

Bullying among elementary school children

Minne Fekkes



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Propositions

accompanying the thesis

Bullying among elementary school children

Minne Fekkes, June 28th 2005

1. Bullied children are more at risk for developing health symptoms such as depression, abdominal pain, bedwetting and sleep problems. (*This thesis*)
2. Many teachers and parents do not know when one of their children is being bullied. (*This thesis*)
3. Infrequent bullying is for most elementary school children part of a relatively normal development. However, children who bully frequently are deviant and at risk to develop other anti-social behavior. (*This thesis*)
4. Children with depressive symptoms are at risk for getting bullied. (*This thesis*)
5. Schools can effectively diminish bullying. (*This thesis*)
6. Bullied children are at a high risk for continued victimization. (*This thesis*)
7. The health symptoms associated with bullying victims resemble those associated with victims of child abuse. (*Fekkes, Journal of Pediatrics, 2004; 144: 17-22*)
8. Children's bullying behavior is related to parental use of harsh discipline. (*Smith, Clin Child Psychol Psychiatry, 1998; 3:405-417*)
9. The higher number of suicide attempts, bullying victimization, and school avoidance among gay and lesbian youth stress the importance to incorporate this issue in anti-bullying programs for high schools. (*British Medical Journal, 2000; 320: 1617-18*)
10. True and effective violence prevention requires a comprehensive response that brings all segments of the community into play. (*Spivak, Pediatrics, 2003; 112: 1421-2*)
11. The birthrate among ultra-orthodox Jews in Israel is so high that a majority dominance of this group may soon result in a third massive exodus of (liberal) Jews from Israel.
12. It's ironic that the religious right in the US opposes both gay sex and gay parenting because nothing puts a stop to gay sex faster than gay parenting. (*Dan Savage, Out Magazine, 2000*)
13. The best way to make your dreams come true is to wake up.

Bullying among elementary school children

Proefschrift

Ter verkrijging van
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Prof. Dr. P.D.A. Treffers

De ware vooruitgang van de mensheid hangt niet zozeer af van creatief vernuft als wel van geweten.

Albert Einstein

For Jonathan

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Chapter 1

Introduction

Introduction

Bullying is a form of aggressive behavior characterized by repeated acts against victims who cannot easily defend themselves.¹ Bullying can include direct physical or direct verbal attacks, but also indirect forms of aggression such as excluding others or rumoring.

Bullying behavior in schoolchildren has been studied for over 25 years. Especially after publication of some large studies in Norway² and England³ the field of bullying research expanded. Since then, studies in many countries indicated that a substantial number of children are bullied regularly.

Numbers between countries vary greatly, but because of differences in measurement instruments and definitions it is not clear if these differences in prevalence are real or an artifact.⁴ Bullying is defined by frequency as 'now and then' or more often²; 'sometimes' or more often^{5,6} to 'once a week' or more often.^{4,7} Recent numbers of victimization vary from 30% in Italy (sometimes or more often), 24% in England (once a week or more often), 17% in the United States (once a week or more often), 19% in the Netherlands (a few times per month or more often), 16% in Finland (once a week or more often), to 8% in Germany (once a week or more often).^{4,5,8-10}

A nationwide study performed in the Netherlands in 1991 indicated that 23% of the children in elementary school were bullied on a 'regular' basis or more often, and 20% actively bullied other children.¹¹ For the Dutch school population these percentages mean that over 330,000 elementary school children are bullied regularly, and close to 290,000 children participate in regular active bullying behavior.

Bullying does not only occur between bully and bullied, but is considered a group phenomenon in which other children participate.¹² Some investigators suggest different roles for children participating in bullying incidents in which children can be identified as either leading bullies (initiating the bullying), assistants of the bully (participating with the bullying once it has started), reinforcers of the bully (reinforcing by laughing, inciting the bully, or simply by giving the bully an audience), defenders of the victim (who come out to help the victim) and outsiders (who are not involved).¹³

Bullying behavior can also be seen as part of a group process in which some children try to keep or gain a higher status among their peers by picking on weaker members of the group. Although bullies may be disliked by their peers they may achieve or maintain a certain status of leadership within a select group of peers.¹⁴

Although many children might occasionally get involved in bullying, or being bullied, there are certain factors related to both victimization and active bullying. Bullying children have characteristics in common with other children who have an aggressive reaction pattern. This includes characteristics such as: a home background

characterized by lack of warmth and involvement; an upbringing with no clear limits to aggressive behavior; no clear guidelines for behavior and monitoring of children's activities; parental use of harsh discipline and physical punishment; and hot temperament.^{1,15-18}

Being a victim of bullying is found to be correlated with certain individual characteristics such as having a low self-esteem, depression and anxiety. In general, victims can be described as having an anxious submissive reaction pattern. In addition, some studies indicate that there are some family factors, especially over-protective parenting, that may be a risk factor for victimization.^{1,19,20}

Although some conflict or harassment is typical of youth peer relations, regular bullying presents a potentially more serious threat to healthy youth development.⁹ Children involved in bullying behavior are found to be more often referred for psychiatric consultation.⁶ Also, an association has been found between being bullied and suicidal thoughts.²¹⁻²³ Several studies have indicated a relationship between psychosomatic symptoms and bullying.^{6,8,22,24-31} This is especially the case with regard to victimization, although it is debated whether these health symptoms precede the bullying victimization or whether bullying victimization precedes the onset of these health problems. The stress caused by bullying could lead to the higher number of health symptoms,³² but children with health problems such as depression or anxiety may also be more vulnerable to being bullied by other children.^{33,34} A few studies have investigated this relationship with longitudinal data. In a longitudinal study, Bond *et al.* (2001)³⁵ reported that bullying - especially for adolescent girls - precedes health symptoms like depression and anxiety. This suggests that the stress caused by bullying has a negative influence on children's health. Other studies found support for an opposed relationship in which internalized behavioral problems precede being bullied and increase the chances of being bullied over time.^{36,37}

The substantial number of children involved in bullying behavior and the relation between bullying behavior and health symptoms emphasize the importance of prevention of bullying behavior. Schools are one of the most important places to prevent bullying behavior. During the last decades several programs have been developed to combat bullying in schools. Olweus was one of the first to develop a whole-school approach program in Norway. Core components of the program are implemented at the school, class and individual level. The program includes training of the school staff, the distribution of a questionnaire to measure levels of bullying, the increasing of supervision of the playground, the adoption of rules against bullying, and serious talks with children involved in bullying and their parents.

In England an anti-bullying package "Bullying. Don't suffer in Silence" is available. This program is which is based on the 'Sheffield project' and helps schools

to establish a whole-school anti-bullying policy. A wide variety of strategies at school, class and individual level are offered to combat bullying. Some strategies are similar to the Olweus program, such as the use of survey to measure bullying levels in the school. Some strategies are different, for example the use of the peer-support groups to stop bullying incidents. In Canada, Germany and Belgium, similar programs are developed based on the Olweus and Sheffield programs.

Although strategies aimed at individual students can be incorporated in a whole-school approach, they can also be used separately. Victims of bullying can follow an assertiveness training to learn skills to withstand bullying in an appropriate way. Another strategy is the Support Group Approach, in which a support group for the victim is created. The support group is composed of those involved in the bullying and bystanders. This group is assigned the responsibility for solving the bullying problem.³⁸

In the Netherlands, several anti-bullying measures and materials and curriculum work have been developed to help schools to prevent and diminish bullying. In 1995 school board-, teacher- and parental organizations joined in a collaborative effort to develop a national standard anti-bullying policy for schools. This resulted in a protocol for schools to take anti-bullying measures based on the Olweus program.³⁹

Aside from the schools, bullying prevention and detection of bullying behavior can also take place in the health care setting. The association between bullying and health symptoms shows that the bullying of children should not only concern teachers and educational psychologist, but also health care workers.⁴⁰ Because bullying is so common, all health care professionals dealing with children are likely to see some children who are regularly victimized at school by their peers.⁴¹

It would help general practitioners, pediatricians, (school)physicians and (school)nurses to know which specific health symptoms are most strongly associated with bullying behavior. This could help health practitioners when evaluating children from elementary schools not only to detect bully victims but also to detect a possible cause of the health problems indicated by the child. In addition it would be valuable to know whether bullying victimization precedes these health symptoms or if these health symptoms precede bullying victimization, both for prevention of these health symptoms and prevention of bullying victimization.

The present thesis aims to provide information on the improvement of detection of bullying and preventive strategies. This information may be helpful for those who deal with children involved in bullying behavior, such as school professionals and health care professionals.

Research questions for this thesis are:

- To what extent are children involved in bullying behavior and what is the involvement of teachers and parents in bullying behavior?
- Which health symptoms are associated with bullying victimization and active bullying behavior?
- Do those health symptoms associated with bullying victimization precede this behavior or do they follow an episode of bullying victimization?
- To what extent are bullied children at risk for continued victimization and what is the influence of friendships on this risk?
- What is the relationship between active bullying behavior and delinquent behavior?
- What is the effect of an anti-bullying school policy on bullying behavior, depression, health symptoms, level of school satisfaction and delinquent behavior?

Data for this thesis were provided by children from the upper three grades (9-12 yrs) from 47 elementary schools. As part of an intervention study on the effects of anti-bullying policy, schools were randomly assigned to either an intervention group, control group A, or control group B. There were three waves of data collection: the first (the baseline measurement) in the fall of 1999, the second in the spring of 2000 and the third in the spring of 2001.

The intervention group and control group A participated in all three waves of data-collection. Control group B only participated in the second and third wave of data-collection. Participants for each group were respectively 1214 children for the intervention group, 1552 for control group A, and 1050 for control group B.

In chapter 2 and chapter 3, data from the first wave (the intervention group plus control group A, a total of 2766 children) were used. In chapter 4, chapter 5, and chapter 6, longitudinal data from control group A (1552 children) were used. In chapter 7 the effects of the anti bullying intervention are described, using data from the intervention group and both control groups A and B (3816 children).

Outline of this thesis

Chapter 2 presents the data on the number of children involved in bullying behavior, the types of bullying behavior, and the locations of the bullying incidents. In addition, results are given concerning the communication between children and their teacher and children and their parents about the bullying incidents and to what extent teachers and parents took subsequent action.

Chapter 3 presents the data on the association between bullying behavior and psychosomatic and depressive symptoms. Data are presented for children in three groups: those who are victimized, those who actively bully, and those children who are both victimized and do actively bully.

Chapter 4 looks into the longitudinal relationship between bullying and a wide variety of health symptoms. Studies have shown that bullying victimization is associated with a substantial number of health symptoms, but it is unclear which come first. Does bullying victimization precede the health symptoms, or do these health symptoms precede bullying victimization?

Chapter 5 focuses on the longitudinal development of bullying victimization and its relationship with friendships and level of school satisfaction. To what extent are bullied children at risk for continued victimization? What is the influence of friendships on the risk to be victimized? What is the influence of victimization and friendships on the levels of school satisfaction later in the year and during the next year?

Chapter 6 describes the longitudinal relationship between active bullying and delinquent behavior. In this chapter, data are explored to investigate if there is a relationship over time in which children who bully are at higher risk for developing delinquent behavior. This chapter also investigates if children who are involved in delinquent behavior are at higher risk of becoming an active bully at a later time.

Chapter 7 describes the effects of an anti-bullying intervention in elementary schools in the Netherlands. In addition to bullying behavior, other outcome measures include health symptoms, level of school satisfaction and delinquent behavior.

Chapter 8 presents a discussion of the results of the previous chapters in a broader perspective. A practical translation of the results is given for health care and school settings. In addition some directions for future research are given.

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Chapter 2

Bullying: who does what, when and where? Involvement of children, teachers and parents in bullying behavior.

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Abstract

Introduction: Bullying victimization is associated with several health issues. Prevention of bullying is therefore an important goal for health and education professionals.

Methods: In the present study, 2766 children from 32 Dutch elementary schools participated by completing a questionnaire on bullying behavior and the involvement of teachers, parents and classmates in bullying incidents.

Results: The results of this study show that bullying is still prevalent in Dutch schools. More than 16% of the children age 9-11 years reported being bullied on a regular basis, and 5.5% reported regular active bullying during the current school term. Almost half of the bullied children did not tell their teacher that they were being bullied.

When teachers knew about the bullying, they often tried to stop it, but in many cases the bullying stayed the same or even grew worse. With regard to active bullying, neither the majority of the teachers nor parents talked to the bullies about their behavior.

Conclusions: Our results stress the importance of regular communication between children, parents, teachers and health care professionals with regard to bullying incidents. In addition, teachers need to learn effective ways to deal with bullying incidents. Schools need to adopt a whole-school approach with their anti-bullying interventions.

Introduction

Bullying is a specific form of aggressive behavior and can be described as a situation when a student: “is exposed repeatedly and over time, to negative actions on the part of one or more students”.¹ These negative actions take place when an imbalance of power exists between the victim and the aggressor. The bullying behavior can be ‘physical’ (e.g. hitting, pushing, kicking), ‘verbal’ (e.g. calling names, provoking, making threats, spreading slander), or can include other behavior such as making faces or social exclusion.

Numbers between countries vary greatly which could be a results of either differences in prevalence, use of instrument or definition of bullying. Regular bullying is hereby usually defined as recurrent behavior with a frequency of either ‘several times a month’, ‘sometimes’ or on a ‘weekly’ basis. Numbers of victimization vary from 46% in Italy (sometimes or more),² 24% in England (once a week or more),³ 17% in the United States (once a week or more),⁴ 19% in the Netherlands (a few times per month or more),⁵ to 8% in Germany (once a week or more).³ Active bullying varies from 23% in Italy (sometimes or more),² 22% in the Netherlands (a few times per month or more),⁵ 8% in the United States (once a week or more),⁴ to 5% in England (once a week or more).³

Boys are generally more often active bullies than girls, but whereas boys bully in a more direct way (e.g. hitting, kicking), girls bully in a more indirect way (e.g. excluding others, starting rumors) sometimes referred to as relational bullying.⁶⁻⁸ For victimization there are no large gender differences: boys are bullied as often as girls.

