity to follow 'Happy at School' or not. The procedure was performed by a researcher from another research institute. Pairs of 62 first cohort schools were made according to school size, class size, religious background of the schools, and prior attention to social skills and victimization.

Each of the pairs was randomly allocated to the intervention or the control group. During the first year of data collection, it became clear that more children from control schools agreed to participate than children from intervention schools did. To create equal groups of children in both conditions, an oversampling of intervention schools was therefore created in the second year of data collection involving 88 schools. To this end, groups of four, instead of two, schools were made. Three schools were randomly allocated to the intervention group, and one school to the control group. There were no differences between both cohorts on self-reports, parent-reports and peer-reports. A cohort effect in teacher-reported internalizing problems was found ($t = -2.03, p < .05$). During the analyses, we corrected for this difference (see means and standard deviations).

Sample Size

Sample size was calculated based on Cohen's d of $> .33$, and a power of $.80$. Therefore a minimum of 145 individuals per condition was needed. To control for a loss of power caused by randomization at a school level sample size was calculated based on $145 \times 1.27 = 184$ individuals per condition (van Houwelingen, 1998).

Participants

The study had a total of 190 children in the control group and 184 children in the intervention group ($M_{age} = 12$ years, $SD = 6.14$ months, 42.78% boys) Of the sample, 85.3% were of Dutch origin and 14.7% had another ethnic background (mostly Moroccan, Turkish, Antillean or mixed). This is representative for the Dutch population, in which, 78.9% of the population are of Dutch origin (Central Bureau of Statistics, 2013a).

The employment status was representative of the Dutch population (Central Bureau of Statistics, 2013b) (in this sample: 1.6% of the families both parents were unemployed, 19.8% one parent with a paid job, 76.5% of the families both parents had a paid job, 2.1% missing).

Procedure

Inclusion of participants. Children were selected for the study based on screening done at the end of their elementary school. Regular educational schools were contacted first by letter to inform them about the study and offered a financial compensation. Two weeks later, schools were contacted by phone for further information. Consistent with school guidelines, passive informed consent of parents for the screening part of the study was obtained when the school agreed to participate. Approximately 96% of children ($n = 4273$) participated in the screening of the study. Students filled in pencil and paper questionnaires during school hours. Confidentiality was assured. Teachers were responsible for the administration of the questionnaires, and were instructed intensively prior to the assessment.

Children with high scores were invited to participate in the study. A cut off score of 20% was used in all measurements, and calculated for boys and girls separately. Children were selected when they had 1. high social anxiety scores (Dekking, 1983) or 2. did not feel socially accepted (social acceptance scale, Harter, 1988; Treffers et al., 2002) and were victimized (victimization scale, Olweus, 1986; Liebrand, et al., 1991), or 3. did not feel socially accepted (social acceptance scale, Harter, 1988; Treffers et al., 2002) and felt socially disintegrated (social disintegration scale, Olweus, 1986; Liebrand, et al., 1991), or 4. bullied other children (bullying scale, Olweus, 1986; Liebrand, et al., 1991) and felt socially disintegrated (social disintegration scale, Olweus, 1986; Liebrand, et al., 1991),

or 5. bullied other children (bullying scale, Olweus, 1986; Liebrand, et al., 1991) and did not feel socially accepted (social acceptance scale, Harter, 1988; Treffers et al., 2002). One other selection criterion was that at least one of the parents was able to speak, write and read Dutch. Two exclusion criteria were formulated. First, children following special education could not participate in the program because of the moderate cognitive capacity needed to be able to follow 'Happy at School'. Therefore only regular educational schools could participate in the study. Second, selected children had to be moderately motivated to attend to the program. During an introductory interview the trainer decided on the level of motivation.

Parents of selected children were informed about the longitudinal study by letter and had to give active informed consent to participate in the study. Parents of children in the intervention group were informed about a study on the effectiveness of 'Happy at School', and their children were invited to participate in the study and in the training program. Parents of children in the control condition were informed about a study examining social relations in children making the transition to secondary school. Children participating in the control group did not receive an intervention.

This work was approved by the Faculty's Advisory Committee under the Medical Research (Human Subjects) Act (WMO Advisory Committee) at Utrecht University.

Measurement waves and informants. Children were assessed at the end of elementary school (T0, self-, parent-, peer-, and teacher-reports) and three measurement waves scheduled at one (T1, self- and parent-reports), thirteen (T2, self-, parent-, peer-, and teacher-reports) and forty (T3, self-, parent-, peer-, and teacher-reports) weeks after the start of secondary school, which was equivalent to two (T1), fourteen (T2) and forty-one (T3) weeks after the intervention was completed. After completing wave two, three and four, children in both groups received a gift card of ten Euros as financial compensation. Teacher-, peer- and self-reports about victimization and social disintegration were not gathered at T1 because the children and their new classmates and teachers only knew each other for one week at T1. On average a child knew two classmates from primary school in the secondary school class ($M = 1.99$, $SD = 2.05$).

For gathering peer-reports at the secondary school, consistent with school guidelines, passive informed consent of parents was obtained. Parents and peers were informed about a study about victimization in secondary school, and not about 'Happy at School' to ensure the privacy of the children who followed 'Happy at School' during the study.

Participant Flow

For a graphical description of the participant flow, see Figure 1. A total of 1347 schools were asked to participate in the study. Of these, 146 schools, with 265 classes, agreed to participate (56 schools participated both years; some schools participated with multiple classes). Of these classes, 159 were allocated to the intervention group and 106 to the control group (see design). After randomization, five schools declined participation in the study because of reasons unrelated to the study (such as school management problems). Four of these schools were assigned to the intervention group and one school to the control group.

In these 265 classes, 4273 students participated in the screening. Of these, 826 (532 in the intervention group and 294 in the control group) students met the inclusion criteria.

In the intervention group, 185 students (34.77 %) and in the control group, 190 students (64.63%) agreed to participate in the intervention study. The parents of these children all gave active consent. The other 451 did not want to participate in the study. In the intervention group, this was for several reasons like being on vacation during the training, no transportation to the training location, or not seeing the need for the training program. For children in the control group, reasons for not participating were not available.

Self-reports were completed at T0 ($n = 375$, 100%), T1 ($n = 313$, 83.47%), T2 ($n = 306$, 81.6%), and T3 ($n = 296$, 78.93%). In addition to what was described in Figure 1, also parents, teachers and peers participated in the study. Parent-reports were gathered at T0 ($n = 322$, 85.87%), T1 ($n = 313$, 83.47%), T2 ($n = 308$, 82.13%), and T3 ($n = 306$, 81.60%). Reasons for loss to follow up for parents were similar to those of self-reports (see figure 1). Teacher-reports were gathered at T0 ($n = 333$, 88.80%), T2 ($n = 202$, 53.87%), and T3 ($n = 198$, 52.80%). Peer-reports were gathered at T0 ($n = 375$, 100%), T2 ($n = 189$, 50.40%), and T3 ($n = 190$, 50.67%). At T2 and T3, children were in different schools than at T0. Some of these new schools did not want to participate in the study, which caused a high percentage of dropouts in peer- and teacher-reports.

Of the original 375 participants, one participant was deleted from the analyses because of outlier scores. Initially this child was randomized to the intervention group. All missing data were imputed using expectation maximization and multiple imputation (see analyses, missing data), thus all intention-to-treat analyses consist of the 374 cases who agreed to participate after being selected through screening.

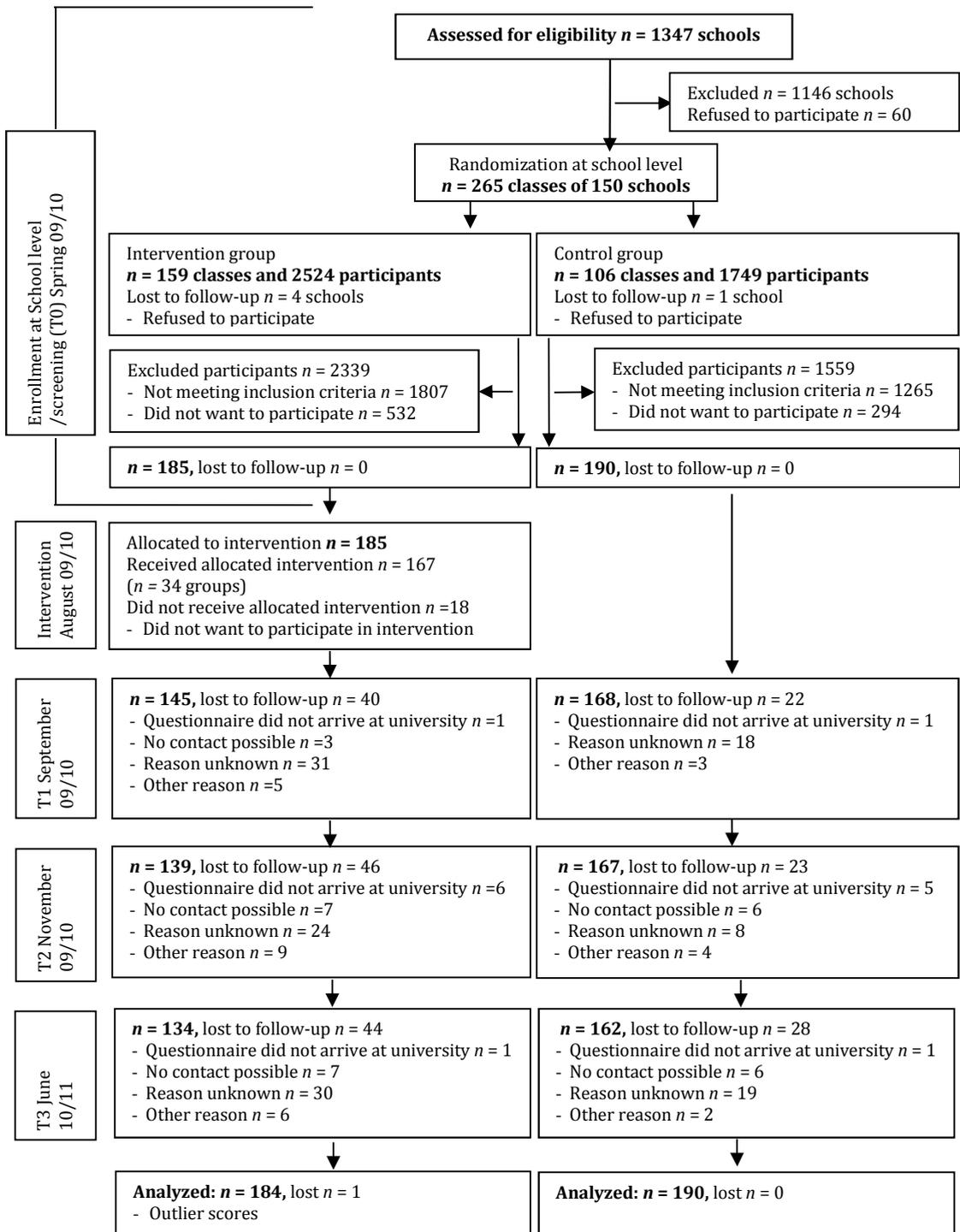


Figure 1. Flowchart of randomization design.

Intervention

'Happy at School'. The program was based on cognitive behavioral therapy (Ellis, 1962). Modification of cognitions was an important part of the program. In addition to that, improving body language, such as standing up straight and making eye contact were important, as was learning to start and end conversations and to deal with physical tension.

The training program consisted of four different parts; an introductory interview (in which the program was explained and agreements about participation in the program were made), an psycho-educational parent meeting, the two-day training program and a booster session six weeks after the two-day training.

During the parental meeting the contents and theory on which the training program is based on were discussed more extensively. Parents got tools to support their children after the training program was finished. In addition, parents had the opportunity to exchange experiences and problems with other parents.

In the last week of the summer break, the child-training program took place. 'Happy at School' is a group training program (approximately ten children per group). During two full days, children learned about social skills and hard social situations. The importance of the influence of helpful and not helpful beliefs was explained by using an extended version of the RET ABC scheme (Rational Emotive Therapy, Ellis, 1962, A = activating event, B = beliefs, C = consequence). This extended version is a socio-competence model and states that situations induce beliefs, which induce feelings. These feelings induce behaviors, which lead to the consequence (Ringrose & Nijenhuis, 1996). During the entire training program, modification of beliefs was important. Exercises (e.g., starting and ending a conversation) and themes were connected to the school situation and problems with peers at school. Theoretical lessons and role-playing were alternated.

During the second day practical exercises about tough situations like victimization, saying no and standing up for one self were done. The socio-competence model was integrated in the exercises. Some theoretical lessons were taught again, but the second day consisted mostly of role-playing.

After six weeks, the booster session took place. During this session, every child talked about new experiences in secondary school, and tough situations were practiced if necessary. At this point, the trainers checked if there were children that needed more support. If yes, children could be referred to additional treatment at the mental health institutions.

Control condition. Children in the control group did not receive an intervention as part of the study, but were free to seek treatment outside of the study. Because 'Happy at School' is an existing program, sometimes already offered by health care providers in previous years, participating health care providers were asked to not actively promote 'Happy at School' at schools that were in the control group. Children in the control group were asked in the T1 questionnaire if they undertook any activity to prepare for secondary school (six children, 3.16% did).

Outcome Measures of Internalizing Problems

Social anxiety. Social anxiety was measured with a Dutch Social Anxiety Scale (SAS-k, Dekking, 1983). Children responded to 46 statements about social anxiety by choosing 'yes' or 'no', corresponding to their (dis)agreement with the statement. An example of a statement is: *'When I go into a room full of children, I get a shaky feeling.'*

A mean score of social anxiety was calculated. Cronbach's alphas for the total scale in this study were .89 at T0, .95 at T1, .95 T2 and .95 at T3.

Self-esteem. Self-esteem was measured with the Global Self-Worth scale of the Dutch version of the Self Perception Profile for Adolescents (Harter, 1988; Treffers et al., 2002). Children had to respond to 5 items about how satisfied children are with themselves and the way they are leading their lives. As in previous studies (e.g., Thomaes, Bushman, Stegge & Olthof, 2008) we used a 4-point scale (1 = *I am not like these kids at all*; 4 = *I am exactly like these kids*). An example of an item is: '*Some kids are happy with themselves*'. A mean score of self-esteem was calculated. Cronbach's alphas for the scale were .75 at T0, .80 at T1, .83 at T2 and .86 at T3.

Parent-reported internalizing problems. Parent-reported internalizing problems were measured using a Dutch adaptation of the Child Behavior Checklist 6-18 (CBCL, Achenbach, 2007; Verhulst, van der Ende, & Koot, 2003). Parents responded to 32 items about internalizing problems distributed over three narrow-band problem scales (anxious-depressed, withdrawn-depressed and somatic complaints). Parents were asked to respond to items on a 3-point scale (0 = *not at all, as far as I know*, 1 = *a little or sometimes*, 2 = *clearly or often*). An example of an item of the internalizing problem scale is '*Complains about feeling lonely*'. Mean scores of internalizing problems were calculated. Cronbach's alphas for the internalizing problems scale in this study were .88 at T0, .89 at T1, .90 at T2 and .91 at T3.

Teacher-reported internalizing problems. Teacher-reported internalizing problems were measured using a Dutch adaptation of the Teacher Report Form 4-18 (TRF, Achenbach, 1991; Verhulst, van der Ende, & Koot, 1997). The TRF had the same format as the CBCL. Cronbach's alphas for the internalizing problems scale in this study were .89 at T0, .87 at T2 and .88 at T3.

Outcome Measures of Peer Problems

Self-reported victimization. Self-reported victimization was measured with the victimization subscale of a Dutch adaptation of the Olweus Bully/Victim Questionnaire (Olweus, 1986, KLRV-J; Liebrand, van IJzendoorn, & van Lieshout, 1991). In the instructions, it was emphasized that victimization has a repetitive and intentional nature, and that it entails a power imbalance. Examples of what victimization is (e.g., saying mean things, kicking or hitting) and what it is not (when two kids of equal strength are fighting) were given. The subscale consisted of four items (*How often did other children victimize you this school year? How often have you been victimized at school in the last 5 days? How often have you been hit, kicked, locked up or something like that? How often do children say mean things to you?*). Children were asked to respond to the items on a 5-point scale (1 = *never*; 5 = *several times a week*). A mean score of victimization was computed. Cronbach's alphas in this study were .82 at T0 .75 at T2 and .81 at T3.

Peer-reported victimization. Peer-reported victimization was measured using peer nominations of victimization as proposed by Coie, Dodge and Coppotelli (1982). Children were asked to answer the following question: '*Which three classmates are often victimized by other children?*' Children were instructed that they could not nominate themselves. Cross-sex nominations were allowed.

Proportion scores were calculated to correct for the varying number of students in a class (received nominations divided by the number of classmates participating in the study). Because peer-reported victimization was based on a single item, Chronbach's alpha could not be calculated. However, the reliability of peer nominations is high, because the score of victimization is aggregated from scores across informants (all classmates). Single item peer nomination scales tend to be reliable (Coie, Dodge, & Kupersmidt, 1990).

Social disintegration. Social disintegration was measured with the social disintegration subscale of a Dutch adaptation of the Olweus Bully/Victim Questionnaire (Olweus, 1986, KLRV-J; Liebrand, et al., 1991). The subscale consisted of four items (*How many good friends do you have in your class? How often are you alone during breaks, because children of your class don't want to spend breaks with you? Do you feel lonely at school? Do you feel less well liked than other children in your class?*). Children were asked to respond to the items on a 5-point scale (1 = *never*; 5 = *several times a week*). A mean score was computed. Cronbach's alphas in this study were .72 at T0 .62 at T2 and .63 at T3.

Parent-reported peer problems. Peer problems were reported by parents and measured using the peer problem subscale of a Dutch adaptation of the Strength and Difficulties Questionnaire (SDQ, Goodman, 1997; SDQ-Dut, van Widenfelt, Goedhart, Treffers, & Goodman, 2003). Parents had to respond to five statements about strengths and difficulties of their children by responding to items on a 3-point scale (1 = *'not true'*, 2 = *'a little bit true'*, 3 = *'certainly true'*). Cronbach's alphas in this study were .72 at T0, .69 at T1, .71 at T2 and .70 at T3.

Moderators

Gender. Gender was coded as a dichotomous variable in which boys were coded as 0 and girls were coded as 1.

Initial problem level. Initial problem level was defined as child problems level at baseline of the dependent variables.

Analyses

Data structure. This study had a double cluster design. Children of the intervention group were nested in classes and in health care providers. Children of control groups were nested in classes. We tested whether the structure of the dataset was a multilevel structure using MLwiN 2.21. A multilevel structure at class level was checked at baseline (randomization at school level would cause differences between classes at follow-up waves logically, because children in intervention schools would differ from children in control schools at the follow up waves, if 'Happy at School' is effective). A multilevel structure at the health care provider level was checked at T1, T2 and T3. No multilevel structure at the health care provider level was present (i.e., there were no differences between children nested in different health care providers). The average intraclass correlation coefficient at the health care provider level was .02.

At the class level, a multilevel structure was present in teacher-reported internalizing problems, parent-reported peer problems and peer-reported victimization (i.e., children in the same class were more like each other than children in different classes on the above variables at baseline).

The average intraclass correlation coefficient at the class level was .13. However, because we already controlled for baseline scores (see means and standard deviations), this multilevel structure did not influence the results and multilevel analyses would not give extra information in addition to regression analyses reported here.

To control for the design effect of cluster randomization at the class level, we calculated the design effect as was recommended by Muthén (2000), which is expressed as $d = 1 + \rho (c - 1)$, where ρ is the average intraclass correlation (.13) and c is the average number of children per class (the common cluster size, 2). The design effect was 1.13. Because this is smaller than 2.0 it can be ignored (Muthén, 2000).

Missing data. Data were analyzed in accordance with intention to treat analyses using Statistical Package for Social Sciences 20 (SPSS, IBM Corp., 2011). Missing data were handled using both the expectation-maximization algorithm (EM) and Multiple Imputation. In case individual items of scales were missing, these missing item values were first estimated using the expected-maximization algorithm. Concerning the data of respondents in which complete variables (i.e., all of the indicator items) were missing or for which one measurement occasion was missing, Multiple Imputation in Mplus Seventh Edition (Muthen & Muthen, 2013) was used. Missing data were accordingly imputed creating ten imputed data sets. Finally, results of the analyses were based on the pooled estimates derived from these ten complete datasets (Rubin, 1987; Schafer, 1997).

Means and standard deviations. Independent sample t-tests were conducted to check whether randomization resulted in differences of baseline scores on dependent variables between both conditions. Results revealed differences between both groups on victimization, self-esteem, internalizing problems, peer problems and social disintegration (see Table 1). Therefore, all analyses were conducted using these baseline scores as covariates. Table 1 also displays means and standard deviations of the dependent variables for boys and girls separately.

Estimated marginal means are graphically reported in Figure 2 (per gender in case of moderation effects of gender). In addition, class averages during screening (average scores of the school class during screening) is displayed per gender when available. These scores are a proxy of average scores of the general population at this age, as they were based on 4273 cases. This was done to indicate the clinical relevance. Class average scores were only available for self-reports and peer-reports, because only those were obtained in all 4273 children. Parent- and teacher-reports were only obtained in children participating in the intervention study.

Table 1 Demographic and Clinical (Baseline) Characteristics (M and SD) and T-test Results of Outcome Measures per Condition and per Gender

	Intervention condition M (SD)	Control condition M (SD)	t	Boys M (SD)	Girls M (SD)	t
<i>School characteristics</i>						
Number of classes	159	106				
Mean school size	201.40 (100.31)	223.03 (128.49)				
Mean class size	22.56 (13.20)	24.86 (12.85)				
<i>Individual characteristics</i>						
Number	184	190		160	214	
Male, n (%)	75 (40.76%)	85 (44.73%)				
Age (in months)	144.50 (6.35)	143.61 (5.93)	-1.40	144.66 (6.41)	143.59 (5.91)	1.68
SA	0.37 (.20)	0.35 (.17)	-1.50	0.29 (.16)	0.41 (.19)	-6.53***
SE	2.71 (.70)	2.89 (.55)	2.71**	2.87 (.58)	2.74 (.67)	2.03*
IP PR	0.43 (.26)	0.29 (.24)	-5.47***	0.35 (.26)	0.36 (.26)	-0.31
IP TR	0.25 (.23)	0.19 (.18)	-3.04**	0.21 (.21)	0.22 (.21)	-0.62
SR vic	2.11 (.92)	1.86 (.76)	-2.84**	2.09 (.88)	1.90 (.82)	2.08*
PER vic	0.25 (.30)	0.12 (.22)	-4.72***	0.23 (.30)	0.16 (.24)	2.47*
SD	2.35 (.95)	1.89 (.72)	-5.17***	1.99 (.76)	2.21 (.93)	-2.47*
PP	0.75 (.50)	0.45 (.45)	-6.14***	0.66 (.51)	0.55 (.49)	2.06*

M = mean, SD = standard deviation. SA = Social anxiety, SE = self-esteem IP PR = Internalizing problems parent-reported, IP TR = internalizing problems teacher-reported SR vic= self-reported victimization, PER vic= peer-reported victimization, SD = Social disintegration, PP = peer problems. * $p < .05$, ** $p < .01$, *** $p < .001$

Primary analyses. For the main analyses, we compared the intervention group with the control group using regression analyses with baseline scores as covariates and outcomes at T1, T2 and T3 as dependent variables. In step one, we entered the covariate (baseline score) and in step two, we entered the independent variable (group). Effect sizes are based on the ΔR^2 of step two and recalculated and reported as Cohen's d , with being small between .20 and .50, medium between .60 and .80 and large with a d higher than .80 (Cohen, 1988). Results of the regression analyses are presented in Table 2.

Moderation analyses were also performed using regression analyses. Significant interaction terms indicated moderation effects. The baseline score of the dependent variable was entered as a covariate as was done in the main analyses to control for baseline differences between groups. For initial problem level, we entered group (the independent variable), gender (moderator one) and the initial problem level (moderator two) in step one. In step two, we entered all two-way interaction variables (group*gender, gender*initial problem level, initial problem level*group). In step three, we entered the three-way interaction variable (group*gender*initial problem level).

In case of a significant interaction with gender, analyses were repeated for boys and girls separately. Girls were coded as 1 and boys as 0. Significant two-way interaction effects were probed with an online tool as recommended by Preacher, Curran, and Bauer (2006) in which high and low scores of initial problem level, were represented by -1SD and +1SD. Post hoc, to calculate effect sizes for different levels of initial problem level, two sets of subgroups were formed.

1. One group with initial problem scores above average and one group with scores below average. 2. One group with initial problem scores one standard deviation above average and one group with scores lower than this. To reduce multicollinearity in the interaction analyses, predictor scores were centered before calculating interaction terms (Aiken & West, 1991).

Results

Internalizing Problems

Social anxiety. Results showed that 'Happy at School' was not effective in reducing social anxiety at T1, but was effective in reducing social anxiety at T2, with a small effect size ($d = .20$, 95% CIs [-.08, .02]) for the whole group. At T3, this effect was not significant anymore (see Table 2). Gender and initial problem level moderated the effectiveness of 'Happy at School' by a marginally significant three-way interaction ($B = .56$, $p = .05$) at T2.

For girls, 'Happy at School' was not effective in reducing social anxiety ($B = -.03$, $p = .32$). The effectiveness of 'Happy at School' was not moderated by initial problem level ($B = -.08$, $p = .66$) in girls. At T3, social anxiety scores of girls in both groups remained above class average during screening (see Figure 2).

For boys, initial problem level did moderate the effectiveness ($B = -.64$, $p < .01$). In boys with social anxiety scores above group average (of the 374 children), 'Happy at School' was effective ($B = -.15$, $p < .01$, $d = .60$, 95% CIs [-.26, -.04]), while in boys with social anxiety scores below average, it was not ($B = -.04$, $p = .39$, $d = .20$, 95% CIs [-.12, .05]). In boys with social anxiety scores higher than one standard deviation above group average, 'Happy at School' was even more effective ($B = -.32$, $p < .05$, $d = 1.20$, 95% CIs [-.56, -.08]). At T3, social anxiety scores of boys in the intervention group were at the level of class average during screening (see Figure 2).

Self-esteem. Results showed that 'Happy at School' was not effective in increasing self-esteem at T1 and T3, but was effective in increasing self-esteem at T2, with a small effect size ($d = .20$, 95% CIs [.00, .25]) for the whole group. The effectiveness of 'Happy at School' on self-esteem was not moderated by gender and initial problem level (T1: $B = -.02$, $p = .88$; T2: $B = .08$, $p = .70$ and T3: $B = .10$, $p = .65$). At T3, self-esteem scores of all children remained below class average during screening in both groups (see Figure 2)

Parent-reported internalizing problems. Results showed that 'Happy at School' was effective in reducing internalizing problems as reported by parents (at T1, T2 and T3), with small effect sizes ($d = .20$, 95% CIs [-.10, -.03] at T1, .30, [-.11, -.04] at T2 and .20, [-.10, -.01] at T3). The effectiveness of 'Happy at School' on parent-reported internalizing problems was not moderated by gender and initial problem level at T1 and T2 (T1: $B = .14$, $p = .34$; T2: $B = .14$, $p = .34$), but was at T3 ($B = -.48$, $p < .05$). See Figure 2 for the pattern of change in parent-reported internalizing problems over time.

For girls, the effectiveness of 'Happy at School' at T3 was moderated by initial problem level ($B = -.29$, $p < .01$). For girls with initial problem levels above group average, 'Happy at School' was effective ($B = -.13$, $p < .01$, $d = .50$, 95% CIs [-.23, -.04]), while in girls with scores of parent-reported internalizing problems below average ($B = .01$, $p = .82$, $d = .00$, 95% CIs [-.05, .06]), or in girls with scores higher than one standard deviation above group average ($B = -.16$, $p = .13$, $d = .50$, 95% CIs [-.36, .05]), 'Happy at School' was not effective.

For boys, 'Happy at School' was not effective in reducing parent-reported internalizing problems at T3 ($B = -.07, p = .10$). The effectiveness of 'Happy at School' at T3 in boys was not influenced by initial problem levels ($B = .19, p = .23$).

Teacher-reported internalizing problems. Teachers reported more internalizing problems in children in the intervention group, than in the control group at T2 ($d = .20, 95\% \text{ CIs } [-.00, .10]$) and T3 ($d = .30, 95\% \text{ CIs } [.03, .11]$). The effectiveness of 'Happy at School' on teacher-reported internalizing problems was not moderated by gender and initial problem level (T2: $B = .10, p = .67$; T3: $B = .19, p = .34$). See Figure 2 for the pattern of change in teacher-reported internalizing problems over time.

Peer Problems

Self-reported victimization. According to self-reports, 'Happy at School' was not effective in reducing victimization for the whole group (see Table 2). However, gender and initial problem level moderated the effectiveness of 'Happy at School' by a significant three-way interaction at T2 and T3 (T2: $B = .60, p < .001$; T3: $B = .63, p < .001$).

For girls, 'Happy at School' was not effective in reducing self-reported victimization (T2: $B = .09, p = .22$; T3: $B = .08, p = .76$). The effectiveness of 'Happy at School' was not moderated by initial problem level (T2: $B = .11, p = .25$; T3: $B = .07, p = .55$). At T3, the scores of girls in both groups were still above class average, but lower than at baseline (see Figure 2).

For boys, 'Happy at School' was effective in reducing self-reported victimization (T2: $B = -.21, p < .05, d = .30, 95\% \text{ CIs } [-.41, -.01]$; T3: $B = -.28, p < .05, d = .30, [-.51, -.05]$). In addition, the effectiveness of 'Happy at School' was also moderated by initial problem level (T2: $B = -.49, p < .001$; T3: $B = -.56, p < .001$). For boys with initial problem levels above group average, 'Happy at School' was more effective (T2: $B = -.45, p = .05, d = .50, 95\% \text{ CIs } [-.91, .00]$; T3: $B = -.66, p < .01, d = .70, [-1.14, -.18]$). In boys with self-reported victimization scores higher than one standard deviation above group average, 'Happy at School' was even more effective (T2: $B = -1.19, p < .001, d = 1.50, 95\% \text{ CIs } [-1.76, -.62]$; T3: $B = -1.07, p < .01, d = 1.40, [-1.67, -.48]$). In boys in the intervention group, victimization scores at T3 were almost at the level of class average during the screening. In boys in the control group, these scores were higher (see Figure 2).

Peer-reported victimization. 'Happy at School' was not effective in reducing peer-reported victimization. Peer-reported victimization scores were not moderated by gender and initial problem level (T2: $B = -.09, p = .67$; T3: $B = .05, p = .83$). At T3, peer-reported victimization scores of both groups were still higher than class average scores during screening (see Figure 2).

Social disintegration. 'Happy at School' was effective in reducing social disintegration at T2 ($d = .20, 95\% \text{ CIs } [-.33, -.04]$), but not at T3. Gender and initial problem level moderated the effectiveness of 'Happy at School' by a significant three-way interaction at T2 ($B = .38, p < .05$).