Bullying does not only occur between children who bully and those who are bullied, but is considered a group phenomenon in which other children participate. Bystanders can assist the bully, or try to help the victim, or they can withdraw and try not to get involved.⁹ Bullying incidents usually involve several bystanders¹⁰ and in most cases these bystanders don’t try to stop the bullying which may be interpreted by the bully as a reinforcement to continue the bullying. However, it has also been shown that when bystanders intervene and try to stop the bullying, they are effective in a majority of the cases.¹¹ It is therefore important to utilize this ‘peer group power’ and teach children strategies to effectively intervene, so bullies will be isolated from their social support.^{10,12,13}

Being a victim or an active bully is associated with an increased risk of mental and physical health problems. Children who are bullied suffer more often from health symptoms such as sleep problems, headache, stomach ache, bedwetting, and depression¹⁴⁻¹⁶ and have more often suicidal thoughts.^{17,18} Active bullying is found to be associated with higher levels of depression, emotional and behavioral disorders.¹⁹⁻²¹

Especially with regard to victimization, it is debated whether these health symptoms precede the bullying victimization or whether bullying victimization precedes the onset of these health problems. The stress caused by bullying could lead to the higher number of health symptoms,²² but children with health problems such as depression or anxiety may also be more vulnerable to being bullied by other children.^{23,24} Few studies have investigated this relationship, but there is some support for both hypotheses. In a longitudinal study, Bond et al.²⁵ reported that bullying - especially for adolescent girls - precedes health symptoms like depression and anxiety. This suggests that the stress caused by bullying has a negative influence on children's health. Other studies found support for an opposed relationship in which internalized behavioral problems precede being bullied and increase the chances of being bullied over time.^{26,27}

In addition to higher levels of health symptoms, studies indicate that victims and bullies have characteristics that distinguish them from children who are not regularly involved in bullying behavior. Bullies are found to be more involved in aggressive, delinquent and violent behavior.^{5,28} Victims usually have lower self-esteem than non-victims, are less assertive, tend to be more anxious, are more withdrawn, are physically smaller and weaker and tend to have lower grades.^{1,24,28,29} However, like the association of bullying and health symptoms, some of these characteristics can either precede or result from being bullied.³⁰

Because bullying has a negative influence on children's mental and physical health, it is important that health care workers and teachers have a good understanding of bullying behavior and take measures to prevent or stop such behavior. Anti-bullying interventions are promoted via the Health Promoting Schools Framework³¹ currently of particular interest in Europe via the European Network for Health Promoting Schools.³² Components of this framework promote the involvement of the whole-school community, including - among others - pupils, teachers and parents in the efforts to combat bullying.

The data presented in this article aim to give more insight in the involvement of these groups in bullying behavior by investigating the following questions:

- 1) To what extent are children involved in general and specific bullying behavior?
- 2) According to the children, what is the involvement of others (i.e. teachers, parents, and classmates) with the bullying behavior?
- 3) How effective are the attempts of others (i.e. teachers, parents, and classmates) to stop the bullying?

Methods

Participants

The 2766 participants in this study were children from 32 Dutch elementary schools that participated in a longitudinal experimental study on the effectiveness of an anti-bullying policy at schools. The data presented here are baseline measurements made before any specific anti-bullying measures (as part of the study) had been implemented in the schools.

In October/November 1999, children from the upper three grades (9-11 years) completed a written questionnaire in the classroom under exam-like conditions. In each classroom a research assistant was available to answer questions. The design of the study was approved by the local Medical Ethical Committee. All parental advisory boards of the participating schools were informed about the study and gave written informed consent for participation.

Questionnaire

The questionnaire contained items on the frequency of bullying behavior, the specific types of bullying behavior, where the bullying took place, who intervened to stop the bullying, and if those interventions were successful. Several other health and demographic items were also included in the questionnaire.

The questions on general bullying behavior, where it took place, and questions on intervening, were based on the Dutch version of the Olweus Bully/Victim Questionnaire.³³⁻³⁵ This is a well documented questionnaire that is used in many studies on bullying.^{2,28,36,37} The questions on specific bullying are based on the Dutch version of a questionnaire used in a cross-national study on bullying,^{5,38} which was based on a list of specific bullying behaviors developed by Whitney and Smith.³⁷

Being bullied was assessed with the question "How often did other children bully you during this school term?" Children could answer with the following options: "I am not bullied", "one or two times", "a few times a month", "every week", "two or three times a week", or "almost every day".

Active bullying was assessed with the question "How often did you participate in bullying other children at school during this school term?". Options for answer ranged from "I did not bully any children", "one or two times", "a few times a month", "every week", "two or three times a week", or "almost every day".

Options for those two items on being bullied and active bullying were slightly modified from the original questionnaire, in which the original category 'sometimes' was changed into "a few times a month". Also the last category "almost every day"

was added. These adjustments were made to create a more consistent range of frequency options.

A student was identified as a victim if he or she reported being bullied “a few times a month” or more frequently. Likewise a student was identified as a bully if he or she reported active bullying “a few times a month” or more frequently.

Statistical analysis

All analyses were performed with SPSS/PC. Descriptive univariate statistics were used to analyze the prevalence of bullying behavior. Two sided T-tests and Chi-square analysis were used to analyze statistical differences between groups. The level for a statistical significant difference was $p < 0.05$.

Results

General characteristics of the sample

Of the 2853 students, questionnaires were completed by 2766 (response 97%). Main reason for non-response was absence of the child on the day of measurement. There was no follow up at another date for non-responders.

Mean age of the children was 10.1 (SD 1.1) years. The sample included 1370 boys (49.5%), 1384 girls (50.0 %) and 12 students (0.4%) for whom the gender was not stated. A total of 14.5% of the sample was of non-Dutch origin (i.e. both parents born outside the Netherlands).

Frequency of bullying

Table 1 shows the distribution of bully victimization and active bullying behavior amongst all children and amongst boys and girls separately. The results show that a substantial number (16.2%) of the children were bullied regularly (several times a month or more often), and more than 7% reported being bullied several times a week. There was no significant difference in being bullied between boys and girls ($\chi^2 = 0.38$, $p = 0.85$). Children from a lower school grade were bullied more often than children from a higher grade ($\chi^2 = 56.93$, $p < 0.001$).

Table 1 Reported frequency of bullying during current school term.

	Being bullied			Bullying others		
	Boys	Girls	Total	Boys	Girls	Total
	N = 1366	N = 1383	N = 2761	N = 1358	N = 1379	N = 2749
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Never	54.2 (740)	56.5 (781)	55.4 (1530)	54.9 (746)	70.1 (967)	62.5 (1719)
1 or 2 times	29.5 (403)	27.5 (380)	28.4 (785)	37.3 (506)	26.8 (369)	31.9 (878)
A few times per month/once per week	9.4 (128)	8.3 (116)	8.9 (244)	5.6 (76)	2.3 (32)	4.0 (111)
2 or 3 times per week/almost every day	7.0 (95)	7.7 (106)	7.3 (202)	2.2 (30)	0.8 (11)	1.5 (41)

The number of children who reported to actively bully others was less than those who reported being a victim of bullying (Table 1). In total 5.5% of the children bullied other children on a regular basis (i.e. several times a month or more often). Another 31.9% indicated that they had bullied another student at least once during the current term. There was a large gender difference; boys bullied much more frequently than girls ($\chi^2 = 29.21$, $p < 0.001$). There was no difference in active bullying behavior between the different school grades ($\chi^2 = 0.12$, $p = 0.98$).

Type of bullying behavior

Table 2 shows the types of bullying the children had experienced during the last four weeks. A substantial number of children experienced name-calling (30.9%), the spreading of rumors (24.8%), being ignored or not allowed to participate (17.2%) or being kicked, hit or pushed (14.7%). Girls were more likely to experience the spreading of rumors, being ignored, or not being allowed to participate, whereas boys were more likely to experience physical forms of bullying.

Those children who had indicated on the general question on bullying that they were bullied almost on a daily basis did indicate higher numbers of experienced specific bullying behavior during the last four weeks, i.e.: name-calling (90.3%), the spreading of rumors (89.1%), being ignored or not allowed to participate (60.8%), made fun of (74.3%), being kicked, hit or pushed (63.1%), or having things taken away or hid (37.3%).

Table 2 Reported frequency of specific bullying behavior during the last four weeks (n = 2766).

	All children			Boys			Girls		
	Never %	Once or twice %	Weekly to every day %	Never %	Once or twice %	Weekly to every day %	Never %	Once or twice %	Weekly to every day %
They said bad things to me; called me names ^a	69.1	22.0	8.9	67.0	23.5	9.5	71.1	20.5	8.3
They didn't allow me to participate; ignored me ^b	82.8	13.3	3.9	84.8	11.6	3.6	80.7	15.1	4.2
They kicked, hit or pushed me ^c	85.3	11.8	2.9	83.7	13.4	2.9	86.6	10.4	3.0
They took my things away, or hid them	89.6	9.0	1.4	90.3	8.5	1.2	89.0	9.4	1.6
They spread rumors about me ^d	75.2	19.2	5.6	78.6	16.4	5.0	72.0	21.9	6.1
They made fun of me, while they know I don't like that	79.0	15.7	5.3	78.6	16.0	5.4	79.4	15.3	5.3

^a difference between boys and girls (Never versus Once or more often): $\chi^2 = 4.80$, $p = 0.028$

^b difference between boys and girls (Never versus Once or more often): $\chi^2 = 8.01$, $p = 0.005$

^c difference between boys and girls (Never versus Once or more often): $\chi^2 = 4.77$, $p = 0.029$

^d difference between boys and girls (Never versus Once or more often): $\chi^2 = 15.84$, $p < 0.001$

Table 3 shows the different forms of active bullying. Saying bad things or name calling (27.1%) was the most frequently reported form of active bullying behavior. Other forms of active bullying behavior reported by a substantial number of children were: the spreading of rumors (17.5%), making fun of others, while they don't like that (18.7%), ignoring or not allowing to participate (14.7%) or kicking, hitting and pushing (14.7%). Boys reported more bullying than girls, particularly more name calling, kicking, hitting or pushing and making fun of other children.

The children who had indicated on the question on general bullying that they bullied almost daily did report substantially higher numbers of specific bullying behavior, i.e.: name calling (66.7%), the spreading of rumors (52.9%), making fun of others, while they don't like that (52.9%), ignoring or not allowing to participate (41.2%) or kicking, hitting and pushing (58.8%), taking things away or hiding them (47.1%).

Table 3 Reported frequency of specific active bullying behavior during the last four weeks (n = 2766)

	All children			Boys			Girls		
	Never %	Once or twice %	Weekly to every day %	Never %	Once or twice %	Weekly to every day %	Never %	Once or twice %	Weekly to every day %
I said bad things; called other names ^a	72.9	23.0	4.1	68.4	26.4	5.3	77.5	19.5	2.9
I didn't allow another to participate; ignored him/her	85.3	12.3	2.4	84.3	12.8	2.9	86.3	11.8	1.9
I kicked, hit or pushed someone ^b	85.2	12.4	2.3	80.7	16.7	2.6	89.6	8.2	2.1
I took somebody's things away, or hid them	93.7	5.3	1.1	93.0	5.9	1.1	94.6	4.4	1.0
I spread rumors about others	82.5	14.6	2.9	83.4	13.7	3.0	81.7	15.3	2.9
I made fun of another, while I know he/she doesn't like that ^c	81.3	15.7	3.0	76.3	19.8	4.0	86.2	11.7	2.0

^a difference between boys and girls (Never versus Once or more often): $\chi^2 = 29.08, p < 0.001$

^b difference between boys and girls (Never versus Once or more often): $\chi^2 = 42.03, p < 0.001$

^c difference between boys and girls (Never versus Once or more often): $\chi^2 = 44.30, p < 0.001$

Who are the bullies?

The children were asked what school grade children who bullied others were from. Table 4 shows that more than 60% of the victims were bullied by children from their own grade in the same group. About 10% were bullied by children from a higher grade, and about 4% were bullied by children from a lower grade.

Table 4 Group of origin of the bullies for children who are bullied on a regular basis (n =439) .

Bully/bullies came from:	Origin of bully for all children % (n)	Origin of bully for victimized boys % (n)	Origin of bully for victimized girls % (n)
own group, same grade	63.8 (280)	59.9 (130)	67.4 (149)
another group, same grade	5.0 (22)	6.0 (13)	4.1 (9)
a higher grade	10.9 (48)	14.7 (32)	7.2 (16)
a lower grade	4.1 (18)	4.1 (9)	4.1 (9)
various groups/grades	16.2 (71)	15.2 (3)	17.2 (38)

Children also reported whether they were bullied by boys, girls or both. Table V shows that almost 70% of the boys were bullied by other boys. About 44% of the girls were bullied by one or several boys, and almost 23% of the girls were bullied by other girls. Boys were relatively less often bullied by girls.

Table 5 Report of victims on the gender of the bullies of those bullied on a regular basis (n = 429).

	All children % (n)	Boys % (n)	Girls % (n)
Bullied by one boy	27.7 (119)	36.1 (75)	20.0 (44)
Bullied by different boys	28.7 (123)	33.2 (69)	24.1 (53)
Bullied by one girl	7.5 (32)	5.3 (11)	9.5 (21)
Bullied by different girls	8.2 (35)	2.9 (6)	13.2 (29)
Bullied by boys and girls	28.0 (120)	22.6 (47)	33.2 (73)

Location of the bullying

Table 6 shows that most children were bullied either in the playground or in the classroom. A number of children were bullied in the hallway and in the gym. The category “Somewhere else” includes places such as by the bicycle racks, or near the home.

Table 6 Frequency of places where children were being bullied (data presented of children bullied regularly, n = 442; children could give multiple answers)

	All children % (n)
In the playground	76.9 (340)
In the classroom	40.5 (179)
In the hallway	23.5 (104)
In the gym	19.0 (84)
In the school canteen	7.5 (33)
In the toilets	3.6 (16)
Somewhere else	29.0 (128)

Telling parents or teachers

Children who reported being bullied were asked if they spoke about this with the teacher or with their parents. Only 53% of the regularly bullied children told their teacher about the bullying that took place, and 67% told their parents that they were bullied. Children who were bullied more frequently told their parents or teacher more often about the bullying than children who were bullied less frequently (Table 7). Of all the children who were regularly bullied, 75% told at least one adult (their teacher or their parents, or both) about the bullying.

Table 7 Percentage of regularly bullied children that told their teacher or parents that they are being bullied. (n = 418)

	Children who were bullied several times a month % (n)	Children who were bullied several times a week % (n)
I told the teacher (% yes) ^a	47.7 (103)	58.4 (111)
I told my parents (% yes) ^b	61.6 (135)	73.8 (141)

^a difference bullied 'several times a month' vs. 'several times per week': $\chi^2 = 4.67$, $p = 0.03$

^b difference bullied 'several times a month' vs. 'several times per week': $\chi^2 = 6.88$, $p = 0.01$

The children who were bullied were asked if one of their teachers, their parents, or their classmates tried to stop the bullying. Table 8 shows that a substantial number of both teachers and parents were unaware that the child was being bullied; for classmates this figure was lower. Of those teachers, parents and classmates who were aware of the bullying, the majority made an effort to stop the bullying. According to the children, when aware of the bullying, teachers tried to stop the bullying significantly more often than their parents (88% vs. 60%; $t = 6.17$, $p < 0.001$) or their classmates (88% vs. 54%; $t = 8.32$, $p < 0.001$) tried to stop it. In attempts to stop the bullying, teachers were successful in 49% of the cases, parents in 46%, and classmates in 41%; according to the children being bullied.

Table 8 According to the regularly bullied students, attempts by teachers, parents, and classmates to stop the bullying.