For girls, 'Happy at School' was not effective in reducing social disintegration scores ($B = -.19, p = .06$). The effectiveness of 'Happy at School' was not influenced by initial problem levels in girls at T2 ($B = -.03, p = .80$). At T3, social disintegration scores of girls in both groups remained above class average during screening in both groups (see Figure 2).

In boys with social disintegration scores higher than one standard deviation above group average, 'Happy at School' was effective ($B = -.96, p < .05, d = 1.30$. 95% CIs [-1.76, -.16]) in reducing social disintegration, while in boys with scores lower than one standard deviation above group average, it was not ($B = -.12, p = .29$). At T3, social disintegration scores of boys remained above class average during screening in both groups (see Figure 2).

Parent-reported peer problems. 'Happy at School' was not effective in reducing peer problems according to parents. The effectiveness of 'Happy at School' on peer problems was not moderated by gender or initial problem level (T1: $B = .17, p = .27$; T2: $B = .14, p = .42$; T3: $B = .07, p = .70$). See Figure 2 for the pattern of change in parent-reported peer problems over time.

Table 2 Regression Analyses of the Effectiveness of 'Happy at School' on Outcome Measures per Wave

	Dep. var.	B	T1		B	T2		B	T3	
			SE	d		SE	d		SE	d
SA	<i>Step 1</i>			1.00		0.90			0.70	
	T0 score	.57***	.06		.50***	.06		.42***	.07	
	<i>Step 2</i>			0.10		0.20			0.10	
	Condition	-.03	.02		-.06**	.02		-.04	.02	
SE	<i>Step 1</i>			0.80		0.80			0.70	
	T0 score	.35***	.05		.35***	.05		.36***	.05	
	<i>Step 2</i>			0.00		0.20			0.20	
	Condition	-.05	.06		.13+	.06		.12	.07	
IP PR	<i>Step 1</i>			2.00		2.00			1.50	
	T0 score	.67***	.03		.63***	.03		.57***	.04	
	<i>Step 2</i>			0.20		0.30			0.20	
	Condition	-.07***	.02		-.07	.02		-.06*	.02	
IP TR	<i>Step 1</i>	-	-	-		0.20			0.40	
	T0 score	-	-	-	.16**	.06		.22***	.05	
	<i>Step 2</i>	-	-	-		0.20			0.30	
	Condition	-	-	-	.05*	.03		.07**	.02	
SR VIC	<i>Step 1</i>	-	-	-		0.80			0.60	
	T0 score	-	-	-	.29***	.04		.26***	.05	
	<i>Step 2</i>	-	-	-		0.00			0.00	
	Condition	-	-	-	-.04	.06		-.08	.08	
PER VIC	<i>Step 1</i>	-	-	-		0.90			1.00	
	T0 score	-	-	-	.36***	.05		.45***	.06	
	<i>Step 2</i>	-	-	-		0.20			0.10	
	Condition	-	-	-	.05	.03		.00	.04	
SD	<i>Step 1</i>	-	-	-		0.50			0.70	
	T0 score	-	-	-	.16***	.04		.28***	.04	
	<i>Step 2</i>	-	-	-		0.20			0.00	
	Condition	-	-	-	-.19*	.07		-.02	.08	
PP	<i>Step 1</i>			1.80		1.30			1.20	
	T0 score	.59	.04		.48***	.04		.47***	.05	
	<i>Step 2</i>			0.10		0.10			0.10	
	Condition	-.04	.04		-.05	.04		-.03	.04	

Dashes are placed when data were not obtained at the specific wave. SA = Social anxiety, SE = self-esteem, IP PR = Internalizing problems parent-reported, IP TR = internalizing problems teacher-reported SR VIC = self-reported victimization, PER VIC = peer-reported victimization, SD = Social disintegration, PP = peer problems. + $p < .06$, * $p < .05$, ** $p < .01$, *** $p < .001$

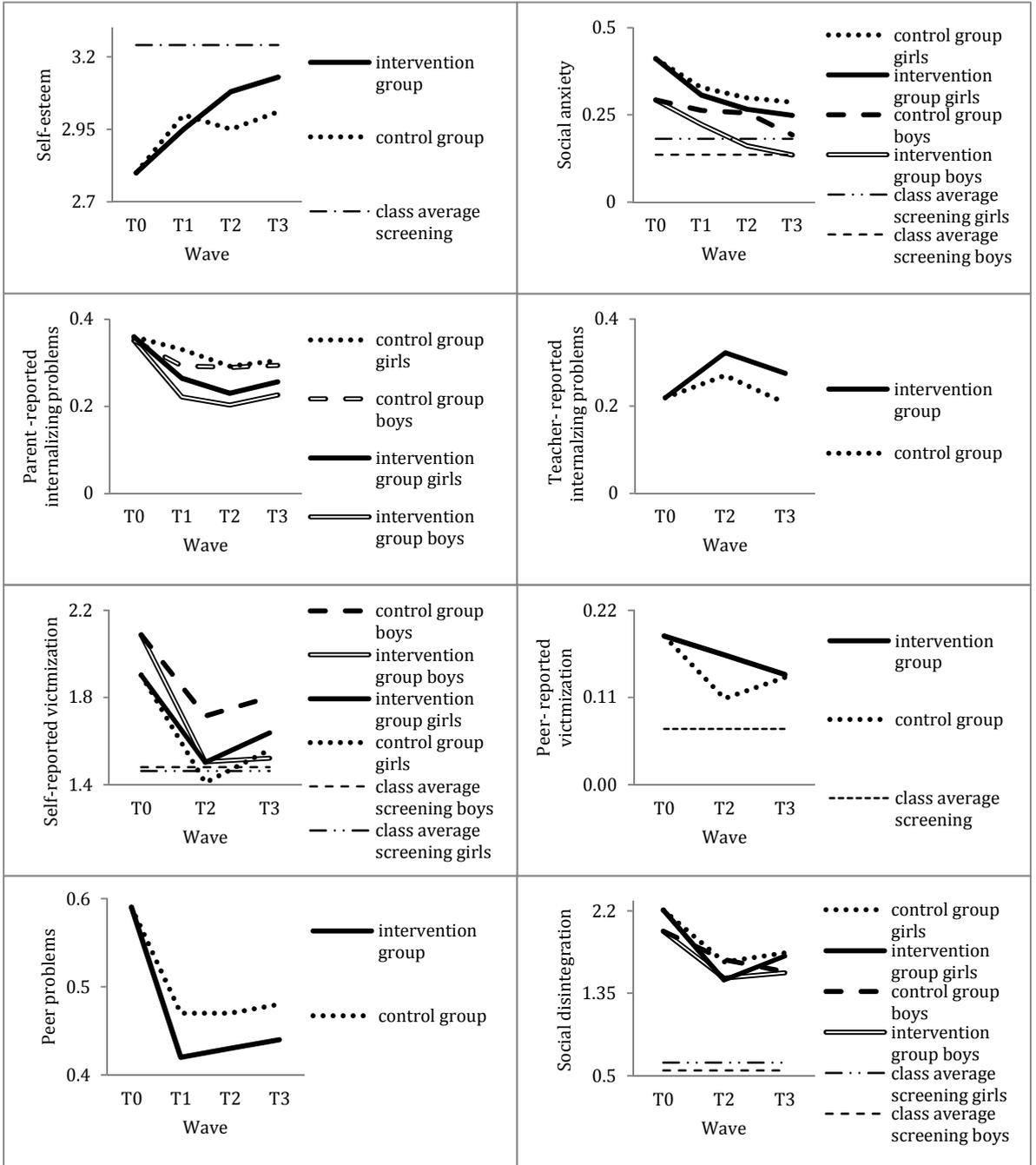


Figure 2. Graphical description of estimated marginal means of internalizing a problems and peer problems over time.

Estimated marginal means are only probed per gender if the effectiveness of 'Happy at School' was moderated by gender. Estimated marginal means are means corrected for T0 score.

Discussion

The main question of this study was whether 'Happy at School' is effective in reducing internalizing problems and peer problems. In addition, it was studied for whom 'Happy at School' was more effective.

Answering the effectiveness question with a clear yes or no is not possible. The effectiveness of 'Happy at School' differs across informants, child gender and initial problem level. For all children 'Happy at School' is effective in increasing self-esteem (at T2) and in decreasing parent-reported internalizing problems (at T1 and T2). However, only for girls with moderate internalizing problems at baseline, 'Happy at School' is still effective at T3 in reducing parent-reported internalizing problem. For boys with higher initial problem scores, 'Happy at School' is very effective in reducing social anxiety (at T2), self-reported victimization (at T2 and T3) and social disintegration (at T2). Clinical relevance is indicated by social anxiety and self-reported victimization scores that are at, or almost at, class average during screening at the long term. Parents reported a decline in internalizing problems, while teachers reported an increase in internalizing problems in the intervention group at T2 and T3.

The highest effect sizes are reached in boys with higher initial problem levels. In contrast, a prior review and meta-analysis showed girls to profit more from overall psychotherapy than boys did (Casey & Berman, 1985; Weisz, et al., 1992). However, as mentioned in the introduction, this study focused specifically on internalizing problems. Boys might have been more motivated to change their behavior. It might be that the higher the initial problem levels, the bigger the motivation is for boys, but not for girls, because boys suffer more from internalizing problems such as social anxiety (e.g., Flanagan et al., 2008). In addition, in a prior study we found that higher social anxiety levels at baseline predicted an increase in future victimization controlled for baseline victimization (see chapter 2). This indicates that when social anxiety decreased, victimization decreased. Because 'Happy at School' was only effective in decreasing social anxiety in boys, this could also explain why the program is also only effective in decreasing (self-reported) victimization in boys.

One other explanation could be that the measure of self-reported victimization might capture more verbal and physical victimization and somewhat less relational victimization, which is more common in girls (Crick & Bigbee, 1998; Crick & Grotpeter, 1995). It could be that we were not able to detect 'Happy at School' being effective in reducing (relational) victimization in girls. Future research should examine the differences in effectiveness in boys and girls. When implementing 'Happy at School' into practice, these gender differences should be kept in mind regarding expected responsiveness to the program for boys and girls.

Apparently, 'Happy at School' had an iatrogenic effect on one outcome variable: internalizing problems according to teachers. Parents reported a decline in internalizing problems, while teachers reported an increase in these problems. Several issues may explain this finding. It might be that teachers indeed correctly observed an increase in internalizing problems, while parents did not. However, it might also be that children did not actually experience more internalizing problems than they used to, but that they informed their teacher more about these problems. During the training program, much attention was paid to talk about internalizing problems and peer problems.

Children were specifically advised to talk to a teacher when they experienced problems, because teachers (in contracts to parents) normally often do not notice (or at least report, Stanger & Lewis, 1993; Youngstrom, Loeber, & Stouthamer-Lober, 2000) these problems. This could have resulted in more teacher-reported internalizing problems.

It is an important finding that 'Happy at School' is most effective in boys with higher initial problem levels. One of the goals of the training program is to prevent psychological disorders from emerging. Specifically children with higher initial problem levels are at greater risk for developing a psychological disorder. In addition, most programs are more effective for girls (Casey & Berman, 1985; Weisz, et al., 1992). 'Happy at School' is thus a program that is additive to existing interventions.

Prior research has shown that the effectiveness of social skills training programs meant to reduce internalizing problems and peer problems is far from optimal (e.g., Beelmann, Pfingsten, & Lössel, 1994; DeRossier, 2004; Merry, McDowell, Hetrick, Bir & Muller, 2004; Spence, 2003; Sheridan, Kratochwill, & Elliott, 1990; Spence, 2003; Schneider, 1992). Several reasons for the limited effectiveness were indicated; difficulties with bringing new learned social skills into practice when social status is stable (Olweus, 1992), problems with social validity (van Vugt, et al., 2012), problems with generalizability (Maag, 2006), a lack of parental involvement (Spence et al., 2000; Frankel, Cantwell, & Myatt, 1996; Frankel, Myatt, Cantwell, & Feinberg, 1997) and finally high levels of drop out (Novick, Benson, & Rembar, 1981). In the training program 'Happy at School' these limitations were overcome. This study shows that adapting a program based on the limitations identified in prior research is useful and feasible, as 'Happy at School' is very effective in reducing peer problems and internalizing problems, especially in boys.

One other important finding of this study unrelated to the training program should be discussed. In accordance with what was found in a prior study (Pellegrini & Long, 2002), although victimization scores of children in the intervention group decreased significantly more, we also found that children in both conditions reported less victimization, less social anxiety and less social disintegration. In addition, parents reported less peer problems and less internalizing problems. Over the long term, problems increased somewhat again, but the problems remained less than at the end of primary school (baseline). It could therefore be suggested that the transition to secondary school is a positive life event in children with peer problems or internalizing problems.

Some strengths and limitations of the study should be discussed. This study is a cluster randomized trial in which multiple informants were used. Results are thus based on different points of view, which make the results stronger.

When examining the effectiveness of the program we used multiple informants to get a complete picture of the effectiveness of the program. Although this is a strength of the study, it should be mentioned that children and parents of the intervention group were aware of them being in the intervention group; they were not blind to the study condition. Teachers (at wave 2 and 3) and peers were blind to the study condition. In the results of the study, 'Happy at School' is mostly effective when parent and self-reports were used. However, when gender differences are considered, girls report that the program is not effective. Therefore it is not likely that the effect sizes are influenced by the fact that informants were not blind to the condition. In addition, we also consider the reported effectiveness by participants themselves as most important. In the end, the goal of 'Happy at School' is to reduce (experienced) child problems.

This study showed 'Happy at School' to be effective in several aspects. However, when generalizing these results to clinical practice, this should be done with some caution. There could be differences between this sample and any clinical samples (Weisz & Weiss, 1993), because we recruited children for the study, while normally they are referred to the training program by a teacher or therapist. We have no information on whether the problems in the study sample would be more or less severe than a clinical sample, and we have therefore no information on whether we would expect higher or lower effect sizes in the clinical sample. We advise monitoring the effectiveness of 'Happy at School' in clinical therapy.

The measure of victimization we used in this study did not make a clear distinction in whether verbal, physical or relational victimization was measured. It might be that we measured more verbal and psychical victimization, than relational victimization. Items about for example exclusion or gossiping were missing. Relational victimization is more common in girls than verbal and physical victimization (Crick & Grotpeter, 1995). To be able to report fully on the effectiveness of 'Happy at School', especially in girls, future research should examine the effectiveness of the program on relational victimization.

Peer-reports were gathered using a nomination procedure. Children were asked to nominate three classmates that were victimized. It could have been that there were classes in which fewer than three children were victimized. Therefore, it might have been that children were nominated as victims, although they were not. It would have been better to use a procedure with rating instead of nominations. However, to perform a procedure with ratings, names of classmates had to be known by the researcher before the measurement took place. In this study, these were not available. The interpretation of the effectiveness of the program as reported by peers should be done with caution, keeping the limitation of this study in mind.

Although the design of the study was a randomized trial, differences at baseline of the dependent variables between both conditions appeared. Randomization was done based on school characteristics and not on dependent variables. Children in the intervention group had higher initial problem levels than in the control group. An explanation for this could be that children in control condition schools were more inclined to participate in the study because they did not have to invest as much in the study as children in the intervention group did (who had to participate in a training program during their summer break). In the analyses, we corrected for these differences by controlling for baseline scores.

This study showed the importance of performing moderation analyses in intervention research. 'Happy at School' is only somewhat effective when studying the entire group and ignoring important differences within the intervention group. By taking moderation effects of gender and initial problem level into account it is made clear that, 'Happy at School' is much more effective for specific subgroups than for other subgroups. The current study focused on child factors as moderators. However, it is known that the therapeutic relationship is also important in determining the effectiveness of the program (e.g., Lambert & Barley, 2001). Future research could examine the influence of therapeutic relationships on the effectiveness of 'Happy at School'.