	Teachers % (n = 431)	Parents % (n = 409)	Classmates % (n = 422)
They didn't know I was bullied	34.8 (150)	39.1 (160)	17.5 (74)
No, they did not try to stop it	8.1 (35)	24.4 (100)	36.3 (153)
Yes, they tried to stop it, but it grew worse	9.5 (41)	3.7 (15)	6.6 (28)
Yes, they tried to stop it, but it stayed the same	19.5 (84)	15.9 (65)	20.9 (88)
Yes, they tried to stop it, and it decreased	28.1 (121)	16.9 (69)	18.7 (79)

Children who bullied other children were also asked if their teacher or parents talked to them about their bullying behavior. Overall, 52.1% of the teachers and 33.3% of the parents talked to the regular bullies about their behavior. Table 9 shows the percentage of teachers who spoke to the children about their behavior. Although teachers spoke somewhat more often to children who bullied most frequently (i.e. several times per week), many of those frequent bullies indicated that neither their teacher (43%) nor their parents (67%) spoke to them about their bullying behavior.

Table 9 Frequency of parents and teachers that spoke to the regular bullies about their behavior (n = 146).

	Children who bullied others several times per month % (n)	Children who bullied others several times per week % (n)
The teacher spoke to me about it. (% yes) *	50.0 (53)	57.5 (23)
My parents spoke to me about it. (% yes)**	33.3 (35)	33.3 (12)

Discussion

The results of this study show that bullying is still prevalent in Dutch schools. More than 16% of the children age 9-11 years participating in this study reported being bullied on a regular basis during the current school term, i.e. a few times a month or more often. More than 10% of the children indicated being bullied at least once a week or more frequently. With regard to active bullying, almost 6% (an average of one child in every classroom) reported to bully several times a month to almost daily. Thirty-seven percent of children reported having bullied another student at least once during the last term.

Our data on self reported general bullying behavior are supported by other studies in different countries, and some of these studies found even higher levels of bullying behavior among the same age group. Olweus³⁶ studied a large sample in Norway and found that 11% of the children in elementary school were bullied regularly, i.e. 'now and then' or more often, and 7% regularly bullied other children. In the United Kingdom, Whitney and Smith³⁷ found that 27% reported being bullied 'sometimes' or more often and 12% reported 'sometimes' or more often active bullying. Genta et al.² found high numbers in Italy, with up to 46% being bullied 'sometimes' or more often and 23% actively bullying. More recent numbers on victimization vary from 24% in England (once a week or more), 17% in the United States (once a week or more), to 8% in Germany (once a week or more).^{3,4}

The frequency of being bullied among girls and boys was similar; however, the majority of boys were mostly bullied by other boys, whereas a substantial number of girls were bullied by other girls. Some differences existed in types of bullying. Boys were more often kicked, pushed, or hit, whereas girls were more often ignored, excluded, or had rumors spread about them. Several other studies have also found this gender difference, in which boys experience more direct bullying, whereas girls experience more indirect bullying.^{5,37,39}

As expected, most bullying took place in the playground and in the classroom which are the two places where the children mostly interact with each other. This is in line with other reports.^{37,39} The high prevalence of bullying in the playground suggests that more effective supervision is needed. Olweus¹ found that the level of bullying was lower in schools where there were relatively more teachers present (a higher 'teacher density') during recess and lunch breaks.

Almost half of the bullied children did not tell their teacher that they were being bullied, something also noted in other studies.^{37,40} This finding suggests that teachers should create an environment in which children are encouraged to talk more about their bullying experiences.

One of the components of the successful anti-bullying program developed by Olweus¹ is the development of a set of class rules aimed specifically at bullying. Rules can be discussed during circle time and be posted in a visible place. Discussion of these rules can help build an anti-bullying ethos, and encourage children to talk about their own bullying experiences.

Encouraging other children to intervene when they notice bullying behavior can also be an important strategy to combat bullying. The intervening of bystanders to help the victim is known to be effective^{1,11} but it is also known that the majority of bystanders do not intervene.^{1,10} Motivating children to intervene and stand up for the victim could isolate bullies from their audience and social support and help to stop bullying behavior.^{10,12,13} Exercises using role-play can be useful in helping children to rehearse different appropriate strategies to intervene and stop bullying behavior.⁴¹

Another successful strategy is the Support Group Approach, in which a support group for the victim is created. The support group is composed of those involved in the bullying and bystanders, and is assigned the responsibility for solving the bullying problem.⁴²

Our finding that children spoke more often to their parents than to their teachers about being bullied, something also noted by Whitney and Smith,³⁷ stresses the importance of regular communication between parents and teachers on the subject of bullying. Schools can inform parents via newsletters on the school policy on bullying and explicitly ask parents to report to the teacher if their child is being bullied. A school can also organize an educational session on the subject of bullying, and inform parents about their anti-bullying rules and policy. In addition, teachers should address the subject of bullying during their regular talks with the parents.

We found that when teachers knew about the bullying, they often tried to stop it; however in many cases the bullying stayed the same or even grew worse. This could indicate that teachers should learn skills to more effectively intervene in bullying incidents. Organizations in several countries, e.g. Kidscape in the UK, and educational

training centers in the Netherlands such as APS and KPC, provide training to teach a variety of anti-bullying strategies.⁴³⁻⁴⁶

With regard to active bullying, many of the teachers and parents did not talk the bullies about their behavior. This could be because they did not know about the incidents or did not know what to do. Use of a survey can help reveal the level of bullying behavior. The Olweus anti-bullying program has such a questionnaire¹ and in the Netherlands teachers can use the “Bullying test”.⁴⁷ It is important that teachers involve the parents of active bullies when solving a bullying problem, since bullies should also learn in their home environment that their behavior is condemned. A teacher could arrange a meeting with the victim, bully and both their parents to discuss the bullying and create a plan to solve the issue.¹

It is important to include anti-bullying strategies - such as those mentioned above - as part of a whole-school anti-bullying policy. A whole-school approach is aimed at actively involving the whole-school community, i.e. pupils, school staff, and parents, in the efforts to tackle the bullying.⁴⁸ Several programs that embrace this whole-school approach are available, such as the Olweus anti-bullying program,¹ or the UK anti-bullying package ‘Don’t suffer in silence’.⁴⁹ These programs include many of the strategies mentioned above.

Anti-bullying interventions are also part of the Health Promoting Schools Framework. The Health Promoting Schools initiative was launched by the WHO and is a worldwide approach where schools provide education and support to enhance the emotional, social, and physical well-being of all members of their school community.³¹ Especially in Europe - via the European Network for Health Promoting Schools - and in Australia, this has stimulated the development and implementation of many school health programs, including several anti-bullying interventions.^{32,50}

Our current project is linked to the national action plan on school health in the Netherlands.⁵¹ This article presents the baseline measure of the first phase of this project. In this first phase, the effects of an anti-bullying policy in elementary schools will be studied. In a following phase Regional Health Centers will assist schools in several regions to implement a whole-school anti-bullying policy and this large scale implementation process will be evaluated.

In the Netherlands, Regional Health Centers have been involved in health promotion in schools for many years.⁵¹ Part of the national action plan on school health is to have those centers systematically describe the health status of the pupils, including bullying, for schools. In addition to assisting schools with implementing an anti-bullying policy, such structural communication on bullying behavior between schools and the Regional Health Centers could help to keep teachers informed about the prevalence of bullying behavior and would strengthen the whole-school approach.

Conclusion

The results of our study show that bullying is still prevalent in Dutch elementary schools and that teachers do not always effectively deal with many of the bullying incidents. Schools need to adopt a whole-school approach to bullying prevention, such as promoted in the Health Promoting Schools framework. All parties, i.e. school staff, pupils and parents, as well as organizations connected to the school community, need to be involved in cooperative efforts to prevent and diminish bullying behavior in schools. Children should be actively involved in the anti-bullying strategies; they should be taught rules that bullying is not accepted, and they should be motivated to intervene, stop and report bullying incidents.

Parents need to be informed on the school's anti bullying policy and be involved when bullying incidents occur. Parents should also be invited to report when their child is being bullied.

Teachers should learn effective ways to handle and solve bullying incidents and schools should aim to improve their interventions for bullying incidents by cooperation with relevant organizations, such as the Municipal Health Centers in the Netherlands. Detection of bullying incidents would be improved by regular and structural communication on the subject of bullying between pupils, teachers, parents and school health care workers.

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Chapter 3

Bullying behavior and associations with psychosomatic complaints and depression

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Abstract

Objective: To assess the association between bullying behavior and a wide variety of psychosomatic health complaints and depression.

Study design: In a cross-sectional study, a total of 2766 elementary school children age 9-12 years filled out a questionnaire on bullying behavior and health symptoms.

Three groups - bullied children, active bullies, and children who both bully and are bullied - were compared with the group of children not involved in bullying behavior. Subsequently, risks for psychosomatic symptoms and depression were calculated by means of odds ratios.

Results: Bully victims had significantly higher chances for depression and psychosomatic symptoms compared with children not involved in bullying behavior. Odds ratios: headache (3.0), sleep problems (2.4), abdominal pain (3.2), bedwetting (2.9), feeling tired (3.4), depression (7.7). Children who actively bullied did not have a higher chance for most of the investigated health symptoms.

Conclusion: Being bullied is strongly associated with a wide range of psychosomatic symptoms and depression. These associations are similar to the symptoms known to be associated with child abuse. Therefore, when such health symptoms are presented, pediatricians and other health care workers should also be aware of the possibility that a child is being bullied in order to take preventive measures.

Introduction

During the past decade, there has been an increasing demand for pediatric involvement in school health programs.¹ Today, school health programs target many subjects including bullying and violence prevention. Bullying is a widespread phenomenon among elementary, middle and high schools students. Recent studies in the United States, Europe, Australia, and Japan indicate that a substantial number of children are bullied regularly. Bullying is generally at its highest in elementary school and declines during adolescence and later years.² Depending on the study, age, and country, the number of frequently bullied children range from 6 to 46%.³⁻⁵ A recent national US study reported that almost 30% of the participating students in grades 6 to 10 were moderately (i.e. 'sometimes') or frequently (i.e. 'weekly or more often') involved in bullying behavior, either as bully, victim or as both.⁶

Although some conflict or harassment is typical of youth peer relations, regular bullying presents a potentially more serious threat to healthy youth development.⁶ Children involved in bullying behavior are found to be more often referred for psychiatric consultation.⁷ Also, an association has been found between being bullied and suicidal thoughts.^{8,9} A study in Northern Ireland found that being bullied by schoolmates was one of the most frequent stressors indicated by adolescents who survived a suicide attempt.¹⁰ The stress caused by bullying could also lead to psychosomatic complaints. Several studies have indicated a relationship between psychosomatic symptoms and bullying behavior.^{7,8,11-19} These studies show that the bullying of children should concern not only teachers and educational psychologist, but also physicians.²⁰ Because bullying is so common, all physicians dealing with children are likely to see some children who are regularly victimized at school by their peers.²¹

It would help general practitioners, pediatricians, (school)physicians and (school)nurses to know which specific health symptoms are most strongly associated with bullying behavior. This could help health practitioners when evaluating children from elementary schools to detect not only bully victims but also to detect a possible cause of the health problems that the child exhibits.

One of the strengths of the current study is the wide variety of psychosomatic health symptoms measured. This study presents data on these health symptoms and their association with regular bullying behavior. Those data are presented separately for the three groups involved: 1) children who are bullied, 2) children who bully, 3) and those children who both bully and are bullied. Those three groups are compared with children who are not involved in bullying behavior. The aim of the present study was to assess to what extent children who are bullied or who bully have a higher chance for this wide variety of specific psychosomatic symptoms and depression.

Methods

Sample and procedure

The 2766 participants in this study were derived from 32 Dutch elementary schools that participated in a longitudinal study on bullying and the implementation and effectiveness of an anti-bullying policy at schools. The results were derived before any special anti-bullying measures as part of the study had begun. All children from the highest three grades (age 9-12 years) participated by filling out a questionnaire. The questionnaires were completed in classrooms under examination-like conditions in October/November 1999.

Before the data-collection, the parental advisory boards of the participating schools were informed on the study, and they gave their written informed consent for participation. The design of the study was approved by the Medical Ethical Committee.

Measures

The questionnaire contained items on bullying, psychosomatic variables, depression, and several other health and demographic variables.

In the questionnaire bullying was designated as follows:

“The following questions are about bullying. Bullying is, for example, when another student or students say or do nasty and unpleasant things. When others take away, destroy or hide another student’s stuff. When others hit or push another student. But it is not bullying when two students of about the same strength quarrel or fight”.

Being bullied was assessed with the question:

“ How often did other children bully you during this (school)year?” Children could choose one of the following 6 answers: “I am not bullied”; “1 or 2 times”; “a few times a month”; “once a week”; 2 or 3 times a week”; or “almost every day”. Active bullying was assessed with the question “How often did you participate in bullying other children at school during this (school)year?” The 6 options for answer ranged from “ I did not bully any children this year” to “ almost every day”.

Students were presented with a series of health symptoms (headache, sleep problems, skin problems, abdominal pain, feeling tense, feelings of anxiety, feeling unhappy, crying without a specific reason, tense muscles, feeling tired, bad appetite, feeling listless). For each symptom they were asked to report whether they had the symptom in the last 4 weeks: never, sometimes or often.

Bedwetting was assessed by asking the students whether they wet their bed during the last four weeks, and, if so, with what frequency.

Depression was evaluated with the KDVK (Short Form Depression Questionnaire for Children).²² This questionnaire contains 9 items, e.g. “The last weeks I feel down”. Respondents can answer whether each item is true or not true. All items that are answered as “true” are summed, resulting in a score of 0 to 9. A score of 3 or higher is a moderate indication for depression. A score of 7 or higher is a strong indication for depression.

Data analysis

In the analysis, several response options have been dichotomized. Children reporting a frequency of being bullied “a few times a month” or more often were classified as being bullied; the remaining children were classified as not-bullied. Children reporting a frequency of active bullying “a few times a month” or more often were classified as bullies; the remaining children were classified as non-bullies. Subsequently, four mutually exclusive groups were created: 1) children who were neither bullied nor a bully; 2) children who were bullied, but who did not bully; 3) children who bullied other children, but who were not bullied; and 4) children who both bullied and were bullied.

For the psychosomatic symptoms, each health complaint was dichotomized into no health problem (frequencies: “never” or “sometimes”) versus a health problem (frequency: “often”).

All analyses were performed with SPSS/PC. Descriptive univariate statistics were used to study the prevalence of bully behavior. Odds ratios with 95% confidence interval and chi-square were used to calculate the association between health symptoms and bullying behavior.

Results

General characteristics of the sample

A total of 2766 students from the highest 3 grades of elementary school (age, 9-12 years; mean age, 10.1 years, SD 1.1) filled out questionnaires. The sample included 1370 boys (49.5%) and 1384 girls (50.0%) and 12 students (0.4%) with gender not known. Of the total sample, 14.5% was of non-Dutch origin (i.e. both parents born outside the Netherlands). Table 1 gives results on the frequency of bullying behavior for boys and girls during the previous months. Of all schoolchildren, 44.6% reported being bullied at least once or twice; bullying other children at least once or twice was reported by 37.5% of the children. Boys tended to be more involved than girls in bullying others ($\chi^2 = 78.81, p < 0.000$), but when being bullied both boys and girls were equally affected ($\chi^2 = 6.95, p = .22$).