Conclusion

For all children 'Happy at School' is effective in increasing self-esteem and in decreasing parent-reported internalizing problems. In addition, the program is largely effective in reducing social anxiety, self-reported victimization and social disintegration in boys, especially with higher initial problem scores, but not in girls. 'Happy at School' is not effective in reducing parent-reported peer problems and peer-reported victimization. Teachers reported noticing more internalizing problems in the intervention group compared to the control group for both boys and girls.

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Chapter 5

The Working Mechanisms Behind the Effectiveness of 'Happy at School'. Processes of Moderated Mediation in a Preventive Program on an Important School Transition

Mulder, S.F., van Aken, M. A. G., & Raaijmakers, Q. A. W. (2014). The working mechanisms behind the effectiveness of 'Happy at School'. Processes of mediation and moderated mediation in a preventive program on an important school transition. *Manuscript submitted for publication.*

Abstract

In this cluster RCT, the hypothesized working mechanisms behind the effectiveness of 'Happy at School', a program for children with internalizing problems and peer problems, were studied during four measurement waves. It was studied whether increasing positive beliefs and decreasing negative beliefs mediated the effectiveness of 'Happy at School' on social anxiety, self-esteem, victimization and social disintegration. In addition, moderated mediation of gender and initial problem levels were examined. A total of 374 children participated in the study (184 in the intervention group, $M_{age} = 12$ years, $SD = 6.14$ months, 42.78% boys). Results showed that decreasing negative beliefs is an important working mechanisms of the training program 'Happy at School'. The effectiveness of 'Happy at School' is mediated by decreasing negative beliefs for the outcome variables social anxiety, self-esteem, victimization, and social disintegration. Results of this study seemed to suggest different working mechanisms for boys and girls with higher initial problem levels, but more research is needed to detect clear differences between groups of boys and girls with different initial problem levels.

Introduction

Studying the effectiveness of intervention programs is a well-established line of research. However, less is known about the working mechanisms, that is mediators, of interventions (Kazdin, 2007). A mediator is a variable that transmits the effect of an independent variable on a dependent variable (MacKinnon, Fairchild, & Fritz, 2007). Studying mediators is important for two reasons. First, identifying mediators gives us theoretical knowledge about what works in interventions. Second, knowing what works could optimize therapeutic effects (Kazdin, 2007) by ruling out what does not work and increasing parts of interventions that do work.

In a cluster randomized controlled trial the effectiveness of 'Happy at School' was demonstrated (chapter 4). 'Happy at School' is an indicated preventive social skills training program for children that are about to make the transition to secondary school (10-12 years old). The goal of the program is to reduce internalizing behavior (e.g., social anxiety and low self-esteem) and peer problems (e.g., victimization and social disintegration) and to prevent psychological disorders from emerging. 'Happy at School' is effective in increasing self-esteem in both boys and girls. Moreover, the program is effective in reducing self-reported social anxiety, victimization, and social disintegration in boys with high initial problem levels. In the current study we want to examine the working mechanisms of 'Happy at School' by studying the mediation effects of positive and negative beliefs on the outcome measures social anxiety, self-esteem, victimization and social disintegration. We will also examine whether these mediators are influenced by childrens gender and initial problem level (see Figure 1).

'Happy at School' is a training program based on cognitive behavioral therapy (CBT). The term 'cognitive-behavior modification' encompasses treatments that attempt to change behaviors by altering thoughts, interpretations, assumptions and strategies of responding (Kazdin, 1978). One of the fundamental propositions of CBT is that cognitive activity affects behavior (Dobson & Dozois, 2010). That is, cognitive appraisal of an event affects the behavioral response to that event. Modifying the content of these appraisals is proven to be of clinical value (e.g., Dobson et al., 2000; Dozois & Beck, 2008; Granvold, 1994; Hollon & Beck, 1994). The modification of cognitive appraisals is the basis of what is done in 'Happy at School'.

During the training the RET ABC scheme (Rational Emotive Therapy, A = activating event, B = beliefs, C = consequence, Ellis, 1962) is used. This states that situations induce beliefs, which lead to consequences. Symptoms of problems are the consequence (C) of not helpful beliefs (B) regarding a particular activating event or situation (A) (Dobson & Dozois, 2010). This can then be seen as a mediation process in which the treatment goal (reduction of problem behavior) is achieved via a working mechanism (for example, changing not helpful beliefs). During 'Happy at School' not helpful negative beliefs are identified within the child. Next, extensive explanations about why these beliefs are not helpful are offered to the child and these beliefs are challenged and reformulated into more helpful positive beliefs.

In cognitive schemata of socially anxious children, strong negative beliefs around the fear of negative social evaluation are present (e.g., Kendall & Treadwell, 2007; Hope, Rapee, Heimberg, & Dombeck, 1990) and in the schemata of children with low self-esteem negative beliefs about the self are present (Fenell, 2005). Modification of these beliefs might lead to a decrease in social anxiety and socially anxious behavior.

Moreover, not helpful beliefs can also lead to problems with peer interaction. Not helpful beliefs can induce quiet and withdrawn behavior, leading to few positive interactions and to social disintegration. Children that show withdrawn behavior are at risk of victimization (Olweus, 1993b).

In the current study we examine whether the effectiveness of 'Happy at School' on social anxiety, self-esteem, social disintegration and victimization is induced by modification of negative and not helpful beliefs. We hypothesize that a decrease in negative not helpful beliefs and an increase in positive, helpful beliefs will lead to less social anxiety, social disintegration and victimization and to higher levels of self-esteem.

Prior research about the effectiveness of 'Happy at School' (chapter 4) has shown that the effectiveness of the program was moderated by gender and initial problem level. 'Happy at School' was more effective in reducing social anxiety, victimization and social disintegration for boys, especially when initial problem levels were higher. Therefore, in addition to the mediation question, we will also examine whether the processes of mediation are influenced by childrens gender and initial problem level (moderated mediation).

Few studies have examined moderated mediation in intervention studies in children. In one study on the effectiveness of a preventive intervention in children from divorced families, it was found that the program was only effective when initial problem levels were higher. This moderation effect also influenced the mediation effect that was found: mediation effects of the mother-child relationship quality on internalizing problems were found when initial problems levels were higher (Tein, Sandler, MacKinnon, & Wolchik, 2004). One other study examined whether gender moderated the working mechanism of a program meant to reduce externalizing problems, but this was not found (Stolz, Deković, van Londen, Orobio de Castro & Prinzie, 2013). To our knowledge only the two just described intervention studies in children examined the moderation effect of initial problem level or gender on the mediation effects of the intervention.

In sum, in this study we want to examine whether the effectiveness of 'Happy at School' in decreasing social anxiety, victimization, social disintegration, and increasing self-esteem, works through decreasing negative, not helpful beliefs and increasing positive, helpful beliefs. We hypothesize that decreased negative not helpful beliefs, and increased positive helpful beliefs lead to less social anxiety, victimization and social disintegration and higher levels of self-esteem. In addition we want to study whether these mediation processes are dependent on child gender and child initial problem level.

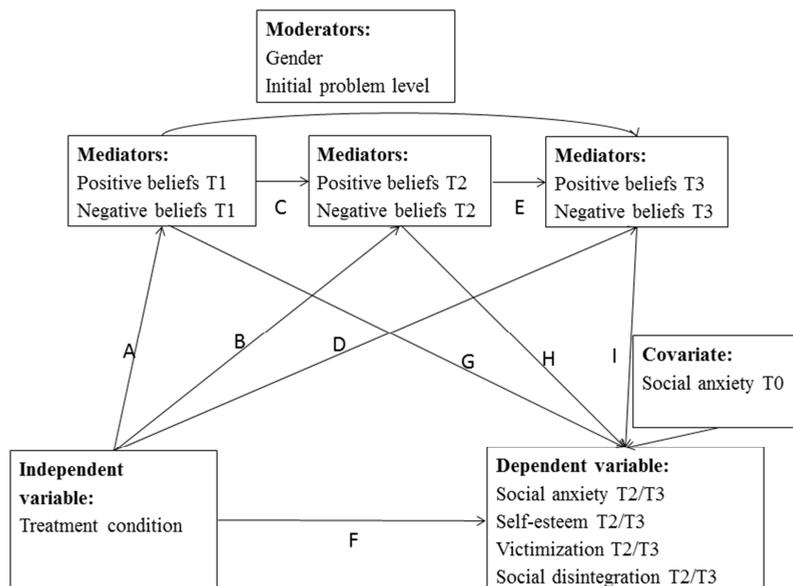


Figure 1. Hypothesized model of moderated mediation.

Method

Design and Randomization

This study was a cluster randomized controlled trial in which 374 children with internalizing problems or peer problems, were followed during their first year of secondary school. Randomization was done at school level by a researcher from another research institute. Pairs of schools were made according to school size, class size, religious background of the schools, and prior attention to social skills and victimization. Each of the pairs was randomly allocated to the intervention or the control condition. During the first year of data collection it became clear that more children of control schools agreed to participate than children of intervention schools. To create equal groups of children in both conditions, an oversampling of intervention schools was therefore created in the second year of data collection. To do that, groups of four, instead of two schools were made. Three schools were randomly allocated to the intervention group, and one school to the control group.

Participants

A total of 374 (190 in the control group and 184 in the intervention group, 42.8% boys) children with a mean age of 12 years (SD = 6.14 months) participated in this study.

The social economic status was representative of the Dutch population and included diverse levels. In 1.6% of the families both parents were unemployed. In 19.8% of the families only one of the parents had a paid job. In 76.5% of the families both parents had a paid job. Information was missing for 2.1% of the families.

Procedure

Inclusion of participants. The procedure for this study is also described extensively in chapter 4. Children were selected for the study based on screening done at the end of their elementary school period in the spring of 2009 and 2010. Schools were contacted first by a letter to inform them about the study and a financial compensation. Two weeks later, schools were contacted by phone for further information. Of the contacted schools, 150 schools (206 classes) agreed to participate. Consistent with school guidelines, passive informed consent of parents was obtained when the school agreed to participate in the screening part of the study. Approximately 96% of children participated in the screening of the study. Students filled in pencil and paper questionnaires during school hours. Confidentiality was assured. Teachers were responsible for the administration of the questionnaires, and were instructed intensively prior to the assessment.

Children with high scores were invited to participate in the study. A cut off score of 20% was used in all measurements, and calculated for boys and girls separately. Children were selected when they had 1. high social anxiety scores (Dekking, 1983) or 2. did not feel socially accepted (social acceptance scale, Harter, 1988; Treffers et al., 2002) and were victimized (victimization scale, Olweus, 1986; Liebrand, et al., 1991), or 3. did not feel socially accepted (social acceptance scale, Harter, 1988; Treffers et al., 2002) and felt socially disintegrated (social disintegration scale, Olweus, 1986; Liebrand, et al., 1991), or 4. bullied other children (bullying scale, Olweus, 1986; Liebrand, et al., 1991) and felt socially disintegrated (social disintegration scale, Olweus, 1986; Liebrand, et al., 1991), or 5. bullied other children (bullying scale, Olweus, 1986; Liebrand, et al., 1991) and did not feel socially accepted (social acceptance scale, Harter, 1988; Treffers et al., 2002). One other selection criterion was that at least one of the parents was able to speak, write and read Dutch. Two exclusion criteria were formulated. First, children following special education could not participate in the program because of the moderate cognitive capacity needed to be able to follow 'Happy at School' Therefore only regular educational schools could participate in the study. Second, selected children had to be moderately motivated to attend to the program. During an introductory interview the trainer decided on the level of motivation.

Parents of selected children were informed about the longitudinal study via a letter and had to give active informed consent to participate in the study. Parents of children in the intervention condition were informed about a study on the effectiveness of 'Happy at School', and their children were invited to participate in the study and in the training program. Parents of children in the control condition were informed about a study examining social relations in children making the transition to secondary school. Children participating in the control condition did not receive an intervention.

Measurement waves and informants. Children were monitored from the moment they made the transition to secondary school up to one year thereafter, with an initial data-collection at the end of elementary school (T0) and three measurement periods scheduled at one (T1), thirteen (T2) and forty (T3) weeks after the start of secondary school. Data was gathered using self-reports. After completing wave two, three and four, children received a gift card of ten euros.

Outcome Measures

Social anxiety. Social anxiety was measured with a Dutch Social Anxiety Scale (SAS-k, Dekking, 1983). Children responded to 46 statements about social anxiety distributed over four scales; (1) anxiety concerning social skills and situations in which a child is being noticed, (2) anxiety concerning intellectual capabilities, (3) anxiety concerning physical capabilities, and (4) anxiety concerning physical appearance. The questionnaire captures mainly affective and some somatic dimensions. Children had to respond to statements by choosing 'yes' or 'no'; which corresponded to their (dis)agreement with the statement. An example of a statement was: '*When I go into a room full of children, I get a shaky feeling.*' Mean scores on the four subscales together formed a total scale score. Higher scores indicated more social anxiety. Reliability and validity of the Social Anxiety Scale are reported to be adequate in a prior study (Dekking, 1983). Cronbach's alphas for the total scale in this study were .89 at T0, .95 at T1, .95 T2 and .95 at T3.

Self-esteem. Self-esteem was measured with the Global Self-Worth scale of the Dutch version of the Self Perception Profile for Adolescents (Harter, 1988; Treffers et al., 2002). Children had to respond to five items about how satisfied children are with themselves and the way they are leading their lives. As in previous studies (e.g., Thomaes, Bushman, Stegge & Olthof, 2008) we used a 4-point scale (1 = *I am not like these kids at all*; 4 = *I am exactly like these kids*). An example of an item is: '*Some kids are happy with themselves*'. A mean score of self-esteem was calculated. Cronbach's alphas for the scale were .75 at T0, .80 at T1, .83 at T2 and .86 at T3.

Victimization. Victimization was measured with the self-reported victimization subscale of a Dutch adaptation of the Olweus Bully/Victim Questionnaire (Olweus, 1986, KLRV-J, Liebrand, van Ijzendoorn, & van Lieshout, 1991). In the instructions, it was emphasized that victimization has a repetitive and intentional nature, and that it entails a power imbalance. Examples of what victimization is (e.g., saying mean things, kicking or hitting) and what it is not (when two kids of equal strength are fighting) were given. This definition of victimization captures verbal and physical victimization. The subscale consisted of four items (*How often did other children victimize you this school year? How often have you been victimized at school in the last 5 days? How often are you being hit, kicked, locked up or something like that? How often do children say mean things to you?*). Children were asked to respond to the items on a 5-point scale (1 = *never*; 5 = *several times a week*). A mean score of victimization was computed. Higher scores indicated more victimization. The scale was measured at T0, T2 and T3. It was not measured at T1 because new classmates knew each other for only one week at T1. The reliability of the victimization subscale was reported to be adequate in a prior study (van Lieshout, Verhoeven, Güroglu, Haselager, & Scholte, 2004). Cronbach's alphas in this study were .82 at T0 .71 at T2 and .74 at T3.

Social disintegration. Social disintegration was measured with the Social Disintegration subscale of a Dutch adaptation of the Olweus Bully/Victim Questionnaire (Olweus, 1986, KLRV-J, Liebrand, et al., 1991). The subscale consisted of four items (*How many good friends do you have in your class? How often are you alone during breaks because children of your class don't want to spend breaks with you? Do you feel lonely at school?*

Do you feel less well liked than other children in your class?). Children were asked to respond to the items on a 5-point scale (1 = *never*; 5 = *several times a week*). A mean score was computed. Higher scores indicated more social disintegration. The scale was measured at T0, T2 and T3. It was not measured at T1 because new classmates knew each other for only one week at T1. The reliability of the subscale was reported to be adequate in a prior study (Solberg & Olweus, 2003). Cronbach's alphas in this study were .72 at T0, .62 at T2 and .63 at T3.

Mediators

Positive and negative beliefs. Positive and negative beliefs were measured with the Dutch questionnaire Positive and Negative Thoughts in Children (PNG-k, Bracke & Braet, 1999), which is based on Negative Affectivity Self-Statements Questionnaire (Ronan, Kendall & Rowe, 1994) and the Automatic Thoughts Questionnaire-Positive (ATQ-P; Ingram & Wisnicki, 1988). Children had to respond to 70 items about thoughts distributed on a positive thoughts scale, and a negative thoughts scale, using a 5-point scale (1 = *never*; 5 = *the whole time*) for each item. An example of an item on the positive thoughts scale was: *'I am proud of myself.'* An example of an item on the negative thoughts scale was: *'I feel like crying.'* Mean scores per subscale were calculated. Higher scores of negative thoughts indicate more negative thought; higher scores of positive thoughts indicate less positive thoughts. Cronbach's alphas for the positive thoughts scale in this study were .93 at T0, .95 at T1, .95 T2 and .95 at T3. Cronbach's alphas for the negative thoughts scale in this study were .94 at T0, .95 at T1, .96 T2 and .96 at T3.

Moderators

Gender. Gender was coded as a dichotomous variable in which boys were coded as 0 and girls were coded as 1.

Initial problem level. Initial problem level was defined as child problem level at baseline on the four dependent variables. Initial problem levels were calculated for boys and girls separately. Groups of boys and girls with below the mean or above the mean initial problem levels were made (see primary analyses).

Analyses

Data structure. This study had a double cluster design. Children of the intervention group were nested in classes and in health care providers. Children of control groups were nested in classes. A possible multilevel structure was tested using MLwiN 2.21. A multilevel structure at class level was checked at baseline (randomization at class level would logically cause differences between school at follow-up waves). A multilevel structure at the health care provider level was checked at T1, T2, and T3. No multilevel structure was present. The average intraclass correlation coefficient at the intervention group (individual) level was .00, and at the class level it was .07. No multilevel analyses were necessary.

Means and standard deviations. Descriptive analyses were conducted to check whether randomization resulted in differences of baseline scores of dependent variables between both conditions at the individual level.

Results revealed differences between both groups at victimization, self-esteem, and social disintegration (see Table 1). Therefore, all analyses were conducted using these baseline scores as covariates.

Table 1 *Baseline Characteristics at Cluster and Individual Level and Mean Scores of Outcome Measures and Mediators*

	Intervention condition	Control condition	<i>t</i>
<i>School characteristics</i>			
Number of classes	159	106	
Mean school size (<i>SD</i>)	201.40 (100.31)	223.03 (128.49)	
Mean class size (<i>SD</i>)	22.56 (13.20)	24.86 (12.85)	
<i>Individual characteristics</i>			
Number	184	190	
Male, <i>n</i> (%)	75 (40.76%)	85 (44.73%)	
Mean age in years (<i>SD</i>)	12.04 (.53)	11.97 (.49)	-1.40
<i>Outcome measures</i>			
Social anxiety (<i>SD</i>)	0.38 (.20)	0.35 (.17)	-1.52
Self-esteem (<i>SD</i>)	2.71 (.70)	2.89 (.55)	2.71*
Victimization (<i>SD</i>)	2.11 (.92)	1.86 (.76)	-2.84*
Social disintegration (<i>SD</i>)	2.35 (.95)	1.89 (.72)	-5.17**
<i>Mediators</i>			
Positive beliefs (<i>SD</i>)	3.47 (.57)	3.22 (.55)	-3.99**
Negative beliefs (<i>SD</i>)	1.97 (.57)	1.94 (.49)	-0.56

* significantly different from the intervention group at $p < .01$, ** significantly different from the intervention group at $p < .001$

Primary analyses. The mediational model was tested using Structural Equation Modeling with Mplus version 7 (Muthén & Muthén, 2013). Missing data was handled using full information maximum likelihood, and model fit was evaluated on the basis of the Comparative Fit Index (CFI), the Tucker–Lewis Index (TLI), the Root-Mean-Square Error of Approximation (RMSEA), and the Standardized Root Mean Residual (SRMR; Hu & Bentler, 1998, 1999). CFI and TLI values of .90 or above and RMSEA and SRMR values of .08 or below indicate acceptable fit.

The mediational model that has been tested is described in Figure 1. Moderators are tested by using multi-group analyses. The effectiveness of 'Happy at School' on social anxiety, self-esteem, victimization and social disintegration mediated by positive beliefs and by negative beliefs were tested separately. Different indirect effects were tested. During all analyses we corrected for baseline score of the dependent variable. When indirect effects were significant, the directions of the effects were examined by interpreting the direct effects. Direct effects of condition on outcome measures (path F) was tested two times; one time without positive/negative beliefs in the model, to test the effectiveness of the program, and one time with positive/negative beliefs in the model, to test whether the mediation was full or partial. Results of the analyses will be discussed below.

To examine whether the working mechanisms were only applicable to specific subgroups (moderation effects), multi-group analyses were conducted. First, it was tested whether gender moderated the indirect effects.

Indirect effects were specified for boys and girls. Second, it was examined whether initial problem level moderated the indirect effects. Four groups were specified, in which gender and initial problem levels were combined: (1) boys with above the mean initial problem levels (social anxiety $n = 74$, victimization $n = 55$, social disintegration $n = 80$); (2) boys with below the mean initial problem levels (social anxiety $n = 81$, victimization $n = 105$, social disintegration $n = 80$); (3) girls with above the mean initial problem levels (social anxiety $n = 100$, victimization $n = 79$, social disintegration $n = 88$); and (4) girls with below the mean initial problem levels (social anxiety $n = 112$, victimization $n = 135$, social disintegration $n = 126$). Differences between the indirect effects were tested with the WALD test. A significant WALD test indicates differences between groups. Results are discussed in the text.

In addition to the above analyses, all analyses were replicated with bootstrap analyses. Differences between groups were examined by comparing confidence intervals of indirect effects. Inconsistencies between analyses with the WALD test, and bootstrap analyses will be discussed.

Results

Mediation

For each of the four models (indirect effects of positive beliefs at T2 and at T3 and indirect effects of negative beliefs at T2 and at T3) different indirect effects are tested. When the dependent variable is the outcome measure at T2, two indirect paths are tested: (1) condition on the dependent variable at T2 via positive/negative beliefs at T2 (path BH); and (2) condition on the dependent variable at T2 via positive/negative beliefs at T1 and at T2 (path ACH). When the dependent variable is the outcome measure at T3, three indirect paths are tested: (1) condition on the dependent variable at T3 via positive/negative beliefs at T3 (path DI); (2) condition on the dependent variable at T3 via positive/negative beliefs at T2 and T3 (path BEI); and (3) condition on the dependent variable at T3 via positive/negative beliefs at T1, T2 and T3 (path ACEI).

Results showed that all significant indirect effects were in the same direction; more positive beliefs/less negative beliefs in the intervention group compared to the control group. These were positively associated with positive/negative beliefs at later waves. Later wave positive/negative beliefs were associated with higher levels of self-esteem and lower levels of social anxiety, victimization and social disintegration. Significant indirect paths will now be discussed.

1. Decreasing negative beliefs as a working mechanism for the reduction of social anxiety at T2. The effectiveness of 'Happy at School' on decreasing social anxiety at T2 occurred via a decrease in negative beliefs. The model fit was moderate ($\chi^2(13, N = 335) = 11.61, p = .000$), CFI = .97, TLI = .87, RMSEA = .12, SRMR = .06). There was a significant direct effect of 'Happy at School' on decreasing social anxiety at T2 (path F without negative beliefs: $B = -.05, SE = .03, p = .035$; path F with negative beliefs: $B = -.02, SE = .02, p = .351$). None of the specific tested indirect effects were significant, but the sum of indirect effects was significant ($B = -.03, SE = .01, p = .033$). Negative beliefs fully mediated the relation the effectiveness of 'Happy at School' on social anxiety at T2.

2. Decreasing negative beliefs as a working mechanism for the reduction of social anxiety at T3. The effectiveness of 'Happy at School' on decreasing social anxiety at T3 occurred via a decrease in negative beliefs. The model fit was acceptable ($\chi^2(3, N = 338) = 10.55, p = .014$), CFI = .98, TLI = .93, RMSEA = .09, SRMR = .05). There was no significant direct effect of 'Happy at School' on decreasing social anxiety at T3 (path F without negative beliefs: $B = -.04, SE = .02, p = .083$; path F with negative beliefs: $B = -.01, SE = .02, p = .690$). None of the specific indirect effects were significant, but the sum of indirect effects was significant ($B = -.03, SE = .01, p = .021$).

3. Decreasing negative beliefs as a working mechanism for the improvement of self-esteem at T2. The effectiveness of 'Happy at School' on improving self-esteem at T2 occurred via a decrease in negative beliefs. The model fit was moderate ($\chi^2(2, N = 318) = 15.39, p = .001$), CFI = .96, TLI = .84, RMSEA = .15, SRMR = .08). There was no significant direct effect of 'Happy at School' on improving self-esteem at T2 (path F without negative beliefs: $B = .11, SE = .06, p = .074$; path F with negative beliefs: $B = .00, SE = .05, p = .942$). The indirect path BH was significant ($B = .06, SE = .03, p = .041$). Path B: $B = -.11, SE = .05, p = .037$, path H: $B = -.57, SE = .06, p = .000$), as well as the sum of indirect effects ($B = .09, SE = .04, p = .020$).

4. Decreasing negative beliefs as a working mechanism for the improvement of self-esteem at T3. The effectiveness of 'Happy at School' on improving self-esteem at T3 occurred via a decrease in negative beliefs. The model fit was moderate ($\chi^2(2, N = 324) = 22.67, p = .001$), CFI = .96, TLI = .83, RMSEA = .14, SRMR = .09). There was no significant direct effect of 'Happy at School' on improving self-esteem at T3 (path F without negative beliefs: $B = -.12, SE = .07, p = .074$; path F with negative beliefs: $B = -.01, SE = .05, p = .926$). The indirect path BEI was significant ($B = .04, SE = .02, p = .045$). Path B: $B = -.11, SE = .05, p = .036$, Path E: $B = .57, SE = .06, p = .000$, path I: $B = -.60, SE = .06, p = .000$), as well as the sum of indirect effects ($B = .09, SE = .04, p = .013$).

5. Decreasing negative beliefs as a working mechanism for the reduction of victimization at T2. The effectiveness of 'Happy at School' on decreasing victimization at T2 occurred via a decrease in negative beliefs. The model fit was moderate ($\chi^2(2, N = 342) = 10.13, p = .006$), CFI = .97, TLI = .87, RMSEA = .11, SRMR = .05). There was no significant direct effect of 'Happy at School' on decreasing victimization at T2 (path F without negative beliefs: $B = -.04, SE = .07, p = .527$; path F with negative beliefs: $B = .03, SE = .06, p = .643$). None of the specific indirect effects were significant, but the sum of indirect effects was significant ($B = -.05, SE = .02, p = .036$).

6. Decreasing negative beliefs as a working mechanism for the reduction of victimization at T3. The effectiveness of 'Happy at School' on decreasing victimization at T3 occurred via a decrease in negative beliefs. The model fit was good ($\chi^2(3, N = 345) = 10.88, p = .012$), CFI = .98, TLI = .91, RMSEA = .09, SRMR = .05). There was no significant direct effect of 'Happy at School' on decreasing victimization at T3 (path F without negative beliefs: $B = -.08, SE = .09, p = .344$; path F with negative beliefs: $B = -.02, SE = .08, p = .785$). None of the specific indirect effects were significant, but the sum of indirect effects was significant ($B = -.10, SE = .04, p = .016$).

7. Decreasing negative beliefs as a working mechanism for the reduction of social disintegration at T2. The effectiveness of 'Happy at School' on decreasing social disintegration at T2 occurred via a decrease in negative beliefs. The model fit was acceptable ($\chi^2(2, N = 342) = 6.37, p = .041$), CFI = .98, TLI = .91, RMSEA = .08, SRMR = .04). There was a significant direct effect of 'Happy at School' on decreasing social disintegration at T2 (path F without negative beliefs: $B = -.19, SE = .08, p = .012$; path F with negative beliefs: $B = -.13, SE = .07, p = .080$). None of the specific indirect effects were significant, but the sum of indirect effects was significant ($B = -.05, SE = .03, p = .042$). Negative beliefs fully mediated the relation the effectiveness of 'Happy at School' on social disintegration at T2.

8. Decreasing negative beliefs as a working mechanism for the reduction of social disintegration at T3. The effectiveness of 'Happy at School' on decreasing social disintegration at T3 occurred via a decrease in negative beliefs. The model fit was acceptable ($\chi^2(3, N = 345) = 7.27, p = .064$), CFI = .99, TLI = .95, RMSEA = .07, SRMR = .04). There was no significant direct effect of 'Happy at School' on decreasing social disintegration at T3 (path F without negative beliefs: $B = -.029, SE = .08, p = .710$; path F with negative beliefs: $B = -.06, SE = .07, p = .401$). None of the specific indirect effects were significant, but the sum of indirect effects was significant ($B = -.09, SE = .04, p = .017$).

Moderated Mediation

It was examined whether the working mechanism was the same for different subgroups by examine processes of moderated mediation. First, it was examined whether gender moderated the mediational process of positive and negative beliefs. None of the indirect effects were moderated by gender. Second, it was examined whether a combination of gender and initial problem level moderated the mediational process of positive and negative beliefs. This combination was made, because mean initial problem levels were different for boys and girls. Initial problem levels could therefore not be analyzed without considering gender.

For all four dependent variables the combination between initial problem level and gender moderated the mediation effect of positive and negative beliefs on several occasions. Significant differences between groups in indirect paths will now be discussed. Again, results showed that all significant indirect effects were in the same direction; more positive beliefs/less negative beliefs in the intervention group compared to the control group. These were positively associated with positive/negative beliefs at later waves. Later wave positive/negative beliefs were associated with higher levels of self-esteem and lower levels of social anxiety, victimization and social disintegration.

1. Decreasing negative beliefs as a working mechanism for the reduction of social anxiety at T2. The indirect effect of condition via negative beliefs at T2 on social anxiety a T2 (path BH) was significantly different between boys with initial problem levels above the mean and girls with initial problem levels below the mean ($\Delta\chi^2(1, N = 315) = 4.15, p = .042$). For these boys, the indirect effect was significant ($B = -.06, SE = .03, p = .027$). For these girls, the indirect effect was not significant ($B = -.01, SE = .01, p = .725$). There were no other differences between the groups in path BH for the model with negative beliefs.

2. Increasing positive beliefs as a working mechanism for the reduction of social anxiety at T3. The indirect effect of condition via increased positive beliefs at T2 and T3 on social anxiety at T3 (path BEI) was significantly different between boys and girls with initial problem levels above the mean ($(\Delta\chi^2(1, N = 315) = 4.24, p = .040)$). For these boys, the indirect effect was not significant ($B = .00, SE = .00, p = .854$). For these girls, the indirect effect was significant ($B = -.03, SE = .01, p = .036$). In addition, this indirect effect was also significantly different between girls with initial problem levels above and below the mean ($(\Delta\chi^2(1, N = 315) = 4.60, p = .032)$). For girls with initial problem levels below the mean, the indirect effect was not significant ($B = .00, SE = .00, p = .606$). There were no other differences between the groups in path BEI for the model with positive beliefs.