Table 1 Reported frequency of bullying behavior during the previous trimester.

	Being bullied			Bullying others		
	Boys N = 1366 % (n)	Girls N = 1383 % (n)	Total N = 2761 % (n)	Boys N = 1358 % (n)	Girls N = 1379 % (n)	Total N = 2749 % (n)
Never	54.2 (740)	56.5 (781)	55.4 (1530)	54.9 (746)	70.1 (967)	62.5 (1719)
1 or 2 times	29.5 (403)	27.5 (380)	28.4 (785)	37.3 (506)	26.8 (369)	31.9 (878)
A few times per month	6.0 (82)	5.3 (74)	5.7 (156)	4.1 (55)	1.5 (21)	2.8 (78)
Once per week	3.4 (46)	3.0 (42)	3.2 (88)	1.5 (21)	0.8 (11)	1.2 (33)
2 or 3 times per week	3.9 (53)	3.2 (44)	3.5 (98)	1.4 (19)	0.3 (4)	0.8 (23)
Almost every day	3.1 (42)	4.5 (62)	3.8 (104)	0.8 (11)	0.5 (7)	0.7 (18)

Students were classified on the basis of frequently being bullied or frequent bullying, i.e. a few times per month or more often. A total of 2205 (80.2%) children were classified as not bullied and not a bully; 390 (14.2%) children were classified as bullied only; 96 (3.5%) were classified as bullies, and 56 (2.0 %) children were classified as both bullied and being a bully.

Being bullied and health complaints

Table 2 gives results on the prevalence of psychosomatic symptoms and depression among students who were bullied and those students not involved in bullying, as well as the odds ratios for each symptom. There was a consistent association between being bullied and all measured health symptoms. Children who were being bullied had a higher risk for psychosomatic symptoms such as headaches (odds ratio 3.0), sleep problems (odds ratio 2.4), abdominal pain (odds ratio 3.2), anxiety (odds ratio 3.5), feeling unhappy (odds ratio 5.6), bad appetite (odds ratio 2.3) and bedwetting (odds ratio 2.9). Bullied children were also at higher risk for depression. Prevalence of a moderate indication for depression was almost 3 times higher among children who were bullied (odds ratio 5.2). Prevalence of a strong indication for depression was almost 7 times higher (odds ratio 7.7) among children who are bullied than among children not involved in bullying behavior.

Table 2 Association between reported being bullied and psychosomatic or psychological complaints.

	Children who are neither bullied nor a bully (n = 2205) Prevalence of symptom	Children who are bullied (n = 390) Prevalence of symptom	Odds ratio* (95% confidence interval)	p-value
Psychosomatic symptoms				
Headache	6.1% (133/2196)	16.2 % (63/388)	3.00 (2.17 – 4.14)	<0.001
Sleep problems	23.4% (515/2202)	42.2 % (64/389)	2.38 (1.90 – 2.98)	<0.001
Skin problems	8.8% (193/2198)	14.9 % (50/390)	1.82 (1.33 – 2.51)	<0.001
Abdominal pain	6.0% (132/2202)	16.9 % (66/390)	3.23 (2.34 – 4.45)	<0.001
Feeling tense	9.1% (201/2197)	20.4 % (79/387)	2.54 (1.90 – 3.38)	<0.001
Anxiety	9.9% (218/2196)	27.8 % (108/388)	3.48 (2.68 – 4.53)	<0.001
Feeling unhappy	5.0% (109/2194)	22.9 % (89/389)	5.63 (4.16 – 7.64)	<0.001
Crying	2.4% (53/2193)	4.4 % (17/389)	1.83 (1.05 – 3.20)	<0.05
Tense muscles	3.7% (82/2199)	9.5 % (37/390)	2.70 (1.80 – 4.04)	<0.001
Feeling tired	3.4% (75/2197)	10.6 % (41/386)	3.37 (2.26 – 5.01)	<0.001
Bad appetite	10.1% (222/2201)	20.3 % (79/389)	2.26 (1.70 – 3.00)	<0.001
Feeling listless	3.0% (66/2202)	9.5 % (37/390)	3.38 (2.23 – 5.14)	<0.001
Bedwetting	2.2% (48/2197)	6.2 % (24/390)	2.94 (1.78 – 4.85)	<0.001
Depression				
Moderate indication for depression (KDVK > 3)	16.0% (342/2144)	48.6 % (187/385)	5.15 (4.07 – 6.51)	<0.001
Strong indication for depression (KDVK > 6)	2.4% (52/2144)	16.1 % (62/385)	7.72 (5.24 – 11.37)	<0.001

* Odds ratios adjusted for sex

Active bullying and health complaints

Results on the association between psychosomatic complaints and active bullying behavior present a different pattern. Table 3 shows that there was no strong or consistent association between actively bullying other children and having from psychosomatic symptoms or depression. Most health symptoms such as sleep problems, skin problems, abdominal pain and anxiety were not more prevalent among children who actively bullied other children. Prevalence of both a moderate and a severe indication for depression were also the same among children who actively bullied and children who were not involved in bullying behavior. Headaches and bedwetting were slightly more common among children who bullied other children.

Table 3 Association between reported active bullying and psychosomatic or psychological complaints.

	Children who are neither bullied nor a bully (n = 2205) Prevalence of symptom	Children who bully (n = 96) Prevalence of symptom	Odds ratio* (95% confidence interval)	p-value
Psychosomatic symptoms				
Headache	6.1% (133/2196)	12.8 % (12/94)	2.22 (1.15 – 4.30)	<0.05
Sleep problems	23.4% (515/2202)	23.2% (22/95)	0.96 (0.58 – 1.57)	NS
Skin problems	8.8% (193/2198)	10.6 % (10/94)	1.45 (0.74 – 2.86)	NS.
Abdominal pain	6.0% (132/2202)	7.6 % (7/92)	1.59 (0.71 – 3.45)	NS
Feeling tense	9.1% (201/2197)	8.3 % (8/96)	0.94 (0.45 – 1.96)	NS
Anxiety	9.9% (218/2196)	10.4 % (10/96)	1.04 (0.53 – 2.05)	NS
Feeling unhappy	5.0% (109/2194)	4.2 % (4/96)	0.84 (0.30 – 2.32)	NS
Crying	2.4% (53/2193)	3.1 % (3/96)	1.48 (0.45 – 4.84)	NS
Tense muscles	3.7% (82/2199)	3.2 % (3/95)	0.74 (0.23 – 2.42)	NS
Feeling tired	3.4% (75/2197)	3.2 % (3/94)	0.88 (0.27 – 2.86)	NS
Bad appetite	10.1% (222/2201)	16.8 % (16/95)	1.72 (0.97 – 3.05)	NS
Feeling listless	3.0% (66/2202)	1.1 % (1/95)	0.30 (0.04 – 2.21)	NS
Bedwetting	2.2% (48/2197)	6.3 % (6/95)	2.48 (1.03 – 5.96)	<0.05
Depression				
Moderate indication for depression (KDVK > 3)	16.0% (342/2144)	16.0 % (15/94)	1.08 (0.60 – 1.95)	NS
Strong indication for depression (KDVK > 6)	2.4% (52/2144)	3.2 % (3/94)	0.98 (0.23 – 4.08)	NS

* Odds ratios adjusted for sex

Being both bullied and a bully, and health complaints

Table 4 presents the prevalence of psychosomatic symptoms and depression reported by the students who were not involved in bullying behavior and those who are both bullied and bullied other students, as well as the odds ratios for each symptom. Several of the measured health symptoms were more prevalent among children who both bullied and were bullied than in children who were neither bullied nor bullied other children. The students who both bullied and were bullied had a higher risk for abdominal pain (odds ratio 3.1) bad appetite (odds ratio 3.7), bedwetting (odds ratio 6.2), feeling unhappy (odds ratio 5.4), and feeling tired (odds ratio 3.9). Prevalence of an indication of depression was higher among the children who both bullied and were bullied children than in children who were not involved in bullying behavior.

Table 4 Association between reported active bullying/being bullied and psychosomatic or psychological complaints.

	Children who are neither bullied nor a bully (n = 2205) Prevalence of symptom	Children who both bully and are bullied (n = 56) Prevalence of symptom	Odds ratio* (95% confidence interval)	p-value
Psychosomatic symptoms				
Headache	6.1% (133/2196)	10.7 % (6/56)	2.02 (0.85 – 4.81)	NS
Sleep problems	23.4% (515/2202)	23.4 % (13/56)	0.93 (0.48 – 1.77)	NS
Skin problems	8.8% (193/2198)	14.3 % (8/56)	2.01 (0.93 – 4.36)	NS
Abdominal pain	6.0% (132/2202)	14.3 % (8/56)	3.10 (1.42 – 6.80)	0.01
Feeling tense	9.1% (201/2197)	26.8% (15/56)	3.70 (2.00 – 6.83)	<0.001
Anxiety	9.9% (218/2196)	23.2 % (13/56)	2.74 (1.45 – 5.19)	<0.01
Feeling unhappy	5.0% (109/2194)	21.8 % (12/55)	5.36 (2.74 – 10.50)	<0.001
Crying	2.4% (53/2193)	3.6 % (2/56)	1.63 (0.39 – 6.91)	NS
Tense muscles	3.7% (82/2199)	1.8 % (1/56)	0.43 (0.06 – 3.17)	NS
Feeling tired	3.4% (75/2197)	12.5 % (7/56)	3.92 (1.72 – 8.97)	0.001
Bad appetite	10.1% (222/2201)	28.6 % (16/56)	3.68 (2.02 – 6.71)	<0.001
Feeling listless	3.0% (66/2202)	8.9 % (5/56)	2.91 (1.13 – 7.49)	<0.05
Bedwetting	2.2% (48/2197)	14.3 % (8/56)	6.23 (2.82 – 13.74)	<0.001
Depression				
Moderate indication for depression (KDVK > 3)	16.0% (342/2144)	48.1 % (25/52)	5.96 (3.34 – 10.63)	<0.001
Strong indication for depression (KDVK > 6)	2.4% (52/2144)	11.5 % (6/52)	5.73 (2.32 – 14.14)	<0.001

* Odds ratios adjusted for sex

Conclusion

The current study shows a strong association between being bullied and a wide range of psychosomatic symptoms and depression. Bullied children more often indicated health symptoms like headache, abdominal pain, bedwetting, sleep problems and indication for depression than children who were not involved in bullying behavior. Children who were active bullies did not report higher levels for most psychosomatic symptoms and depression.

The third group involved in bullying behavior, i.e. children who both bullied and were being bullied, showed a pattern that mostly resembles the group of bullied children. These children had more psychosomatic symptoms and more often showed an indication for depression. For some health symptoms there was no significant difference between this bully/bullied group and the children not involved in bullying behavior. This lack of difference may be a result of the small number of children in this group. It could be that the children in this group bullied in response to being bullied and therefore mostly resembled the group of bullied children.²³

From our results it can be concluded that being bullied is associated with many psychosomatic complaints and depression, and that bullying others is not associated with most of these health symptoms. Because the results are based on cross-sectional data, it is not possible to show a causal relationship between being bullied and the psychosomatic health complaints. However, it can be hypothesized that being bullied leads to a higher number of health symptoms, because bullying victimization is likely to be a considerable source of stress. Others have reported that suicidal ideation was increased among those who were bullied, which emphasizes the stressful nature of being bullied.^{8,10} Because stress is considered to contribute to the development of psychosomatic and mental health problems, being bullied likely contributes to the higher prevalence of the health symptoms and depression measured in our study.

However, even if bullying behavior does not cause these health problems, it is valuable to detect whether a child with those health symptoms is being bullied. It could be an important source of stress for the child that should be dealt with; the stress of being bullied would certainly not help in attempts to cope with depression, bedwetting, or other psychosomatic symptoms.

Our observation that bullied children have more health problems is confirmed by other studies.^{11,13,24,25} Some studies among older age-groups have also reported an association between active bullying and some health symptoms.^{8,11,12,17} We did not find a higher prevalence among bullies for most health symptoms. It may be that bullying for the age-group in our study is still part of more common behavior, whereas for older children it, is more rare and may be associated with a problematic lifestyle in general.

A recent study among older children in the United States found that bullying behavior - and in particular, active bullying - was associated with other violent behaviors like weapon carrying and frequent fighting.²⁶

The health symptoms found in our study to be associated with being bullied are also known to be associated with child abuse²⁷⁻³⁰. Health care workers have been advised to seriously look into the possibility of child abuse when a child exhibits several of these health symptoms. Our study shows that pediatricians, general practitioners, school-physicians, and school nurses dealing with children with psychosomatic health symptoms or depression should also be aware of the possibility that these children are being bullied. There is an increased chance that children with headache, abdominal pain, bad appetite, bedwetting, anxiety and depression are being bullied. Therefore, when a child exhibits one or more of these symptoms, it is advisable to explicitly ask whether the child is being bullied.

When bullying is detected, pediatricians, general practitioners, or school nurses should take appropriate action to try to stop it, e.g. by speaking to the parents and asking them to inform the school staff. Because some bullied children have a behavior pattern that may ineffectively deal with bullying behavior, the child may need to be referred to a (school) psychologist to learn more appropriate social skills. Bullying prevention should also be directed at the parents of those children who bully. Studies have shown that parental use of harsh discipline and physical punishment are positively associated with more bullying and other aggressive behavior toward peers.³¹⁻³³ These parents should be sensitized that their own possible aggressive behavior at home could be modeled at school.³²

Parents, and school health care providers could also encourage the school to develop an anti-bully policy. Such a school-based intervention would be especially needed if several children of the same school are having bullying-related problems. Studies in European countries have shown that a school-based anti-bullying policy can substantially reduce bullying. A study by Olweus in Norway found a high reduction (as much as 50%) in levels of bullying behavior.³⁴ A study in England also showed a substantial reduction in victimization (15-20%) in participating schools.³⁵

Because children who exhibit aggressive behavior at a young age are more likely to display anti-social and violent behavior at a later age, it is recommended to start intervening at an early age.^{36,37} Aggressive behavior can be reduced and prosocial behavior can be increased among young children in elementary school.³⁸ Therefore, anti-bullying and violence prevention measures should start at the onset of elementary school and should continue as part of the curriculum throughout the school years to prevent bullying and other violent behavior at a later age.

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Chapter 4

Do bullied children get ill, or do ill children get bullied?

A prospective cohort study on the relationship between bullying and health complaints.

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Abstract

Objective: Studies have shown that bullying victimization is associated with a substantial number of health symptoms, but it is unclear which come first. In our present study we investigated whether bullying victimization precedes psychosomatic and psychosocial health symptoms, or whether these health symptoms precede bullying victimization.

Design: 6 month follow-up cohort study with data-collections in the fall of 1999 and the spring of 2000.

Setting: 18 Elementary schools in the Netherlands.

Participants: 1118 children from the upper three grades (age 9-11 years) participated by filling out a questionnaire on both moments of data collection.

Outcome measures: A self-administered questionnaire measured bullying victimization, and a wide variety of psychosocial and psychosomatic health symptoms such as: depressive symptoms, anxiety, bedwetting, headache, sleep problems, abdominal pain, feeling tense, feeling tired, and bad appetite.