3. Increasing positive beliefs as a working mechanism for the reduction of victimization at T2. The indirect effect of condition via increased positive beliefs at T2 on victimization at T2 (path BH) was significantly different between girls and boys with initial problem levels below the mean and girls with initial problem levels above the mean ($(\Delta\chi^2(1, N = 315) = 4.12, p = .043)$). In boys with initial problem levels below the mean, the indirect effect was not significant ($B = .00, SE = .01, p = .896$). In girls with initial problem levels above the mean this effect was trend significant ($B = -.10, SE = .05, p = .050$). There were no other differences between the groups in path BH in the model with positive beliefs.

4. Decreasing negative beliefs as a working mechanism for the reduction of victimization at T3. The sum of indirect effects of condition on victimization at T3 via negative beliefs differed significantly between boys with above and below the mean initial problem levels ($(\Delta\chi^2(1, N = 315) = 4.16, p = .041)$). In boys with below the mean initial problem levels the sum of indirect effects was not significant ($B = -.03, SE = .04, p = .505$). In boys with above the mean initial problem levels the sum of indirect effects was significant ($B = -.32, SE = .14, p = .020$). There were no other differences between the groups in the sum of indirect effects in the model with positive beliefs.

5. Increasing positive beliefs as a working mechanism for the improvement of self-esteem at T2. The indirect effect of condition via increased positive beliefs at T2 on self-esteem at T2 (path BH) was significantly different between girls with initial problem levels above the mean and boys with initial problem levels below the mean ($(\Delta\chi^2(1, N = 315) = 4.34, p = .037)$). In boys with below the mean initial problem levels the sum of indirect effects was not significant ($B = -.01, SE = .03, p = .892$). In girls with above the mean initial problem levels the sum of indirect effects was significant ($B = .15, SE = .06, p = .023$). There were no other differences between the groups in path BH in the model with positive beliefs.

6. Increasing positive beliefs as a working mechanism for the improvement of self-esteem at T3. The indirect effect of condition via increased positive beliefs at T2 and T3 on social anxiety at T3 (path BEI) was significantly different between boys and girls with initial problem levels above the mean ($(\Delta\chi^2(1, N = 315) = 4.12, p = .042)$). For these boys, the indirect effect was not significant ($B = .00, SE = .01, p = .681$). For these girls, the indirect effect was significant ($B = .08, SE = .04, p = .030$). There were no other differences between the groups in path BEI in the model with positive beliefs.

There were no other differences between groups in the indirect effects of increased positive beliefs/decreased negative beliefs on the effectiveness of 'Happy at School' on social anxiety, victimization, social disintegration and self-esteem.

Bootstrap analyses

All analyses have been replicated using bootstrap analyses. Overall the results were in line with the above described results. However, a few results were contradictory. In the above analyses, a significant sum of indirect effects of negative beliefs influencing the relation between condition and social disintegration at T2 was found. This result was not found in the bootstrap analyses.

Multi-group analyses using the WALD test also showed some different results compared to the results of the bootstrap analyses. In the above analyses, two significant differences between groups were found, which were not found in the bootstrap analyses.

First, in the above analyses the indirect effect of condition via decreased negative beliefs at T2 on social anxiety at T2 (path BH) was significantly different between boys with initial problem levels above the mean and girls with initial problem levels below the mean. This result was not found in the bootstrap analyses.

Second, in the above analyses, a significant difference was found between boys with initial problem levels below the mean and girls with initial problem levels above the mean in the indirect effect of condition via increased positive beliefs at T2 on victimization at T2 (path BH). This result was not found in the bootstrap analyses.

All other results of the bootstrap analyses were in line with the above analyses.

Discussion

In this study we examined whether the working mechanism behind the effectiveness of 'Happy at School' on social anxiety, self-esteem, victimization and social disintegration is the decrease of negative beliefs and the increase of positive beliefs.

'Happy at School' uses the RET ABC scheme (Ellis, 1962). During the training program, negative beliefs are challenged and reformulated into more helpful and positive beliefs. It was hypothesized that the training program leads to more positive beliefs and less negative beliefs and then to less social anxiety, victimization and social disintegration and more self-esteem. The results were partly in line with what we expected based on the theoretical basis of 'Happy at School' (Faber, 2005).

The decrease of negative beliefs was a working mechanism behind the effectiveness of 'Happy at School' on social anxiety, self-esteem, victimization and social disintegration. There were no direct effects of 'Happy at School' on social anxiety T3, self-esteem T2 and T3, victimization T2 and T3 and social disintegration T3 in a model without negative beliefs. In addition to that, there was an indirect effect of condition on these outcome measures via negative beliefs. For social anxiety T2 and social disintegration T2, there was a direct effect of 'Happy at School' which was fully mediated by negative beliefs. In contrast to what was expected, an increase in positive beliefs did not lead to a decrease in problem behavior for the total sample. However, in addition to the indirect effect for the total sample, we also examined whether working mechanisms were the same for boys and girls, and for groups with different initial problem levels.

Although results were inconsistent over the different tested models, results did give some indication that decreasing negative beliefs was important for boys with higher initial problem levels, but also that increasing positive beliefs was important for girls with higher initial problem levels.

Two important findings will be discussed in more detail. First, a direct effect of 'Happy at School' on reducing social anxiety and social disintegration at T2 was found, but no direct effect of the program on the other outcome measures and waves was found. However, it was found that there was an indirect effect of the program on these other outcome measures via negative beliefs. In the past there has been a debate about whether mediation was possible in cases in which there was no relation between the dependent variable and the independent variable. Baron and Kenny (1986) suggested that mediation was only possible when there is a significant relation between all three variables (independent variable, dependent variable and mediator). However, among others, Hayes (2009) and MacKinnon, Fairchild and Fritz (2007) argued that a significant relation between the dependent and the independent variable should not be assumed before hypothesizing mediation. Several cases are described in which there was no relation between the independent variable and the dependent variable, but there was a relation between the independent variable and the mediator and the mediator and the dependent variable. It has been suggested that this could be explained by other mechanisms, not included in the model, working in the opposite direction. Thus, this would mean that there is a mechanism active in children in the intervention group that had a negative effect on the dependent variable. It could be that children in the intervention group became more aware of their problems, leading to a (temporary) increase in experienced problems. It would be interesting to examine whether this higher awareness has less effect on the outcome measures over time, leaving a direct effect of 'Happy at School' and an (partial) indirect effect of negative beliefs, on the outcome measures.

Second, results of moderation analyses in the prior effectiveness study (Mulder et al., 2014), showed that 'Happy at School' was only effective in decreasing social anxiety, victimization and social disintegration for boys with higher initial problem levels. Therefore, we wanted to examine whether the theoretical working mechanism of 'Happy at School' was only applicable to specific subgroups, and whether this might explain why 'Happy at School' was more effective in boys on these outcome measures. Results of the moderated mediation analyses in the current study were inconsistent over paths and outcome measures, groups and between both methods of analyses (WALD test and bootstrap analyses). In some models, differences between groups in indirect paths were found, but in other models these results were not found. In addition, mostly one group differed from one other group, but not from the other two groups in indirect effects. For example, there could be a difference between girls with above and below the mean initial problem levels, while these two groups did not differ from boys with above and below the mean initial problem levels. Based on the results of the study we are not able to draw strict conclusions about the working mechanisms of 'Happy at School' for different groups. It could be that the relatively small sample per subgroup explains this. Power might have been too small to detect all differences. However, overall, results seemed to suggest that indirect effects were stronger when initial problem levels were higher in both boys and girls and in positive and negative beliefs.

Results might suggest that decreasing negative beliefs was important for boys with higher initial problem levels, but also that increasing positive beliefs was important for girls with higher initial problem levels in decreasing social anxiety and victimization and increasing self-esteem. This was found for some of the indirect paths in decreasing social anxiety and victimization and increasing self-esteem. In contrast to what we expected, based on our analyses of the effects of the program, results of this study gave some indication that (because of full mediation of positive beliefs), 'Happy at School' might be effective for girls with higher initial problem levels in decreasing social anxiety and victimization and increasing self-esteem when positive beliefs are increased. However, again because of the inconsistencies of the results, no strict conclusions about this finding can be drawn. Because of the large implications for practice that might result from different working mechanisms between groups, future research should examine these differences with a larger sample size. In addition, other mechanisms that influence the effectiveness of 'Happy at School' should be examined.

Mostly, the sum of indirect effects was significant, while the specific indirect effects were not. This can be explained because of the size of the indirect effects. Possibly, the size of the specific indirect effects was too small to be significant, but the sum of the specific indirect effects was strong enough to be significant.

In this study, we examined changing positive and negative beliefs as a working mechanism of the training program. During the training program much attention is paid to the modification of negative and not helpful beliefs. However, in addition to this, attention is also paid to proper body language. Children learn about the influence of body language on social interaction, and are taught to adapt the body language. In the current study, no observational data was collected. Improvement of body language was therefore not measured. Future research should examine improvement of body language as one other working mechanism of 'Happy at School.'

Some strengths and limitations should be discussed. This study is the first to examine whether a combination of gender and initial problem level moderated the indirect effects of an intervention. In other words, we examined whether the working mechanism differed between specific subgroups. This study shows the importance of examining moderated mediation.

As a results of randomization at the school level, differences between the intervention condition and the control condition for baseline scores of the dependent measures were present. We corrected for the differences by including baseline scores of the dependent measure as a covariate. However, including a covariate takes variance away, leaving less residual variance. This might have accentuated the results.

Conclusion

Decreasing negative beliefs is an important working mechanism of the training program 'Happy at School'. The effectiveness of 'Happy at School' is mediated by decreasing negative beliefs for social anxiety, self-esteem, victimization, and social disintegration. Results of this study also suggest different working mechanisms between boys and girls with higher initial problems levels, but more research is needed to detect clear differences between groups.

Chapter 6

Summary and General Discussion

Internalizing problems and peer problems are known to affect children's lives, both directly and in later life (e.g., Hawker & Boulton, 2000; Kaltiala-Heino, Rimpelä, Marttunen, Rimpelä, & Rantanen, 1999; Pine, Cohen, Gurley, Brooks, & Ma, 1998; Wittchen, Essau, Von Zerssen, Krieg, & Zaudig, 1992). Consequences of these problems are, for example, having few friends, being at risk for victimization, having difficulties at school (Essau, Conradt, & Petermann, 2002; Kendall, Safford, Flannery-Schroeder, & Webb, 2004; Khalid-Khan, Santibanez, McMicken, & Rynn, 2007; Rubin & Burgess, 2001; Wittchen, Stein, & Kessler, 1999), or being at risk for the development of internalizing disorders such as anxiety disorders or clinical depression (Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005).

The aim of this dissertation is twofold. First, we examined the relation between social anxiety and victimization. Risk factors, as well as the prospective relation between social anxiety and victimization, were examined. Second, the effectiveness of 'Happy at School' was studied. Three important questions were: Does the program work? For whom does it work? And how does it work? In this chapter, the main findings are summarized, strengths and limitations of the studies are described, and implications for practice are discussed. Directions for future research and a general conclusion are offered at the end of the chapter.

Studying the Relation between Social Anxiety and Victimization: Study 1 and 2

In chapters 2 and 3, two studies examining the relation between social anxiety and victimization were described. In chapter 2, we described that social anxiety and victimization were positively related. Social anxiety was moderately related with all five personality traits. Victimization was moderately related with extraversion, agreeableness, conscientiousness and neuroticism. Moreover, the association between social anxiety and victimization was stronger for boys than for girls. Interaction analyses showed that socially anxious children scoring low on extraversion were more at risk for victimization compared to socially anxious children scoring higher on this trait. In addition, it was found that socially anxious boys scoring low on agreeableness were more at risk for victimization compared to socially anxious boys scoring higher on this trait. These results indicate that high scores of extraversion and high scores of agreeableness (for boys) are protective factors against victimization for socially anxious children.

In chapter 3, a study examining the longitudinal interplay between social anxiety and victimization is described. Both social anxiety, and peer-reported victimization and social anxiety and self-reported victimization were related at baseline. Moreover, social anxiety, and self- and peer-reported victimization were all relatively stable over time. Cross-lagged analyses showed that that higher baseline social anxiety scores predicted increased future peer- and self-reported victimization in boys, and increased future self-reported victimization in girls, over and above the stability of victimization. Reverse cross-lagged effects of victimization on changes in social anxiety were not found. These results indicate that social anxiety leads to victimization, both according to self-reports and peer-reports (for boys).

Gender Differences in Study 1 and 2

In both studies, gender differences in the relation between social anxiety and victimization were found: (1) The correlation between social anxiety and victimization was stronger for boys than for girls. (2) Socially anxious boys scoring low on agreeableness were more at risk for victimization compared to boys scoring higher on this trait, whereas this was not found for girls. (3) Higher baseline social anxiety scores predicted increased future peer-reported victimization in boys, but not in girls. Overall, it could be concluded that socially anxious boys are more at risk for victimization. However, chapter 3 showed that this higher risk of victimization for boys was only reported by peers. According to self-reports, both socially anxious boys and girls are more at risk for victimization. Contradictory findings between self- and peer-reported victimization can be explained by a combination of social information processing bias of socially anxious children, and prototype gender roles. It is known that socially anxious children interpret social situations in a more negative manner than non-anxious children (e.g., Beard & Amir, 2008; Miers et al., 2008). It could be that socially anxious children (both boys and girls) interpret (ambiguous) situations more often as bullying situations, explaining the effects when self-reports are used. However, it might be that, because of male gender roles, only in boys are these situations also observed as victimization situations by peers. Male gender roles describe boys as being dominant and tough. Socially anxious boys do not fit in this gender role, which might make them an easy target for bullies. For girls, on the other hand, social anxiety might be less discrepant with gender roles. These differences in gender roles, in the eye of peers, might explain why girls' social anxiety does not lead to later peer-reported victimization.

Strengths and Limitations of Study 1 and 2

In the studies undertaken, both self-reports and peer-reports of victimization were used. This was important because it gave us the opportunity to compare different reports of victimization. Children themselves are in the best position to report on the incidence of perceived victimization. But additionally, peer-reports provide a useful different judgment on victimization, because they observe victimization from a different perspective. Moreover, the use of peer reports reduces the chances of finding results that are based on shared method variance (e.g., Crick & Bigbee, 1998; Storch et al., 2005). Last, the correlation coefficient between peer-reported and self-reported victimization is typically only between .2 and .4 (Juvonen, Nishina & Graham, 2001), suggesting that both constructs are not the same, but complementary. Including two sources of information allowed for a comprehensive view of victimization compared to using only one informant source.

Another strength was that a large sample size was used in both studies (chapter 2, $n = 1814$, chapter 3, $n = 1669$). This large and diverse sample (e.g., Public schools, Roman Catholic schools, Protestant schools, and Reformed schools, with varied school sizes and different educational levels, and located in areas with different densities of population) gave us the opportunity to generalize results to a population of early adolescents. On the other hand, although large community based samples were used, generalization to others samples, such as clinical samples or non-western societies, still should be made with caution.

For example, it is known that social anxiety in Western cultures is mostly about the fear of social evaluation by others, whereas in Japanese or Korean cultures, for example, it is more about concerns of offending or embarrassing others (Hofmann, Asnaani, & Hinton, 2010). Therefore the relation between social anxiety and victimization could be very different in non-western societies. Moreover, the results could also be different in clinical samples.

Future Research and Implications of Study 1 and 2

The results of both studies that examine the relationship between social anxiety and victimization have several important implications. Both studies contribute to the literature that asserts that social anxiety is a risk factor for victimization, both cross-sectional, and prospective. In addition, it was shown that victimization does not lead to social anxiety. The conclusion that social anxiety leads to victimization has important implications for prevention and intervention. It is important that teachers and parents keep a close eye on socially anxious children so that they can prevent victimization from emerging, or that they can intervene rapidly when victimization starts. In addition, socially anxious children could be taught behavioral tools pertaining to interacting with peers: standing up straight, making eye contact and learning how to start a conversation; behavioral aspects of extraversion, such as assertiveness or taking initiative; or, agreeableness (for boys), such as listening to other children or working together. Learning and adopting these behavioral tools could prevent victimization from happening.

Both studies specifically focused on child factors moderating the relation between social anxiety and victimization. Of course, there are numerous other factors that are important in determining the relation between social anxiety and victimization. For example, the frequency, duration, stability, and severity of victimization might influence the consequences of victimization (Kochenderfer Ladd & Ladd, 2001). Other factors that may be important to study include popularity, friendships, and self-esteem, but also contextual factors such as group processes of victimization (e.g., Olweus, 2001; Salmivalli, 2010). In addition, family-factors can play an important role in determining the incidence of both victimization and social anxiety (e.g., Detweilier, Comer, & Albano, 2010; Ollendick & Hirshfeld-Becker, 2002; Perry, Hodges, & Egan, 2001). Future research could examine the magnitude of these other factors on the relationship between social anxiety and victimization.

In addition to other possible moderators, it would also be interesting to examine social information processing bias as a possible mediator. Social information processing biases are suggested as an explanation for gender differences. Future research should examine whether social information processing biases in socially anxious children are (partially) responsible for the prospective relation between social anxiety and victimization. A social information processing bias could be responsible for, for example, withdrawn behavior, because social situations are interpreted as more negative by socially anxious children (e.g., Beard & Amir, 2008; Miers et al., 2008). This withdrawn behavior could in turn lead to victimization (Creed & Funder, 1998; Davila & Beck, 2002; Egan & Perry, 1998; Grills & Ollendick, 2002; Siegel et al., 2009).

Effectiveness, Moderation and Mediation of ‘Happy at School’: Study 3 and 4

Effectiveness and Moderation

In chapter 4 the study examining the effectiveness and moderation of the effectiveness of the social skills training program ‘Happy at School’ is described. For all children ‘Happy at School’ was effective in increasing self-esteem and in decreasing parent-reported internalizing problems. In addition, the program was largely effective in reducing social anxiety, self-reported victimization and social disintegration in boys, with higher initial problem scores, but not in girls. ‘Happy at School’ is not effective in reducing parent-reported peer problems and peer-reported victimization. Teachers reported noticing more internalizing problems in the intervention group compared to the control group for both boys and girls.

Apparently, parents and teachers differed in their reports on the effectiveness of ‘Happy at School’. Although parents reported a decline in internalizing problems, teachers reported an increase in these problems in the intervention group compared to the control group. Most likely, children did not actually experience more internalizing problems than they used to, which was confirmed by self-reported and parent-reported levels of internalizing problems, but they informed their teacher more about these problems. During the training program, much attention was paid to talking about internalizing problems and peer problems. Children were specifically advised to talk to a teacher when they experienced problems, because teachers (in contrast to parents) normally do not often notice, or at least report (Stanger & Lewis, 1993; Youngstrom, Loeber, & Stouthamer-Lober, 2000) these problems. This could have resulted in more teacher-reported internalizing problems.

Mediation

To examine how ‘Happy at School’ was effective, working mechanisms were examined by performing mediation and moderated mediation analyses. Results are described in chapter 5 and showed that decreasing negative beliefs is an important working mechanism of the training program ‘Happy at School’ in decreasing social anxiety, victimization, and social disintegration and in increasing self-esteem.

Indirect effects of negative beliefs were found in all models. Although there were no direct effects of ‘Happy at School’ on social anxiety T3, self-esteem T2 and T3, victimization T2 and T3 and social disintegration T3 in a model without negative beliefs, there were indirect effects of treatment condition on these outcome measures via negative beliefs. Thus, results showed less negative beliefs in the intervention group which were associated with less social anxiety, victimization and social disintegration and higher self-esteem at later waves. For social anxiety T2 and social disintegration T2, there was a direct effect of ‘Happy at School’ that was fully mediated by negative beliefs.

In the past there has been a debate about whether mediation was possible in cases in which there was no relation between the dependent variable and the independent variable (as was the case for all outcome measures except social anxiety and social disintegration at T2). Baron and Kenny (1986) suggested that mediation without a significant relation between all three variables (independent variable, dependent variable and mediator) was not possible.

However, recently it has been argued that a significant relation between the dependent and the independent variable is not a strict assumption for mediation (e.g., Hayes, 2009; MacKinnon, Fairchild, & Fritz, 2007). Several cases are described in which there was no relation between the independent variable and the dependent variable, but there was an indirect effect characterized by a relation between the independent variable and the mediator and between the mediator and the dependent variable. It has been suggested that this could be explained by other mechanisms not included in the model, working in the opposite direction. Thus, this would mean that there is a mechanism active in children in the invention group that had a negative effect on the dependent variable. It could be that children in the intervention group became more aware of their problems, leading to a (temporary) increase in experienced problems. It would be interesting to examine whether this higher awareness has less effect on the outcome measures over time, leaving a direct effect of 'Happy at School' and a (partial) indirect effect of negative beliefs, on the outcome measures.

Gender Differences in Study 3 and 4

Large gender differences were found in the effectiveness of 'Happy at School'. The training program was effective for boys with higher initial problem levels, with high effect sizes on decreasing victimization, social anxiety and social disintegration, and was somewhat effective on decreasing parent-reported internalizing problems and increasing self-esteem. Whereas for girls, the program was only effective in reducing parent-reported internalizing problems and improving self-esteem. Explanations for these gender differences were not examined, but maybe motivation is an important factor. It is known that boys suffer more from internalizing problems such as social anxiety (e.g., Flanagan, Erath, & Bierman, 2008). Shyness in childhood causes more negative feedback from peers and parents in boys compared to girls (Bacon & Ashmore, 1985). In addition, social anxiety contrasts much with male gender roles, whereas it is more accepted in girls (Sadker & Sadker, 1994; Weinstock, 1999). Moreover, study 1 showed a higher correlation between social anxiety and victimization in boys. Therefore, it is possible that when it concerns internalizing problems, boys are more likely to be highly motivated to change their behavior, because they suffer more from internalizing problems than girls. This would also explain why 'Happy at School' is more effective when initial problem levels are higher, because probably motivation is then also higher.

During the moderated mediation we examined whether working mechanisms were different for girls and boys with different initial problem levels. Multi-group analyses with four groups ((1) boys with above the mean initial problem levels; (2) boys with below the mean initial problem levels; (3) girls with above the mean initial problem levels; and (4) girls with below the mean initial problem levels) were performed to analyze this proposition. Results of the moderated mediation analyses were inconsistent. Based on the results of the study, we are not able to draw strict conclusions about the working mechanisms of 'Happy at School' for different groups. It could be that the relatively small sample per subgroup explains this. The power of the study might have been too small to detect all differences. However, overall, results seemed to suggest that indirect effects were stronger when initial problem levels were higher in both boys and girls and in positive and negative beliefs.

Results also seemed to suggest that decreasing negative beliefs was important for boys with higher initial problem levels, but that increasing positive beliefs was important for girls with higher initial problem. This was found for some of the indirect paths in decreasing social anxiety and victimization and increasing self-esteem. These differences between boys and girls could have large implications for practice. If future research, with a larger sample size, replicated these findings that while improving positive beliefs is important for girls, decreasing negative beliefs is more important for boys, these findings should be implemented in the training program.

Strengths and Limitations of Study 3 and 4

This second part of this dissertation shows the importance of performing moderation and mediation analyses in intervention research. 'Happy at School' is only somewhat effective when studying the entire group, and ignoring important differences within the intervention group. By taking moderation effects of gender and the initial problem level into account, it is clear that 'Happy at School' is more effective for some subgroups than for other subgroups. When mediation was studied, it also became clear how 'Happy at School' works, and there were even indications that the program might work differently for different groups. In sum, these studies show that it is very important to look further than the pure effectiveness of an intervention.

In study 3, when examining the effectiveness of the program, we used multiple informants to get a complete picture of the effectiveness of the program. Although this is a strength of the study, it should be mentioned that children and parents in the intervention group were, of course, aware of being in a treatment program, which could have led to a reporter bias. It could be that children and parents wanted the intervention, in which they invested, to work, and were therefore more likely to report positive change (e.g., Schulz & Grimes, 2002). Specifically, parents and participants reported that 'Happy at School' was effective in reducing internalizing problems and peer problems, while teachers (at wave 2 and 3) and peers, who were not aware of the target children being in a treatment program, did not report the program to be effective. Although it is important to be aware of a possible reporter bias, we consider the reported effectiveness by participants themselves as being most important. In the end, the goal of 'Happy at School' is to reduce (experienced) child problems.

Study 3 shows that 'Happy at School' is an effective program, especially for boys. However, generalizing these results to clinical practice should be done with some caution. There could be differences between this sample and any clinical sample (Weisz & Weiss, 1993) because we recruited children for the study, while normally they are referred to the training program by a teacher or therapist. We have no information on whether the problems in the study sample would be more or less severe than a clinical sample, and we have therefore no information on whether we would expect higher or lower effect sizes in the clinical sample. This is a commonly known problem with randomized controlled trials. Children are selected for the study, which is a different procedure compared to daily practice. However, we do believe that performing a randomized controlled trial is the best way to examine the effectiveness of the program.

This is the only way to make a clear comparison between a group that receives the program compared to a group that does not receive the program. However, we recommend that the effectiveness of 'Happy at School' in clinical therapy should be monitored.

In line with the above remarks, we would also like to comment on the process of randomization performed in study 3 and 4. Although the randomization process was performed with great care, randomization at the school level resulted in differences in the outcome variables between both conditions. Children in the intervention group had higher initial problem levels compared to children in the control group. Although we did not examine the reason for the differences, we can speculate about this, and believe that participating in the study asked more effort from children in the intervention group. These children had to sacrifice two full days of their summer break for the training program. We can imagine that a child is willing to do this only when their initial problem level is high. In contrast, children in the control group 'only' had to complete questionnaires for which they received a financial compensation. During the analyses, initial problem levels are used as a covariate to control for initial differences between groups.

One other problem with the randomization was that we were not able to use a waiting list control group. 'Happy at School' can only be followed by a child at the very specific moment of making the transition to secondary school. We were therefore not able to offer 'Happy at School' to the control group in a later stage. Children and their parents in the control group were therefore not informed about 'Happy at School'. One could question this decision based on ethical grounds of informed consent, as they were not aware of being in a control condition. However, in our opinion, it would not have been (ethically) correct to inform participants in the control group about an intervention that they were not longer able to follow.

Peer-reports were gathered using a nomination procedure. Children were asked to nominate exactly three classmates that were being victimized. There was no opportunity to report more or less classmates that were the victim of bullying. However, of course, it could have been that there were classes in which fewer (or more) than three children had been victimized. In that case, it might have been that children were nominated as victims, although they were not. It might have been better to use a procedure with ratings instead of nominations. However, to perform a procedure with ratings, names of classmates would have had to be known by the researcher before the measurement took place. In this study, names were not available. The interpretation of the effectiveness of the program as reported by peers should be done with caution, keeping this limitation in mind.

Future Research and Implications of Study 3 and 4

In the second part of this dissertation we compared an intervention group with a control group receiving no intervention. We studied whether receiving 'Happy at School' would be more effective compared to doing nothing. However, for clinical practice it would be relevant to know whether 'Happy at School' is more effective than other widely used interventions. Future research should examine this.

One other important finding of this study, unrelated to the training program, is that children in both groups reported less social anxiety, victimization and social disintegration in both conditions over time. In addition, parents in both conditions reported less peer problems and less internalizing problems.

Over the long term, problems increased somewhat again, but the problems remained less than at the end of primary school (baseline). It could therefore be suggested that the transition to secondary school is a positive life event in children with peer problems or internalizing problems.

Results show that 'Happy at School' is effective, both in the short and long term, for some of the outcomes (internalizing problems and for self-reported victimization). However, long term effects for other outcome measures are less strong. It could be that offering a more intensive booster session would result in 'Happy at School' being even more effective in the long term. Additional to a more intensive booster session six weeks after the intervention, it could also be helpful to offer a booster session later in the school year, for example in February. Reminding children about what they learned in the two day training program could result in more long term positive effects. Future research should examine this.

The current study focused on child factors as moderators of effectiveness and mediation. However, it is known that the therapeutic relationship is also important in determining the effectiveness of the program (e.g., Lambert & Barley, 2001). Future research could examine the influence of therapeutic relationships on the effectiveness of 'Happy at School'. In addition, in study 4 we examined changing positive and negative beliefs as working mechanisms of the training program. During the training program much attention was devoted to the modification of negative beliefs. However in addition to this, attention is also paid to proper body language. Children learn about the influence of body language on social interaction, and are taught to adapt their body language. In the current study no observational data was collected. Improvement of body language was therefore not measured. Future research could examine improvement of body language as one other working mechanism of 'Happy at School.' Moreover, in study 2 it was suggested to teach children behavioral tools over extraversion and agreeableness, such as making contact, taking initiative, listening and working together. During 'Happy at School' children are trained in these skills. Future research should examine whether training these skills is a working mechanism of the program.

During the study we did not monitor treatment integrity. Although we trained the trainers in an intensive way, and explained the importance of treatment integrity, we did not observe it. In future research more attention should be paid to treatment integrity as it possibly influences the effectiveness of the training program.

Nowadays social media plays an important role in the lives of young adolescents. 'Happy at School' lacks any attention being given to social media. Important questions that deserve attention include: 'How should you deal with cyber bullying, or with awkward pictures in which a child is tagged on Facebook?' In addition, social media could be used as a helpful tool. One of the last exercises of the second day of 'Happy at School' is writing a letter to yourself in which helpful beliefs are written down. The purpose of this, is that the child checks this letter now and then, especially just before the first day of secondary school. However, almost none of the children actually do that. Social media could be used by sending the child a text message on the first school day with helping beliefs. Also, a Facebook page for children that followed 'Happy at School' might be useful. At this page children can exchange experiences, and ask for help from their peers.

In addition, the intensity of the program sometimes can lead to the starting of friendships, but it is hard for these children to keep in touch with new possible friends. Social media, for example Facebook, could be helpful for the children in maintaining contact with other children.

During the last few years of the training program, 'Happy at School' trainers have observed more and more children that have experienced physical victimization at school. 'Happy at School' could focus more on dealing with physical victimization. Questions that seem important for children are how to deal with physical victimization, how to prevent physical victimization, and when and why does physical victimization start?

General Conclusion

In this dissertation the relation between social anxiety and victimization, and the effectiveness of the training program 'Happy at School' was examined. We found that there is a prospective relation between social anxiety and self-reported victimization for boys and girls, and a prospective relation between social anxiety and peer-reported victimization for boys. In addition, it was found that socially anxious children scoring low on extraversion are more at risk for victimization compared to children scoring high on this trait, and that socially anxious boys scoring low on agreeableness are more at risk for victimization compared to boys scoring high on this trait.

Overall this dissertation shows that socially anxious children are at risk for victimization. Victimization mostly occurs in social settings such as schools or sport clubs and can have serious consequences for children in different aspects of life (e.g., Camodeca, Goossens, Terwogt, & Schuengel, 2002; Fekkes, Pijpers, & Verloove-Vanhoric, 2005; Hay & Merldrum, 2010; Hodges, Malone & Perry, 1997). It is therefore important that teachers and other influential adults keep a close eye on socially anxious children so that they can prevent victimization, or that they can intervene rapidly when victimization starts.