Results: Bully victims had significantly higher chances to develop new psychosomatic and psychosocial health problems six months later, compared with children who were not bullied. Odds ratios were as follows: depressive symptoms (4.18, 1.9-9.4), anxiety (3.01, 1.7-5.3), bedwetting (4.71, 1.5-15.2), sleep problems (1.91, 1.1-3.3), feeling tense (3.04, 1.6-5.7), feeling tired (2.23, 1.0-4.9), and abdominal pain (2.37, 1.2-4.8). In addition, some of the psychosocial health symptoms also preceded bullying victimization. Children with depressive symptoms had a significantly higher chance of being newly victimized six months later (3.41, 1.3-8.7); this was also significant for children with anxiety (1.96, 1.1-3.5).

Conclusions: Many psychosomatic and psychosocial health problems follow an episode of bullying victimization. These findings stress the importance for doctors and health practitioners of establishing whether bullying plays a contributing role when a child displays such health symptoms. Furthermore, our results also indicate that children with depressive symptoms and anxiety are at increased risk of being victimized. Because victimization could adversely affect children's attempts to cope with depression or anxiety, it is important to consider teaching these children social skills that would make them less vulnerable to bullying behavior.

Introduction

Studies in many countries have shown that a substantial number of elementary and high school students are bullied regularly by their peers. Numbers of victimization vary depending on country and definition: 30% in Italy (sometimes or more), 24% in England (bullied once a week or more), 17% in the United States (once a week or more), 19% in the Netherlands (a few times a month or more), 16% in Finland (once a week or more), and 8% in Germany (once a week or more).¹⁻⁵ Other studies have shown a significant relationship between bullying behavior and health symptoms. Children who are bullied exhibit more often health symptoms such as: headache, stomach ache, bedwetting, anxiety and depression.⁶⁻¹³ However, most of these studies included only cross-sectional data indicating an association, but no direct causality.

It is debatable whether these health symptoms precede the bullying victimization or whether bullying victimization precedes the onset of these health problems. Some researchers have suggested that the stress caused by bullying can lead to an increase in health symptoms.¹⁴ However, it has also been hypothesized that children with health problems, such as depression or anxiety, are more vulnerable to being bullied by other children.¹⁵⁻¹⁶

Only a few studies have prospectively investigated bullying and its relationship with health symptoms. In one study, Kochenderfer and Ladd¹⁷ found that victimized children tend to experience more loneliness and become more school avoidant after they were victimized by their peers. Bond et al.⁶ found that secondary school students who were bullied had a higher risk of depression and anxiety during the next school year, especially girls. Bond et al. found no evidence that depression or anxiety increased the risk for later victimization.

The substantial numbers of bullied children and the association between victimization and health symptoms have prompted several recent comments emphasizing the importance to address bullying.¹⁸⁻²⁰ To our knowledge no longitudinal studies have investigated the relationship between bullying and specific psychosomatic health problems such as abdominal pain, bedwetting, and headache. It would be valuable to know whether bullying victimization precedes these health symptoms or whether these health symptoms precede bullying victimization. Such information could help in the prevention of these health symptoms and prevention of bullying victimization.

Because many general practitioners, pediatricians and other health care professionals are likely to see children who are being bullied or who display psychosomatic health symptoms, it is important for them to know which health

symptoms create a higher risk in children to become bullied, and which health symptoms are resulting from being bullied.

Our study involved a group of elementary school children in the Netherlands. In the beginning and end of the school year we provided a survey to measure their bullying behavior as well as a large number of psychosomatic and mental health symptoms (including abdominal pain, bedwetting, headache, depression and anxiety). With these prospective data we aimed to address the following questions:

- 1) Does bully victimization at the beginning of the school year give a higher risk of developing health symptoms later in the same school year?
- 2) Do health symptoms at the beginning of the school year give a higher risk of becoming a bully victim later in the same school year?

Methods

The study population was derived from 18 Dutch elementary schools that participated as a control group in a longitudinal study on bullying and the implementation and effectiveness of an anti-bullying policy at schools. Children from the upper three grades (age 9-11 years) participated by filling out a questionnaire. The questionnaires were completed in classrooms under examination-like conditions in October/November 1999 and May 2000. The questionnaire contained items on bullying, psychosomatic variables, depression and several other health, demographic and social variables (e.g. the number of friends).

Before data collection, the parental advisory boards of the participating schools were informed about the study, and gave written informed consent for participation. The design of the study was approved by the Medical Ethical Committee.

Bullying

Being bullied was assessed with the question:

“How often did other children bully you during the last months?”. Children could answer: “I am not bullied”; “1 or 2 times”; “a few times a month”; “once a week”; “2 or 3 times a week”; or “almost every day”. Children reporting a frequency of being bullied “a few times a month” or more often were classified as bullied. The other children were classified as not bullied.

Health symptoms

Children were presented with a series of health symptoms (e.g. headache, sleep problems, abdominal pain, feeling tense, anxiety, feeling tired, bad appetite). For each

symptom they were asked to report whether they had the symptom never, sometimes or often during the last four weeks. Each health symptom was dichotomized into no health problem (frequencies “never” or “sometimes”) versus a health problem (frequency “often”). Items were based on items from the KIVPA, a Dutch instrument to measure psychosocial problems among children.²¹

Bedwetting was assessed by asking the students whether they wet their bed at least once during the last four weeks.

Depression

Depression was evaluated with the SDIC (Short Depression Inventory for Children).^{13,22} This nine-item questionnaire can be used to screen for depressive symptoms among children; with items such as, “The last weeks I felt down”. Respondents can answer whether each item is true or not true. All items answered as “true” are summed, resulting in a 0 to 9 score. A score of 7 or higher is considered a strong indication for depression. Respondents with scores 7 or higher were classified as depressed.

Statistical analysis

All analysis were performed with SPSS/PC, version 11. Descriptive univariate statistics were used to study the prevalence of bully behavior.

To analyse the incidence of health symptoms among bullied and non-bullied children, only those children who did not have the health symptom at the beginning of the school year were included.

Similarly, to analyze the incidence of bullying among children with and without specific health symptoms, only those children who were not bullied at the beginning of the school year were included.

Multiple logistic regression was used to control for confounding variables and to calculate Odds ratios (OR) with 95% confidence interval. The variables age, gender and number of friends were included as confounding variables since these are known to be related to outcome variables like depression and bullying behavior.

Results

Of a total sample of 1597 children, 1552 (97%) participated at the first measurement at the beginning of the school year. A total of 1118 (70%) children filled out the questionnaire both at the beginning and end of the school year, providing data for this analysis. For the 433 children who did not participate at the second measurement there

were no significant differences on any of the demographic or outcome variables of the first measurement. Of those who did not participate at the second measurement a total of 15.0% were bullied at the baseline measurement, whereas 14.6% of those who did participate at the second measurement were bullied at the beginning of the study. For other outcome variables those numbers were respectively: depression (4.8 vs. 4.0), anxiety (11.9 vs. 12.5), abdominal pain (7.4 vs. 7.3), sleep problems (26.2 vs. 24.3), headache (7.0 vs. 7.2), feeling tense (8.6 vs. 10.7), bedwetting (4.2 vs. 3.5), feeling tired (2.3 vs. 4.4), bad appetite (10.7 vs. 10.4). The main reason for non-response at the second measurement was that three schools (310 students) had no time within their curriculum for a second measurement towards the end of the school year.

Half of the sample were boys, mean age was 10 years. At the beginning of the school year 14.6% of the students were being bullied, at the end of the school year 17.2% of the students were being bullied (Table 1).

Table 1 General characteristics of the sample.

Gender	
- boys	49.7%
- girls	50.3%
Mean age in years (SD)	10.05 (1.1)
Students bullied a few times a month or more often at the beginning of the school year	14.6%
Students bullied a few times a month or more often at the end of the school year	17.2%

We calculated the risk to develop specific health symptoms during the school year. Table 2 gives the incidence of new symptoms for children who were and those who were not bullied at the beginning of the school year. Children who were bullied at the beginning of the school year had a significantly higher risk of developing new health symptoms later in the school year. Odds ratios were particularly high for health problems such as depression (4.18), anxiety (3.01), bedwetting (4.71), abdominal pain (2.37), and feeling tense (3.04).

A possible interaction effect with relation to gender was investigated by adding the interaction BULLYING xGENDER term to the model. For most of the risks of developing health symptoms there were no significant differences between boys and girls. Only for the effects of bullying on the development of abdominal pain did the interaction-term significantly improve the model ($\chi^2 = 9.59$; $p = 0.002$). Being bullied had a strong relation with the development of abdominal pain for girls (Odds = 4.98; CI = 2.17 - 11.43; $p < 0.001$) whereas there was no such relationship for boys (Odds = 0.34; CI = 0.04 - 2.66; $p = 0.305$).

Table 2 Incidence of health symptoms during the school year among children who were bullied and those who were not bullied at the beginning of the school year.

T1 Being bullied at beginning of the school year (only children without the specific health symptom)	T2 Incidence of health symptoms at the end of the school year	Odds ratio (95% CI)*	p-value
- not bullied	Depression 2.1% (19/899)	1.00	
- bullied	7.9% (11/139)	4.18 (1.87 - 9.36)	0.001
- not bullied	Anxiety 6.3% (54/854)	1.00	
- bullied	19.3% (23/119)	3.01 (1.72 - 5.25)	<0.001
- not bullied	Abdominal pain 3.9% (35/893)	1.00	
- bullied	9.4% (13/138)	2.37 (1.17 - 4.82)	0.016
- not bullied	Sleep problems 11.6% (86/743)	1.00	
- bullied	22.0% (22/100)	1.91(1.09 - 3.34)	0.024
- not bullied	Headache 6.2% (55/888)	1.00	
- bullied	11.3% (16/141)	1.77 (0.96 - 3.30)	0.070
- not bullied	Feeling tense 5.3% (46/860)	1.00	
- bullied	14.5% (19/131)	3.04 (1.64 - 5.65)	<0.001
- not bullied	Bedwetting 0.7% (6/917)	1.00	
- bullied	4.7% (7/149)	4.71 (1.46 - 15.23)	0.010
- not bullied	Feeling tired 3.0% (27/913)	1.00	
- bullied	6.8% (10/146)	2.23 (1.01 - 4.93)	0.048
- not bullied	Bad appetite 7.2% (62/864)	1.00	
- bullied	15.0% (20/133)	2.21 (1.25 - 3.90)	0.006

* Odds ratios adjusted for variables gender, age and having friends.

We also calculated the risk of developing bully victimization in relation to somatic and psychological health symptoms. Table 3 presents Odds ratios for getting bullied at the end of the school year for children who were not bullied at the beginning of the school year. Children who were depressed at the beginning of the school year were at higher risk of being bullied at the end of the school year. Children who indicated feelings of anxiety and a bad appetite at the beginning of the school year were also at a higher risk of being victimized at the end of the year. Children with other health symptoms (e.g. headache, abdominal pain, and bedwetting) did not have a higher risk of being bullied at the end of the school year.

A possible interaction effect with relation to gender was investigated by adding the interaction HEALTHCOMPLAINT xGENDER term to the model. For most of the health symptoms there were no significant differences between boys and girls. Only for the effects of sleep problems on the development of bullying did the interaction-term significantly improve the model ($\chi^2 = 4.54$; $p = 0.03$). Sleep problems had a stronger relation with the development of bullying victimization for boys than for girls, but for neither boys nor girls was this relationship significant.

Table 3 Incidence of bullying during the school year among children with and those without a specific health symptom at the beginning of the school year.

T1 Presence of specific health complaint at the beginning of the school year (Only children who were not bullied)	T2 Incidence of bullying at the end of the school year	Odds ratio (95% CI)*	p-value
Depression			
- no	10.2% (98/902)	1.00	
- yes	29.2% (7/24)	3.41 (1.34 - 8.69)	0.010
Anxiety			
- no	10.6% (90/851)	1.00	
- yes	20.0% (19/95)	1.96 (1.11 - 3.46)	0.020
Abdominal pain			
- no	11.3% (101/891)	1.00	
- yes	14.3% (8/56)	1.40 (0.63 - 3.12)	0.407
Sleep problems			
- no	11.2% (83/741)	1.00	
- yes	12.6% (26/206)	1.10 (0.68 - 1.79)	0.699
Headache			
- no	11.2% (99/885)	1.00	
- yes	16.9% (10/59)	1.74 (0.85 - 3.59)	0.132
Feeling tense			
- no	11.4% (98/859)	1.00	
- yes	12.5% (11/88)	1.25 (0.64 - 2.46)	0.516
Bedwetting			
- no	11.3% (104/918)	1.00	
- yes	19.2% (5/26)	1.99 (0.72 - 5.49)	0.181
Feeling tired			
- no	11.3% (103/912)	1.00	
- yes	17.6% (6/34)	1.66 (0.67 - 4.11)	0.273
Bad appetite			
- no	10.8% (93/861)	1.00	
- yes	18.6% (16/86)	2.11 (1.16 - 3.81)	0.014

* Odds ratios adjusted for variables gender, age and having friends.

Discussion

We studied the development of bullying victimization and health symptoms among a group of elementary school children during one school year. Results showed that children who are being regularly bullied at the beginning of the school year have a higher risk of developing new health symptoms towards the end of the school year. This supports the hypothesis that the stress of bullying victimization causes the development of somatic and psychological health problems.

However, our study also showed that children who are depressed or anxious at the beginning of the school year are at higher risk of becoming new bully victims later that year. Anxious or depressed behavior could make a child appear more vulnerable to aggressive peers and thereby make the child an easy target for victimization. Other studies have found that victimized children exhibit characteristics of vulnerability - such as sub-assertive behavior - that make them attractive targets for aggressive children.²³ An alternative explanation may be that some children who are anxious or depressed are more inclined to define some of their experiences as bullying whereas other children would not define these experiences as bullying.

Other studies have indicated that depression or anxiety could follow an episode of bullying.⁶ Our study confirms this, and further shows that a large number of health symptoms may also results from a period of being bullied. Bond et al. ⁶ found that especially victimized girls are at higher risk of anxiety and depression during the following school year, but they found no evidence that being anxious or depressed was predictive for a higher risk of being victimized at a later time. This latter result differs from the results of our study. However, because the children in our study were younger than those in the study of Bond et al., our study sample may have had a higher incidence of new bullying cases. In somewhat older children the incidence of bullying victimization gradually decreases, making it more difficult to show a relation between early health symptoms and later onset of bully victimization.

Some of the strengths of the study are the wide variety of health symptoms measured and the longitudinal data used for the analysis. There are some methodological considerations. Data provided for this study are based on self reports of children. This carries a potential risk. Some children may be prone to report more problematic behavior in general and therefore some results might overstate the associations between variables, such as the associations between health variables and bullying. Actual effect sizes may, as a result, be smaller than those found in our data.

In addition to a general bias that some children might report more symptoms, it could also be that especially depressed children may have the tendency to experience things more negatively and report more often other health problems or negative

experiences. In this light, it should be noted that associations of depression with victimization were particularly high.

However, because we studied the incidence of either bullying victimization or health symptoms, our analyses included only children who reported either health symptoms or bullying victimization at the beginning of the study, but not both symptoms at the same time. Therefore children prone to report many symptoms may be partially excluded from our analysis.

Our results indicate that victimization causes an increase in health problems such as: headache, abdominal pain, anxiety and depression. These findings stress the importance for doctors and health practitioners of establishing whether bullying plays a contributing role when a child exhibits such health symptoms. Therefore when such health symptoms are presented, doctors and health practitioners should explicitly ask whether a child is bullied.

Our finding that victimization precedes the development of a substantial number of health symptoms further suggests that effective prevention of bullying behavior in schools could decrease the number of children with such health problems. Several studies have shown that school based interventions can reduce bullying behavior.²⁴ Doctors and other health care professionals may take an active approach in working together with schools in order to assist schools with the implementation of anti-bully policies. Coöperation between schools and health care professionals could also help with the detection of children who are being bullied.^{18-20,25,26} In some European countries, like in the Netherlands, municipal child health services (e.g. school doctors and school nurses) have a legally assigned task to assist schools with their school health policies and to help detect children with psychosocial problems.^{21,27}

Our results further indicate that children with psychosocial health symptoms (like depression and anxiety) are at increased risk of being victimized. Because victimization could have an adverse effect on children's attempts to cope with depression or anxiety, it is important to consider teaching these children social skills that would make them less vulnerable to bullying behavior. Rigby et al.²⁸ found that suicidal ideation among bullied children was especially high among those victims with little social support. Therefore, children with anxiety or depression and additional possible risk factors for victimization (e.g. having few or no friends, being unpopular, or being sub-assertive), should be referred to a (school)psychologist or be trained in social skills to prevent bully-victimization.

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Chapter 5

Longitudinal development of bullying victimization, the influence of friendships, and school satisfaction.

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Abstract

Objective: To investigate the risk in bullied children for continued victimization and the influence of friendships; and in addition to investigate the influence of victimization and friendships on school satisfaction.

Methods: An 18 month follow-up study, with measurements on 3 moments. Measurements included self reported bullying behavior, number of friends, and school satisfaction.

Results: Children who are bullied at the beginning of the school year have much higher chances of being bullied 6 months later during the same school year (Odds ratio: 8.08), and 18 months later at the end of the next school year (Odds ratio 4.17). Having few or no friends is also related to higher risks for victimization at the same time period, but not predictive for later victimization.

Bullying behavior and having friends were related to school satisfaction. Children who were victimized as well as children with few or no friends indicated lower satisfaction with school life compared with children who were not bullied.

Conclusions: A substantial number of children are subject to continued bully victimization. Children with few or no friends are more at risk of being bullied. Teachers and parents should target individual interventions at those children who are bullied and at risk for continued victimization. Children who are frequently bullied and also display other risk factors such as having few friends should be referred for evaluation by a mental health specialist; counseling or training in social skills should follow if needed.

Introduction

Many studies during the last two decades have indicated that a substantial number of children are bullied on a regular basis. More recent studies have focused on the factors that are associated with bullying behavior. Children who are being bullied are found to have more health complaints, like psychosomatic symptoms, depression and anxiety.¹⁻⁵ Some studies also have found that active bullying is associated with a higher level of these health symptoms.

Bullying victimization is furthermore associated with other factors such as school maladjustment and low self esteem. Some longitudinal studies have indicated that victimization precedes the development of school maladjustment and depression.^{6,7} Other longitudinal studies have focused on the stability of bullying behavior and showed that a considerable part of the children are either persistent victims or active bullies.^{8,9}

Several factors are found to be associated with recurrent victimization. Many victimized children display behaviors that make them appear weak or inefficient to defend themselves against perpetrators. Victims are more anxious, have lower self-esteem, cry easily, and use ineffective persuasion tactics.¹⁰⁻¹²

It has been suggested that having few or no friends is another risk factor for victimization. Friendships can serve a protective function: bullies might prefer to victimize children with few friends because they don't have to fear retaliation or ostracism from the children's friends.¹³ Hodges, Malone, & Perry¹⁴ found that friendships could serve as a protective factor for children who were at higher risk for victimization, i.e. children with internalizing problem. They also found that the friends' level of physical strength was related to the risk for victimization. Children with stronger friends had a lower risk for victimization.

Victimization can affect children's level of school satisfaction. Kochenderfer and Ladd⁷ found that victimization is a precursor of children's loneliness and school avoidance. They also found that longer periods of victimization were related to higher levels of school adjustment problems.

In the present study we followed children for two consecutive years during which levels of victimization, number of friends and levels of school satisfaction were measured. The two following questions were investigated:

- 1) To what extent are bullied children at risk for continued victimization and what is the influence of friendships on this risk?
- 2) What is the influence of victimization and friendships on the level of school satisfaction?

Methods

Participants

The participants in this study were derived from 18 elementary schools that participated in a longitudinal study on bullying and the implementation and effectiveness of an anti-bullying policy at schools. The results presented here were derived from those schools that were assigned to the control group of the study. Therefore no specific intervention as part of the study had taken place at these schools.

Children from the last 3 grades (9-12 years old) participated by filling out a questionnaire. The questionnaires were completed in classrooms under exam-like conditions on three moments: at the beginning of the first school year of the study (T1), 6 months later at the end of the first school year (T2) and 18 months later at the end of the second school year of the study (T3). Children from the highest grade had left the school at the second year of the study and therefore did not participate in the data-collection on T3. In every classroom a research-assistant was available to answer questions.

Before the data-collection, the parental advisory boards of the participating schools were informed on the study, and they gave their written informed consent for participation. The design of the study was approved by the Medical Ethical Committee.

Questionnaire

Bullying

Being bullied was assessed with the question

“How often did other children bully you during this school term?”. Children could answer with one of the following six options: “I am not bullied”; “1 or 2 times”; “a few times a month”; “once a week”; “2 or 3 times a week”; or “almost every day”. Children reporting a frequency of being bullied “a few times a month” or more often were classified as bullied. The other children were classified as not-bullied.

Level of school satisfaction

Experience of school life was measured with three scales from the Dutch ‘School experience questionnaire’,¹⁵ i.e. ‘general satisfaction with school life’ (10 items; $\alpha = 0.83$; item example: “I don’t like to go to school”), ‘satisfaction of contacts with other students’ (8 items; $\alpha = 0.81$; item example: “I would rather be in a classroom with other children”), and ‘satisfaction of contact with the teacher’ (15 items; $\alpha = 0.79$; item example: “I think my teacher teaches in a nice way”). For every item children could choose an answer from four options, e.g. ‘always’, ‘often’, ‘sometimes’, or ‘never’.

Item scores were added up with higher scores indicating a higher level of school satisfaction.

Number of friends

Number of friends was determined by the question “How many good friends do you have in your classroom?”. Children could choose an answer from several options ranging from ‘none’ to ‘more than five’. Answers were dichotomized. Because of the low number of children with no friends the answers were dichotomized into “none or few friends” including the categories “none” and “one friend” versus “several friends” including the options “two friends” or more.

Statistical analysis

Only children who participated in T1 and at least one follow up measurement (either T2 or T3) were included in the main analysis.

Multi-level techniques with MlwiN were used for multiple regression analysis and the calculation of odds ratio's in order to adjust for possible clustering effects among students within classes.¹⁶ Odds ratio were used to analyze the risk for continuation of bullying victimization. Multiple regression analysis were used to analyze the influence of bullying, friendships and gender on levels of school satisfaction. Statistical level for significance was $p < 0.05$.

Results

Of a total sample of 1597 children, 1552 (97%) participated at the first measurement at the beginning of the school year (T1). A total of 1327 children participated in at least one follow up measurement. Of this group 1118 children participated on T1 and T2; 900 children of this group participated on T1 and T3.

Non-response

A total of 433 children did not participate at T2. Main reason for non-response at the second measurement was that three schools (310 students) had no time within their curriculum for a second measurement towards the end of the school year. For the children who did not participate at the second measurement there were no significant differences in bullying victimization at the baseline measurement. Of the children who did not participate at the second measurement (T2) a total of 15.0% were bullied at baseline measurement (T1), whereas 14.6% of those who did participate at the second measurement were bullied at the beginning of the study ($\chi^2 = 0.05$; $p = ns$). There were also no significant differences at T0 in the number of children who had few or no friends (6.9% vs. 6.4%; $\chi^2 = 0.17$; $p = ns$). For the scales on school satisfaction there was no significant difference for the scale 'general satisfaction with school' (21.0 vs. 21.25; $t = 0.88$; $p = ns$); there was also no significant difference for the scale 'satisfaction of contact with the teacher' (31.79 vs. 32.21; $t = 1.25$; $p = ns$); however, there was a significant difference for the scale 'contact with other students' at which non-respondents at T2 had a lower score at the baseline measure compared with those who did also participate at T2 (19.85 vs. 20.29; $t = 2.04$; $p = 0.042$).

A total of 652 children did not participate at T3. Main reason for non-response at T3 was that the oldest grade (510 children) had left the school and consequently did not participate in the third measurement. Of the non-participants of the third measurement (T3) a total of 12.5% were bullied at baseline measurement, whereas 16.4% of those who did participate at T3 were bullied at the beginning of the study ($\chi^2 = 4.62$; $p = 0.032$). Between the two groups there were no significant differences at T0 in the number of children who had few or no friends (6.3% vs. 6.7%; $\chi^2 = 0.07$; $p = ns$). For school satisfaction there was no significant difference for the scale 'general satisfaction with school' (20.95 vs. 21.35; $t = 1.50$; $p = ns$); there was also no significant difference for the scale 'satisfaction of contact with other students' (20.33 vs. 20.06; $t = -1.37$; $p = ns$); however, there was a significant difference for the scale 'satisfaction of contact with the teacher' at which non-respondents at T3 had a lower score at the baseline measure compared with those who did also participate at T2 (31.67 vs. 32.39; $t = 2.38$; $p = 0.017$).

Bullying, having friends, and continuation of the victimization

Table 1 presents for each measurement the data on the relationship between number of friends and bullying victimization. The results show that for each measurement children with few or no friends were more likely to get bullied. Because of the low numbers in the categories ‘no friend’ and ‘one friend’ these categories were combined into one category ‘no of few friends’ in the further analysis of this study.

Table 1 Number of friends and bullying victimization.

	% children bullied	χ^2	p-value
T1^a			
No friend	41% (9/22)	16.42	< 0.001
One friend	23% (15/64)		
Two or more friends	14% (172/1236)		
T2^b			
No friend	47% (7/15)	35.37	<0.001
One friend	46% (20/44)		
Two or more friends	16% (165/1052)		
T3^c			
No friend	55% (6/11)	25.11	<0.001
One friend	25% (6/24)		
Two or more friends	11% (91/862)		

^a Difference between ‘no friend’ and ‘one friend’ $\chi^2 = 2.48, p = 0.115$

^b Difference between ‘no friend’ and ‘one friend’ $\chi^2 = 0.01, p = 0.935$

^c Difference between ‘no friend’ and ‘one friend’ $\chi^2 = 2.92, p = 0.087$

Table 2 presents data on the risks for children involved in bullying behavior at the beginning of the first year of the study. Children who were victimized at the beginning of the first year (T1) had significantly higher chances of being victimized at the end of the same school year (odds ratio 8.08) or 18 months later at the end of the next year (odds ratio 4.17).

Table 2 Risks for continuation of bully victimization.

Situation at T1	Percentage bullied at T2 6 months later	Odds ratio for being bullied at T2 (95% CI)	p-value	Percentage bullied at T3 18 months later	Odds ratio for being bullied at T3 (95% CI)	p-value
Not bullied	11.5 (109/948)	1.00		8.2 (61/748)	1.00	
Bullied	51.6 (83/161)	8.08 (5.47-11.94)	<0.001	28.8 (42/146)	4.17 (2.64-6.60)	<0.001

The number of children that were bullied at all three moments was also calculated. Of the children who participated in all three measurements a total of 3.9% (27/691) were bullied at all three moments. Of the children who were bullied at the beginning of the study about one out of four (24%) were also bullied 6 months later (T2) and 18 months later (T3) (Odds 8.65; CI 4.64 - 16.10; $p < 0.001$). Of the children who were bullied both at T1 and T2 a total of 45% were also bullied at T3 (Odds 8.16; CI 4.65 - 14.30; $p < 0.001$).

When also the number of friends that the children had were taken into account the results showed that having few or no friends at the beginning of the study did not add to the risk for continuous victimization either 6 months or 18 months later (Table 3 and 4). Results also indicated that having few friends did substantially increase the risk for being bullied at the same measurement.

Table 3 Results of multiple logistic regression. Risks for being bullied after 6 months at T2.

	Odds ratio for being bullied at T2 (95% CI)	p-value
Being bullied at T1		
No	1.00	
Yes	8.06 (5.53 - 11.74)	<0.001
Friends at T1		
Several	1.00	
None or one	1.15 (0.61 - 2.16)	n.s.
Friends at T2		
Several	1.00	
None or one	4.25 (2.31 - 7.84)	<0.001

Table 4 Results of multiple logistic regression. Risks for being bullied after 18 months at T3.

	Odds ratio for being bullied at T3 (95% CI)	p-value
Being bullied at T1		
No	1.00	
Yes	4.46 (2.84 - 7.00)	<0.001
Friends at T1		
Several	1.00	
None or one	1.06 (0.48 - 2.34)	n.s.
Friends at T3		
Several	1.00	
None or one	4.09 (1.82 - 9.18)	0.001

Table 5 presents the results of the regression analyses with level of school satisfaction at the beginning of the study (T1) as the dependent variable. The results indicated that both bully victimization and having few friends were related to level of school satisfaction. Bullied children and children with few friends indicated lower scores on all three scales, i.e. ‘general satisfaction with school life’, ‘satisfaction of contact with other students’, and ‘satisfaction of contact with the teacher’.

Table 5 Results of multiple regression analysis: unstandardized Beta (Beta) and P value of individual variables on school satisfaction at the beginning of the study (T1).

	General satisfaction with school life at T1		Satisfaction of contact with other students at T1		Satisfaction of contact with teacher at T1	
	Beta	P	Beta	P	Beta	P
Constant	23.38		21.94		35.87	
Bullied at T1	-2.25	<0.001	-4.38	<0.001	-1.50	<0.01
Few friends at T1	-2.45	<0.001	-4.26	<0.001	-1.66	<0.05
Gender (0=boy, 1=girl)	1.42	<0.001	-0.15	n.s.	1.96	0.001

Bullying and school satisfaction

Results of the multiple regression analysis with school satisfaction at the end of the first year are presented in Table 6. Being bullied and having few friends at the beginning of the school year was related to a lower level of satisfaction with other students at the end of the year. There was a trend that being bullied and having few friends at the beginning of the school year were related with a lower general satisfaction with school life at the end of the year.

Table 6 Results of multiple regression analysis: unstandardized Beta (Beta) and P value of individual variables on school satisfaction after 6 months (T2).