Until now, no evidence-based training programs with high effect sizes were available in treating internalizing problems and peer problems in early adolescents. 'Happy at School' is an effective training program for all children in increasing self-esteem and in reducing parent-reported internalizing problems. In addition, the program is effective in reducing social anxiety, self-reported victimization and social disintegration in boys, especially with higher initial problem scores, but not in girls. Effect sizes were high among these boys. 'Happy at School' is not effective in reducing parent-reported peer problems and peer-reported victimization. Teachers reported more internalizing problems in the intervention group compared to the control group for both boys and girls, which could be explained by lower thresholds for children to report problems to teachers as a result of 'Happy at School'. Decreasing negative beliefs is an important working mechanism behind the effectiveness of 'Happy at School'.

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Samenvatting (Summary in Dutch)

Kinderen met Internaliserende Problemen en Peer Problemen. Risicofactoren, Behandeleffectiviteit, Moderatie en Mediatie

Internaliserende problemen (naar binnen gerichte problemen zoals angst, depressie en weinig zelfvertrouwen) en problemen met leeftijdsgenoten (peer problemen) beïnvloeden het leven van kinderen in grote mate. Zowel directe gevolgen van deze problemen, als gevolgen in het latere leven van kinderen zijn beschreven in eerdere studies (e.g., Hawker & Boulton, 2000; Kaltiala-Heino, Rimpelä, Marttunen, Rimpelä, & Rantanen, 1999; Pine, Cohen, Gurley, Brooks, & Ma, 1998; Wittchen, Essau, Von Zerssen, Krieg, & Zaudig, 1992). Mogelijke consequenties van deze problemen zijn het hebben van weinig vrienden, meer risico lopen om gepest te worden, of het krijgen van problemen op school (Essau, Conradt, & Petermann, 2002; Kendall, Safford, Flannery-Schroeder, & Webb, 2004; Khalid-Khan, Santibanez, McMicken, & Rynn, 2007; Rubin & Burgess, 2001; Wittchen, Stein, & Kessler, 1999). Ook het ontwikkelen van internaliserende stoornissen, zoals een angststoornis of een klinische depressie kan het gevolg zijn van internaliserende problemen of problemen met leeftijdsgenoten (Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005).

In deze dissertatie staan internaliserende problemen en problemen met leeftijdsgenoten bij jongeren rondom de transitie naar de middelbare school centraal. In hoofdstuk 2 en 3 worden twee onderzoeken over de relatie tussen sociale angst en gepest worden gerapporteerd. Risicofactoren en de longitudinale relatie tussen beiden worden behandeld. Hoofdstuk 4 en 5 beschrijft het onderzoek naar de effectiviteit van 'Plezier op School'. 'Plezier op School' is een sociale vaardigheidstraining voor aanstaande brugklassers met internaliserende problemen en peer problemen. In dit deel van de dissertatie staan drie vragen centraal: Werkt het programma? Voor wie werkt het programma? Hoe werkt het programma?

De relatie tussen sociale angst en gepest worden: Studie 1 en 2

In het verleden is onderzoek gedaan naar de relatie tussen sociale angst en gepest worden, waarbij werd aangetoond dat deze relatie er is (e.g., Flanagan et al., 2008; Hawker & Boulton, 2000). Karakteristiek gedrag dat hoort bij sociale angst, zoals angst voor afwijzing, niet assertief gedrag, zichtbare angst en slechtere sociale vaardigheden (e.g., Creed & Funder, 1998; Davila & Beck, 2002; Miers, Blöte, & Westenberg, 2010) maken dat sociaal angstige kinderen vaker het slachtoffer zijn van pesterijen (Egan & Perry, 1998; Grills & Ollendick, 2002).

Ondanks dat verschillende studies een relatie aantonen tussen sociale angst en gepest worden, is het niet zo dat alle sociaal angstige kinderen gepest worden. Daarom werd onderzocht of sociaal angstige kinderen met bepaalde niveaus van persoonlijkheidstrekken meer risico lopen om gepest te worden dan andere kinderen. De resultaten van de studie zijn gerapporteerd in hoofdstuk 2. Uit de studie blijkt dat sociaal angstige kinderen die lager scores op extraversie, meer risico lopen om gepest te worden in vergelijking met sociaal angstige kinderen die hoger scores op extraversie. Mensen die extravert zijn worden gezien als sociaal, actief en assertief. Daarnaast lopen jongens die laag scores op de persoonlijkheidstrekk vriendelijkheid ook meer risico om gepest te worden, vergeleken met jongens die hoger scores op vriendelijkheid. Voor meisjes werd dit verband niet gevonden.

Mensen die hoog scoren op de persoonlijkheidstrek vriendelijkheid zijn pro-sociaal, altruïstisch, gevoelig, te vertrouwen en bescheiden.

De studies die de relatie tussen sociale angst en gepest worden in het verleden onderzochten waren vaak correlatieel en hebben de relatie maar op één moment bekeken. Hierdoor kunnen er op basis van die studies geen uitspraken gedaan worden over een voorspellende relatie. In een aantal studies werd wel longitudinaal (met meerdere meetmomenten) onderzoek gedaan, maar deze lieten inconsistente resultaten zien (Hodges & Perry, 1999; Siegel, La Greca, & Harrison, 2009; Storch, Masia-Warner, Crisp, & Klein, 2005; Vernberg, Abwender, Ewell, & Beery, 1992). Er werd vaak gebruik gemaakt van een selectieve en niet representatieve steekproef. Daarnaast maakten deze studies geen gebruik van een combinatie van zelf-rapportage en rapportage door leeftijdsgenoten. In hoofdstuk 3 wordt daarom een studie gerapporteerd waarin zowel gebruik wordt gemaakt van een grote representatieve steekproef als van de combinatie van zelf-rapportage en rapportage door leeftijdsgenoten, en een longitudinaal design. De resultaten van deze studie tonen aan dat een hoger niveau van sociale angst leidt tot meer gepest worden in de toekomst. Dit blijkt voor zowel jongens als meisjes als zij zelf rapporteren over gepest worden. Wanneer klasgenoten rapporteerden over gepest worden, blijkt deze relatie alleen te gelden voor jongens. Er werd niet gevonden dat gepest worden leidt tot meer sociale angst in de toekomst.

Effectiviteit, moderatie en mediatie van 'Plezier op School': Studie 3 en 4

'Plezier op school' (Faber, 2005) is een zomercursus voor aanstaande brugklassers die op de basisschool problemen hadden in de omgang met leeftijdsgenoten. De cursus is met name bedoeld voor kinderen die op de basisschool gepest werden, afgewezen werden, en in het contact met leeftijdsgenoten angstig, onhandig of onvoldoende weerbaar waren. 'Plezier op School' is een preventieve interventie passend binnen de preventieve categorieën 'selectief' (gericht op risicogroepen) en 'geïndiceerd' (gericht op personen die al wel symptomen vertonen, maar nog niet voldoen aan diagnostische criteria) (Meijer, Smit, Schoemaker, & Cuijpers, 2006). De cursus beoogt de sociale competentie van jongeren te vergroten, zodat zij een goede start kunnen maken op het voortgezet onderwijs. Er wordt beoogd het risico op herhaling van deze problemen op de nieuwe school te verkleinen en de negatieve spiraal waar deze kinderen in terecht zijn gekomen te doorbreken. Daarnaast is het lange termijn doel van 'Plezier op School' psychologische stoornissen te voorkomen. 'Plezier op School' kent een cognitief-gedragstherapeutische basis en is aangevuld met ontspanningsoefeningen, psycho-educatie, elementen uit RET (Rationeel Emotieve Therapie, Ellis, 1962) en uit sociale vaardigheidstrainingen. De cursus tracht zowel de cognities, gevoelens, als het daadwerkelijke gedrag van kinderen te beïnvloeden, met als gevolg sociaal competentier gedrag en positievere relaties met leeftijdsgenoten.

De cursus wordt bewust aangeboden rondom een belangrijke gebeurtenis in het leven van kinderen; de overgang van basisschool naar voortgezet onderwijs. Deze transitie biedt kinderen de unieke gelegenheid om in een nieuwe sociale setting een nieuwe gedragsreputatie op te bouwen. Reguliere interventies voor deze doelgroep maken geen gebruik van deze transitie, waardoor deelnemers aan deze interventies veelal 'gevangen' blijven in hun bestaande sociale status (in hun 'oude' schoolklas) en het daarom moeilijker is een verandering teweeg te brengen.

In hoofdstuk 4 wordt het onderzoek naar de effectiviteit van 'Plezier op School' op internaliserende problemen (o.a. sociale angst en weinig zelfvertrouwen) en peer problemen (o.a. gepest worden en sociale desintegratie) beschreven. Bij dit onderzoek werden 374 kinderen (42,8% jongens, gemiddeld 12 jaar oud) gevolgd in een Randomized Controlled Trial (RCT). Van deze kinderen kregen 184 kinderen 'Plezier op School' aangeboden in de laatste week van de zomervakantie, vlak voor de overgang naar de middelbare school. De andere 190 kinderen zaten in de controlegroep, waarin ze geen interventie aangeboden kregen. De voormeting (T0) vond plaats in groep 8 van de basisschool, voordat de kinderen de overgang maakten naar de middelbare school. De eerste effectmeting (T1) vond plaats nadat de kinderen één week op de middelbare school zaten, de tweede meting (T2) na dertien weken middelbare school en de derde meting (T3) vond plaats na veertig weken middelbare school. Zowel deelnemers zelf, als ouders, leerkrachten en klasgenoten rapporteerden over internaliserende problemen (o.a. sociale angst en zelfwaardering) en peer problemen (o.a. gepest worden en sociale desintegratie; weinig vrienden, zich alleen voelen op school). Op T1 werd niet gerapporteerd over gepest worden en sociale desintegratie, omdat deelnemers toen nog maar één week op het voortgezet onderwijs zaten en hun klasgenoten nog niet voldoende kenden.

Naast de effectiviteit van het programma werd ook onderzocht of het programma beter werkt voor bepaalde subgroepen van kinderen. Er werd onderzocht of het programma beter werkt voor jongens of voor meisjes. Ook werd onderzocht of de ernst van de problematiek op de voormeting van invloed is op de voormeting. Hierbij werden drie groepen onderscheiden: groep 1: beneden gemiddelde problematiek (van de kinderen in de onderzoeksgroep), groep 2: boven gemiddelde problematiek, groep 3: problematiek van 1 standaarddeviatie boven het gemiddelde.

Resultaten van het onderzoek tonen aan dat de effectiviteit van het programma verschilt tussen uitkomstmaten, tussen jongens en meisjes en tussen verschillende niveaus van problematiek op de voormeting van de deelnemers. Ook de effectgroottes verschillen. Effectgroottes werden weergegeven met Cohen's d , waarbij d tussen de 0,20 en de 0,50 een klein effect is, d tussen de 0,60 en de 0,80 een gemiddeld effect is en d hoger dan 0,80 een groot effect is.

Voor alle kinderen is 'Plezier op School' effectief in het verminderen van internaliserende problemen volgens ouders (T1: $d = 0,20$; T2: $d = 0,30$) en in het verhogen van zelfwaardering volgens de kinderen zelf ($d = 0,20$ op T2). Op T3 rapporteerden ouders alleen voor meisjes met boven gemiddelde niveaus van internaliserende problemen op de voormeting nog minder internaliserende problemen bij kinderen in de interventiegroep vergeleken met kinderen in de controlegroep ($d = 0,50$). Voor jongens is 'Plezier op School' erg effectief in het verminderen van sociale angst (op T2), zelf gerapporteerd gepest worden (op alle meetmomenten) en sociale desintegratie (op T2). Hoe ernstiger de problematiek op de voormeting bij deze jongens, hoe groter de effecten (Sociale angst: groep 1: geen significant effect, groep 2: $d = 0,60$, groep 3: $d = 1,20$. Gepest worden T2: groep 1: geen significant effect, groep 2: $d = 0,50$, groep 3: $d = 1,50$. Gepest worden T3: groep 1: geen significant effect, groep 2: $d = 0,70$, groep 3: $d = 1,40$. Sociale desintegratie: groep 1 en 2: geen significant effect, groep 3: $d = 1,30$).

Leerkrachten rapporteerden juist meer internaliserende problemen in de interventiegroep ten opzichte van de controlegroep (T2: $d = 0,20$; T3: $d = 0,30$; dit wordt waarschijnlijk veroorzaakt door een lagere drempel om te praten over problemen met leerkrachten als gevolg van het deelnemen aan het programma). 'Plezier op School' is niet effectief in het verminderen van peer problemen volgens ouders en in gepest worden volgens klasgenoten.

Samenvattend laten de resultaten van het onderzoek zien dat 'Plezier op School' vooral volgens ouders en kinderen zelf effectief is in het verminderen van internaliserende problemen en problemen met leeftijdsgenoten, en dat het programma het meest effectief is voor jongens met ernstige problematiek.

In hoofdstuk 5 wordt het onderzoek naar werkende mechanismen van 'Plezier op School' beschreven. Onderzocht is of de effectiviteit van het programma tot stand komt door het verhogen van het aantal positieve gedachten en het verlagen van het aantal negatieve gedachten. Uit de resultaten blijkt dat (alleen) het verminderen van negatieve gedachten belangrijk is voor het verminderen van sociale angst, gepest worden en sociale desintegratie en het verhogen van zelfwaardering.

Conclusie

In deze dissertatie is de relatie tussen sociale angst en gepest worden onderzocht. Daarnaast is de effectiviteit, moderatie van de effectiviteit en mediatie van 'Plezier op School' onderzocht.

Sociaal angstige kinderen lopen een groter risico om gepest te worden, met name als ze weinig extravert en (bij jongens) vriendelijk zijn. Tot nu toe was er nog geen bewezen effectief programma beschikbaar voor het verminderen van internaliserende problemen en peer problemen voor kinderen in deze leeftijd. De huidige dissertatie toont aan dat 'Plezier op School' zowel voor jongens als meisjes effectief is in het verminderen van internaliserende problemen (volgens ouders) en het verhogen van de zelfwaardering. Daarnaast is het programma voor jongens met een hoge mate van initiële problemen effectief in het verminderen van sociale angst, gepest worden en sociale desintegratie. In deze groep waren de effecten het grootst. Het verminderen van negatieve gedachten bleek een belangrijk werkzaam mechanisme van het programma te zijn.

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Curriculum Vitae

Saskia Mulder was born on October 13th 1984 in Deventer, The Netherlands. In 2003 she completed pre-university education (VWO) at the Ety Hillesum Lyceum in Deventer. Thereafter she studied clinical psychology at Utrecht University. During her studies she worked as a student assistant, participating in several child and adolescent research projects. She obtained her Bachelor's degree in 2006 and her Master's degree in 2007. In 2008, she worked as a research assistant at the Department of Neurology at the Academic Medical Center Utrecht (AMC UMC). In this year she also worked as a research assistant and at the Department of Pedagogics at Utrecht University. At the end of 2008 she started her PhD project at the Department of Developmental Psychology at Utrecht University on the relation between social anxiety and victimization and the effectiveness of the training program 'Happy at School', which aims to reduce internalizing problems and peer problems in young adolescents. While being a PhD candidate, she gained experience in teaching: she supervised both master theses and bachelor theses in developmental psychology and supervised an internship of youth studies. After her PhD project, Saskia will be working as a lecturer at the Department of Developmental Psychology at the Radboud University Nijmegen and as a project leader in the implementation process of 'Happy at School' at Utrecht University.

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