	General satisfaction with school life at T2		Satisfaction of contact with other students at T2		Satisfaction of contact with teacher at T2	
	Beta	P	Beta	P	Beta	P
Constant	22.27		21.57		38.36	
Bullied at T1	-0.81	<0.10	-1.18	<0.001	-0.85	n.s.
Few friends at T1	-1.14	<0.10	-2.52	<0.001	0.12	n.s.
Bullied at T2	-2.66	<0.001	-3.83	<0.001	-1.33	<0.05
Few friends at T2	-0.91	n.s.	-3.90	<0.001	-0.49	n.s.
Gender (0=boy, 1=girl)	1.65	<0.001	-0.30	n.s.	2.06	<0.001

Table 7 present the results of the regression analyses with school satisfaction at the end of the second study year (T3) as the dependent variable. The results indicated that both victimization and friendships had separate significant contributions to the level of school satisfaction. Being bullied at the beginning of the first school (T1) year was related with lower satisfaction with general school life and lower satisfaction of contact with fellow students 18 months later at T3, when controlled for current victimization at T3. Having few or no friends at the beginning of year one was also related to a lower level of satisfaction with 'general school life' and 'contact with fellow students' at the end of year two (T3).

Table 7 Results of multiple regression analysis: unstandardized Beta (Beta) and P value of individual variables on school satisfaction after 18 months (T3).

	General satisfaction with school life at T3		Satisfaction of contact with other students at T3		Satisfaction of contact with teacher at T3	
	Beta	P	Beta	P	Beta	P
Constant	21.90		22.17		36.70	
Bullied at T1	-1.53	<0.01	-1.16	<0.001	-0.86	n.s.
Few friends at T1	-2.15	<0.01	-1.27	<0.01	0.09	n.s.
Bullied at T3	-2.94	<0.001	-4.69	<0.001	-2.60	<0.001
Few friends at T3	-4.41	<0.001	-5.45	<0.001	-2.95	<0.05
Gender (0=boy, 1=girl)	1.44	<0.001	-0.15	n.s.	1.01	<0.05

Conclusions

The results of this study show that children who were bullied at the beginning of the school year had much higher chances of being bullied later that school year, and even two years later. Having few or no friends was also related to a higher risk for bullying victimization at the same time period. However, having few or no friends was not predictive for a higher risk of later bullying victimization.

Bullying behavior and having friends were related to school adjustment. Children who were victimized as well as children with few or no friends indicated lower satisfaction with school life. Bullied children with few or no friends indicated the lowest satisfaction with school life compared with children who were not bullied.

Both being victimized and having few friends at the beginning of the school year predicted lower satisfaction of school life at the end of the next school year. Although

these effects were small they suggest that having few friends as well as being victimized have a prolonged effect on satisfaction with school life.

There are some methodological considerations. Data provided for this study are based on self reports of children. Some children may have a more negative outlook on life or some may be depressed and consequently report more problems in general. This may have resulted in an overestimation of the association between bullying victimization and having few friends or the association between bullying victimization and lower levels of school satisfaction. Actual effect sizes may therefore be smaller than those found in our data.

Furthermore, in the analyses the group of children with no friends and those with one friend were combined into the same category, mainly because of the low number of children with no friends. Having one good friend could serve a protective function compared with having no friends. Therefore some of the effect sizes for this combined group may be smaller than they would be for the group of children with no friends only. Analysis indicated that the highest percentages of bully victimization were among those children with no friend. However, these percentages did not differ significantly from the numbers of victimization of those with one friend, possibly due to low numbers.

It could also be argued that having one good friend is more valuable than having several less important friends. Because we did not measure the quality of the friendships we could not control for this possibility in the current study.

The results presented in this study are in line with a study by Hodges et al.¹³ who found that children at risk for victimization were more often victimized, except the children who had a protective friendship. In another study Hodges & Perry¹⁷ also found that children with few friends experienced more victimization during the next year. Kochenderfer & Ladd⁷ found that children in kindergarten tend to become more lonely and school avoidant after they have been victimized by their peers. Slee & Rigby¹⁸ found that victimization correlated with lower number of friends and feelings of less happiness and less safety at school.

The results presented in this study suggest that a specific group of children is more at risk for victimization. Because being a victim shows a certain stability it makes sense to direct intervention or prevention strategies at individual students in addition to general anti-bullying measures. Especially those children who are the target of frequent victimization and who have few friends need individual help. Not only are they at high risk for continued victimization, but they also are the group that has the lowest satisfaction with school life. This might increase their risk for school absenteeism, depression or even suicidal thoughts. Several studies have reported a relation between

victimization and school absence. In a study by Reid¹⁹ students indicated that bullying victimization was one of the main reasons for their absenteeism.

It may be that especially those bullied children with few friends have characteristics (e.g. lack of social skills, being shy or anxious) that make them more vulnerable for victimization, but also prevent them from making friends. If serious victimization is suspected, an assessment of the situation needs to be made and appropriate actions need to follow. Teachers need to make a plan in cooperation with parents to find a solution for the problem. The bullies need to be addressed and appropriate actions need to be taken. If assessment of the situation indicates that there are certain characteristics within the victim (such as: signs of anxiety, depression, shyness, lack of social skills, lack of assertiveness) that make victimization more likely, the child should be referred for an evaluation by a mental health professional. Children may need individual counseling for some psychiatric problems that are detected or they may need to be trained in skills to interact effectively with their peers. Teaching those skills should focus on learning how to handle bullying incidents and on how to socialize and make friends.

Teachers, parents and health care professionals dealing with children should be vigilant for possible signs of bullying and related characteristics. Detection of these children should happen as early as possible so children can learn skills to withstand victimization during the school years, and negative effects of prolonged victimization can be prevented.

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Chapter 6

Longitudinal relationship between active bullying and delinquent behavior

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Abstract

Introduction: Although active bullying behavior can be considered as an aggressiveness problem on its own, it may be a sign of a more general problematic development. It would be valuable to know if bullying behavior can be considered as a marker of a more problematic life style. In this study we investigated the longitudinal relationship between bullying and delinquent behavior.

Methods: A total of 900 children (age 9-12) filled out a questionnaire measuring bullying and delinquent behavior at the beginning of the study and at the end of the following school year.

Results: Results show that active bullying behavior was strongly related to delinquent behavior. Especially frequent bullies were more often engaged in delinquent behaviors, not only during the same time period, but also 18 months later. For boys, there was also a relation over time with non-delinquent children who bullied frequently being at higher risk for developing delinquent behavior 18 months later. We also found that non-bullying boys who were involved in delinquent behavior were at higher risk of becoming an active bully 18 months later.

Conclusions: Efforts to prevent bullying in schools should give special attention to those children who bully frequently because their bullying may be part of a broader problematic development. These efforts to help bullies to stop their aggressive behavior at a younger age may in the long term prevent these children from developing a lifestyle of anti-social behavior at a later age. Frequent bullying can therefore serve as a marker that a child is at risk for developing such a lifestyle.

Introduction

Bullying is considered a form of aggressive behavior that is objectionable and should be prevented. Bullying is usually defined as intentional repeated acts to harm another individual by which there is an imbalance of power between the bully and the victim.¹ Although some level of conflict and harassment can be part of a normal youth development and many children might occasionally get involved in bullying, there are certain factors related to active bullies that are also found to be related to aggressive children in general. Children who are exposed to violent and aggressive behavior at home might develop this behavior themselves and generalize this towards their peers. Studies have shown²⁻⁴ that parental use of harsh discipline and physical punishment are positively associated with more bullying and other aggressive behavior towards peers. Strassberg et al.⁴ found that children who were spanked by their parents displayed more aggressive behavior towards peers, compared with those who had not been spanked. Children whose parents used stronger (i.e. violent) methods of discipline displayed the most aggression towards their peers.

Lack of warmth between parents or in the family and lack of clear guidelines for behavior and monitoring of children's activities are also known to be related to high levels of aggressive behavior.⁵ Rigby⁶ found that bullies reported poorer psychosocial family functioning. Children who indicated lower levels of emotional support by their parents were more prone to bully their peers.

Bullying behavior can be either direct physical (e.g. hitting, kicking), direct verbal (e.g. calling names) and indirect (e.g. excluding others, rumoring). Boys are generally more often involved in direct physical bullying compared with girls. Girls are found to bully in a more indirect way which is sometimes referred to as relational bullying.⁷⁻⁹

It has been debated whether bullies have low social skills or that bullies are socially high skilled which enables them to bully other children.^{10,11} Some researchers have found support for the hypothesis that bullies have above average understanding of cognitions and emotions.¹² This could be especially the case for indirect bullying behavior which requires more social skills. It may be that indirect aggression requires more social intelligence than direct forms of aggression. Some support for this idea has been found by Kaukiainen et al.¹³ who found that indirect aggression was positively related to social intelligence, but direct forms of aggression (either physical or verbal) were not related.

Although active bullying behavior can be considered as an aggressiveness problem on its own, it may be a sign of a more general problematic development. Some studies have shown that bullying behavior is associated with violent and other anti-social behavior.¹⁴ Loeber (1990)¹⁵ indicated that delinquent behavior in later life is

often preceded by chronic problematic behavior at an earlier age. It would be valuable to know if bullying behavior can be considered as a marker of a more problematic life style.

In this longitudinal study we investigated the relationship between active bullying and delinquent behavior. We measured bullying and delinquent behavior at the beginning of the school year and 18 months later. The main questions in our study were:

- Are active bullies more often involved in delinquent behavior?
- Are active bullies at risk for developing later delinquent behavior?
- Are children who display delinquent behavior at risk for developing bullying behavior later?

Methods

The participants in this study were derived from 18 elementary schools that participated as a control group in a longitudinal study on bullying and the implementation and effectiveness of an anti-bullying policy at schools. Children from the last 3 grades (9-12 years old) participated by filling out a questionnaire. Data for the analysis in this study came from questionnaires completed in classrooms under exam-like conditions in October/November 1999 (T1) and eighteen months later in May 2001 (T3). A second measurement in May 2000 (T2) was not included in the current analyses. The questionnaire contained items on bullying, delinquent behavior and several other variables, such as the number of friends children had.

Before the data-collection, the parental advisory boards of the participating schools were informed on the study, and they gave their written informed consent for participation. The design of the study was approved by the Medical Ethical Committee.

Questionnaire

Bullying

Active bullying was assessed with the question

“How often have you bullied other children during this school term?”. Children could answer with one of the following options: “I did not bully”; “1 or 2 times”; “a few times a month”; “once a week”; “2 or 3 times a week”; or “almost every day”. A similar question was included to measure bullying victimization.

Answers were categorized into three categories, ‘no bullying’, ‘a few times’ (i.e. 1 or 2 times) and ‘frequently’ (i.e. a few times a month or more often).

Delinquent behavior

Delinquent behavior was measured with a seven item scale. The items of this scale were derived from the International Self-Report Delinquency Questionnaire.¹⁶ Each item addressed a different form of delinquent behavior, i.e. “Have you destroyed or damaged public property?”, “Have you sprayed graffiti on the street?”, “Have you shoplifted?”, “Have you used public transport without paying?”, “Have you set fire to trees or bushes, or things that didn’t belong to you?”, “Have you beaten up someone, to such an extent that medical help or a doctor was needed”, to “Have you stolen something at school?” Children could answer for each item if they had done this or not. All items that were answered positively were added up. Cronbach’s alpha of the scale was 0.66. Answers were categorized into three categories, ‘no delinquent behavior’ (a score of 0), ‘some delinquent behavior’ (i.e. a score of 1) and ‘high delinquent behavior’ (i.e. a score of 2 or higher).

Statistical analysis

All analysis were performed with SPSS/PC 10.0. Multiple Logistic regression was used to control for confounding variables and to calculate Odds ratios with 95% confidence interval. The variables age and number of friends were included as confounding variables because these are known to be related to outcome variables like delinquency and bullying behavior. The level for a statistical significant difference was $p < 0.05$. A p -value between 0.05 and 0.10 was considered a trend; p -values > 0.10 are presented as non significant (n.s.).

Results

Of a total sample of 1597 children (grade 6, 7, and 8), 1552 (97%) participated at the first measurement at the beginning of the school year. During the follow-up measurement the next year children from grade 8 had left the school, consequently only children from grade 6 and 7 from the first measurement participated in the follow up.

The participants of the first measurement included 1040 children from grade 6 and 7. From this group a total of 140 children did not participate at the follow-up measurement, whereas a total of 900 (87 %) children filled out the questionnaire also at the end of the following school year, providing data for these analyses.

Of the non-respondents of the follow up measurement 13.1% indicated some delinquent behavior and 16.8% high delinquent behavior at baseline measurement compared to 18.7% (some) and 11.7% (high) for those who did participate at both measurements ($\chi^2 = 4.55$; $p = ns$). Of those who did not participate at the follow up a

total of 7.1% indicated at baseline measurement having few or no friends compared to 6.7% for those who did participate at both measurements ($\chi^2 = 0.04$; $p = ns$). For active bullying the numbers were for non-respondents 31.4% for some bullying and 7.9% for frequent bullying compared to 28.7% and 4.9% for those who did participate at both measurements ($\chi^2 = 2.84$; $p = ns$).

The group of non-respondents included more children involved in bullying victimization. For bullying victimization these numbers were for non-responders 7.1% (some) and 19.3% (frequent) compared to 5.6% and 10.8% for participants of both measurements ($\chi^2 = 9.27$; $p = 0.01$).

Mean age of the children was 9.55 years (SD 0.9 years) at the beginning of the study. Table 1 presents the number of children involved in active bullying behavior, victimization and delinquent behavior.

Table 1 General characteristics, bullying and delinquent behavior at the baseline measurement.

	All children % (n)	Boys % (n)	Girls % (n)
Gender			
- boys	48.8 (439)	-	-
- girls	51.2 (461)	-	-
Active bullying			
- none	66.3 (593)	56.3 (245)	75.8 (348)
- a few times	28.7 (257)	35.9 (156)	22.0 (101)
- frequently (a few times a month or more often)	5.0 (44)	7.8 (34)	2.2 (10)
Bullying victimization			
- none	54.1 (485)	50.3 (220)	57.6 (265)
- a few times	29.5 (265)	32.7 (143)	26.5 (122)
- frequently (a few times a month or more often)	16.4 (147)	16.9 (74)	15.9 (73)
Delinquent behavior			
-none	69.6 (614)	59.9 (258)	78.9 (356)
- some (score = 1)	18.7 (165)	22.3 (96)	15.3 (69)
- high (score ≥ 2)	11.7 (103)	17.9 (77)	5.8 (26)

Table 2 shows the associations between bullying behavior, age, gender, having friends and delinquency. These results indicated that children who were involved in active bullying behavior were also more often involved in delinquent behavior. Children who bullied a few times had a higher chance to display 'some' delinquency (odds ratio 1.59) and more often 'high' delinquency (odds ratio 3.08) compared with children who did not bully. Children who bullied frequently displayed substantially more often 'high' delinquency (odds ratio 8.53) compared with children who did not bully. Both for boys

and girls separately there was a strong association between bullying behavior and delinquent behavior. Boys who bullied a few times and boys who bullied frequently were more often involved in ‘high’ delinquent behavior compared with boys who did not bully. Bullying boys did not more often display ‘some’ delinquent behavior compared with non-bullying boys. Girls who bullied a few times and girls who bullied frequently more often displayed ‘some’ delinquency and also more often ‘high’ delinquency compared with girls who did not bully. Victimization was not related to delinquent behavior.

Table 2 Results of multiple logistic regression analyses. Associations of bullying with delinquent behavior, both at the first measurement (T1).

	Risk for some delinquent behavior			Risk for high delinquent behavior		
	Odds ratio	95 % CI	P-value	Odds ratio	95 % CI	P-value
Model 1: All children (n = 828)						
Active bullying						
- a few times bullying vs. never	1.49	1.01 - 2.21	0.047	3.04	1.85 - 4.98	<0.001
- frequently bullying vs. never	2.04	0.88 - 4.76	0.097	8.19	3.65 - 18.38	<0.001
Bullying victimization						
- a few times victimization vs. never	1.17	0.78 - 1.76	n.s.	1.06	0.63 - 1.78	n.s.
- frequently victimization vs. never	1.48	0.90 - 2.43	n.s.	1.21	0.65 - 2.25	n.s.
Age						
- 10 versus 9 yrs	1.11	0.73 - 1.69	n.s.	0.91	0.51 - 1.65	n.s.
- 11 versus 9 yrs	1.52	0.91 - 2.55	n.s.	2.26	1.24 - 4.14	0.008
Having friends (0 = none or one friend; 1 = two or more friends)	1.23	0.57 - 2.63	n.s.	0.60	0.27 - 1.32	n.s.
Gender (0 = girl; 1 = boy)	1.76	1.23 - 2.53	0.002	3.40	2.06 - 5.62	<0.001
Model 2: Boys (n = 399)						
Active bullying						
- a few times bullying vs. never	1.29	0.76 - 2.18	n.s.	2.63	1.45 - 4.80	0.002
- frequently bullying vs. never	1.36	0.48 - 3.87	n.s.	6.57	2.68 - 16.16	<0.001
Bullying victimization						
- a few times victimization vs. never	0.86	0.50 - 1.48	n.s.	1.03	0.55 - 1.92	n.s.
- frequently victimization vs. never	0.98	0.47 - 2.01	n.s.	1.31	0.63 - 2.73	n.s.
Age						
- 10 versus 9 yrs	1.00	0.56 - 1.78	n.s.	0.95	0.48 - 1.85	n.s.
- 11 versus 9 yrs	1.96	0.96 - 4.02	0.067	2.64	1.22 - 5.68	0.013
Having friends (0 = none or one friend; 1 = two or more friends)	1.01	0.35 - 2.91	n.s.	0.48	0.18 - 1.25	n.s.

(Continued)

Table 2 (continued)

	Risk for some delinquent behavior			Risk for high delinquent behavior		
	Odds ratio	95 % CI	P-value	Odds ratio	95 % CI	P-value
Model 3: Girls (n = 428)						
Active bullying						
- a few times bullying vs. never	1.90	1.05 - 3.45	0.024	4.02	1.67 - 9.70	0.002
- frequently bullying vs. never	4.58	1.05 - 19.95	0.019	15.11	2.27-100.69	0.005
Bullying victimization						
- a few times victimization vs. never	1.70	0.91 - 3.16	0.094	0.97	0.37 - 2.59	n.s.
- frequently victimization vs. never	2.25	1.11 - 4.54	0.024	0.77	0.22 - 2.70	n.s.
Age						
- 10 versus 9 yrs	1.17	0.64 - 2.16	n.s.	0.78	0.27 - 2.28	n.s.
- 11 versus 9 yrs	1.21	0.55 - 2.63	n.s.	1.92	0.68 - 5.47	n.s.
Having friends (0 = none or one friend; 1 = two or more friends)						
	1.42	0.46 - 4.39	n.s.	0.88	0.19 - 4.18	n.s.

Table 3 shows the results on the longitudinal association between bullying behavior and delinquent behavior. The results indicate that children who bullied frequently at the beginning of the study were more involved in delinquent behavior 18 months later at T3 (odds ratio 2.4 for 'some' delinquent behavior and odds ratio 5.1 for 'high' delinquent behavior), compared with children who did not bully. Those children who bullied only a few times at T1 did not display more often 'some' delinquency at T3, but they did display more often 'high' delinquency. Separate analyses for boys and girls show that for both gender groups bullying behavior was associated with 'high' delinquency at T3.

Table 3 Results of logistic regression analyses. Risk for bullies of involvement in delinquent behavior 18 months later.

Baseline situation at T1	Risk for some delinquent behavior 18 months later (T3)			Risk for high delinquent behavior 18 months later (T3)		
	Odds ratio	95 % CI	P-value	Odds ratio	95 % CI	P-value
All children (n = 843)						
- a few times bullying vs. never	1.26	0.85 - 1.87	n.s.	2.33	1.53 - 3.55	<0.001
- frequently bullying vs. never	2.55	1.10 - 5.92	0.030	5.06	2.27 - 11.28	<0.001
Boys (n = 407)						
- a few times bullying vs. never	1.32	0.78 - 2.23	n.s.	1.96	1.16 - 3.29	0.011
- frequently bullying vs. never	3.29	1.22 - 8.87	0.019	4.85	1.89 - 12.46	0.001
Girls (n = 436)						
- a few times bullying vs. never	1.17	0.64 - 2.14	n.s.	3.27	1.59 - 6.70	0.001
- frequently bullying vs. never	0.89	0.10 - 7.72	n.s.	7.41	1.55 - 35.48	0.012

Table 4 presents the results on the development of new delinquent behavior among those children who didn't indicate any delinquent behavior at the baseline measurement T1. The results indicated that children who bullied frequently were at higher risk for developing new delinquent behavior 18 months later at T3 (odds ratio 3.2) compared with children who did not bully. Those children who were less frequently involved in bullying behavior were not at higher risks compared with children not involved in bullying. When gender was taken into account the results show that especially frequently bullying boys were at higher risks.

Table 4 Results of logistic regression analyses. Risk for bullies with no delinquent behavior of developing delinquent behavior 18 months later at T3.

Baseline situation (only children with no delinquent behavior included) (T1)	Risk for new delinquent behavior (score ≥ 1) 18 months later (T3)		
	Odds ratio	95 % CI	P-value
All children (n = 585)			
- a few times bullying vs. never	1.50	0.98 - 2.28	0.059
- frequently bullying vs. never	3.58	1.25 - 10.24	0.017
Boys (n = 242)			
- a few times bullying vs. never	1.55	0.88 - 2.72	n.s.
- frequently bullying vs. never	4.47	1.27 - 15.71	0.020
Girls (n = 343)			
- a few times bullying vs. never	1.41	0.75 - 2.68	n.s.
- frequently bullying vs. never	1.90	0.19 - 19.37	n.s.

Table 5 shows the relation between delinquent behavior at the baseline measurement and bullying behavior 18 months later. Children who displayed 'some' delinquent behavior at T1 were not more often involved in bullying behavior 18 months later at T3. Children who displayed 'high' delinquent behavior at T1 were more often involved in 'a few times' bullying behavior (odds ratio 3.2) and 'frequent' bullying behavior (odds ratio 2.7) at T3. Separate analyses for boys and girls showed a similar pattern for boys, but for girls only a significant association was found between 'high' delinquency at T1 and 'a few times' bullying 18 months later at T3.

Table 5 Results of logistic regression analyses. Risk for delinquent children of involvement in bullying behavior 18 months later at T3.

Baseline situation (T1)	Risk for infrequent bullying behavior 18 months later (T3)			Risk for frequent bullying behavior 18 months later (T3)		
	Odds ratio	95 % CI	P-value	Odds ratio	95 % CI	P-value
All children (n = 832)						
- some delinquent behavior vs. never	0.98	0.66 - 1.44	n.s.	0.83	0.40 - 1.75	n.s.
- high delinquent behavior vs. never	2.25	1.39 - 3.63	0.001	3.17	1.57 - 6.39	0.001
Boys (n = 402)						
- some delinquent behavior vs. never	1.01	0.60 - 1.68	n.s.	0.74	0.28 - 1.95	n.s.
- high delinquent behavior vs. never	1.96	1.09 - 3.52	0.025	3.65	1.64 - 8.14	0.002
Girls (n = 348)						
- some delinquent behavior vs. never	0.95	0.51 - 1.75	n.s.	1.16	0.36 - 3.71	n.s.
- high delinquent behavior vs. never	3.54	1.52 - 8.24	0.003	1.18	0.14 - 9.91	n.s.

Table 6 presents data on the risks of developing new bullying behavior after 18 months (T3) among those children who were not involved in bullying behavior at the baseline situation (T1). Those children who displayed frequent delinquent behavior at T1 were at higher risks (odds ratio 2.7) for developing active bullying behavior at T3 compared with children who indicated no delinquent behavior. When gender was taken into account these results were only significant for boys who bullied frequently.

Table 6 Results of logistic regression analyses. Risk for delinquent children who don't bully of developing bullying behavior 18 months later (T3).

Baseline situation (only children who don't bully are included) (T1)	Risk for new bullying behavior (a few times or more often) 18 months later (T3)		
	Odds ratio	95 % CI	P-value
All children (n = 557)			
- some delinquent behavior vs. never	0.94	0.57 - 1.56	n.s.
- high delinquent behavior vs. never	2.72	1.36 - 5.44	0.005
Boys (n = 245)			
- some delinquent behavior vs. never	1.06	0.53 - 2.10	n.s.
- high delinquent behavior vs. never	3.21	1.33 - 7.71	0.009
Girls (n = 348)			
- some delinquent behavior vs. never	0.88	0.40 - 1.90	n.s.
- high delinquent behavior vs. never	2.37	0.71 - 7.90	n.s.

Discussion

In this study we investigated the relation between active bullying behavior and delinquency. The results of our study indicated that active bullying behavior was strongly related to delinquent behavior. Especially frequent bullies were more often engaged in delinquent behaviors, not only during the same time period, but also 18 months later. For boys, there was also a relation over time, with non-delinquent children who bullied frequently being at higher risk for developing delinquent behavior 18 months later. We also found that non-bullying boys who were involved in delinquent behavior were at higher risk of becoming an active bully 18 months later.

Although our data did not represent a national sample and only involved children between 9 and 12 years old, the results indicate that active bullying behavior should not be considered an objectionable behavior on its own. Especially frequent bullying among boys should be considered as part of a broader anti-social behavioral pattern. Our results indicated that the relation between delinquency and bullying is less strong for girls. This may be due to the fact that girls in general are less involved in both active bullying and delinquent behavior. Other studies have also indicated a relation between bullying and anti-social behavior. Nansel et al.¹⁴ found that bullying behavior was related to violence related behaviors like weapon carrying, frequent fighting and fighting related injury. Another study found that children who bullied at a young age were more likely to get involved in a gang at a later age.¹⁷

Data provided for this study are based on self reports of children. Self reports on active bullying and delinquent behavior could lead to an under representation of problem behavior because children might be reluctant to admit such behavior. To minimize the effects of this bias children filled out the questionnaires anonymously. Research assistants administered the questionnaires under exam-like conditions so children and teachers could not see what other students filled out. However, children still might hesitate to report these socially undesirable answers. In our study this may have resulted in lower numbers of such reported behavior, and in lower associations between bullying and delinquent behavior.

Our results indicate that children who display delinquent behavior are more likely to be involved in bullying behavior at the same time, or develop new bullying behavior at a later moment. If teachers are aware of any delinquent behavior among some of their students, they should be vigilant to the possibility that these children may also be involved in bullying. Because teachers are not aware of all the bullying incidents that take place in and around their schools this may help them in their efforts to identify bullies.

Efforts to prevent bullying in schools should give special attention to those children who bully frequently. Only trying to make them stop their bullying behavior in the classroom may not be enough because their bullying is likely to be part of a broader problematic aggressive behavioral style. Teachers, parents and school health care workers should be vigilant to identify those children who are active bullies.

If serious problems with bullying or aggressive behavior are suspected, a child should be referred to a mental health professional who can screen the child for conduct problems. These frequent bullies may need individual counseling that addresses not only their bullying behavior but the underlying causes that are related to their problematic behavior. Parents should be involved in this counseling because parental style and family factors are known to be related to children's aggressive behavior.²⁻⁴

Both individual and group counseling have shown to be beneficial for anti-social and aggressive children and their families.¹⁸⁻²³ These individual efforts to help bullies to stop their aggressive behavior at an earlier age may in the long term prevent these children from developing a lifestyle of anti-social and violent behavior. Frequent bullying can therefore serve as a marker that a child is at risk for developing such a lifestyle.

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Chapter 7

Effects of anti-bullying school policy on bullying and health symptoms

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Abstract

Objective: To evaluate the effects of an anti-bullying school-policy in elementary schools.

Design: Randomized experimental-control group design

Setting: 47 schools in the Netherlands

Subjects: 3816 children from the upper three grades of elementary schools age 9-12 years.

Intervention: An anti-bullying school policy was implemented in the intervention schools.

Outcome measures: A questionnaire measuring bullying behavior, depression, psychosomatic symptoms, delinquent behavior, satisfaction with school life and peer relationships.

Results: During the first year bullying victimization decreased in the intervention group, whereas there was a small increase in the control group. Self-reported peer relationships improved at the intervention schools and there was a trend for a decrease in the reported depressive symptoms in the intervention schools in comparison with the control schools. At follow-up, one year after the end of the intervention there were no differences between intervention and control group on any of the outcome measures. Schools had also lowered their anti-bullying activities during the second study year.

Conclusions: An anti-bullying school policy can reduce bullying victimization. To keep bullying behavior at a consistently low level, schools need to continue anti-bullying measures annually.

Introduction

Bullying behavior is a form of aggressive behavior that is widespread among schoolchildren and is often characterized by repetition and an imbalance of power.¹ Bullying can take many forms such as hitting, kicking, calling names, hiding things, as well as more indirect forms such as exclusion and gossiping. One of the first large-scale studies on bullying behavior in Norway indicated that one out of seven children was bullied on a regular basis.^{2,3} Subsequent studies in several countries have also shown a substantial number of children being bullied.⁴⁻⁷

Recent studies have focused on the associations between bullying behavior and health symptoms. These studies show that children who are being bullied - and to a lesser degree also the bullies - more often have health symptoms (e.g. stomach ache, bedwetting, and sleep problems) and have higher levels of depression.^{4,8-17} Although health symptoms could precede bullying behavior by making a child more vulnerable, the stress caused by bullying is also likely to have a negative impact on depressive and health symptoms. A longitudinal study found depressive symptoms following bullying behavior.¹⁸ Other studies have found an association between bullying and suicidal thoughts^{10,19} and one study found that children who survived a suicide attempt often mentioned being bullied as one of the main stressors.²⁰

Since the 1980s anti-bullying interventions have been implemented in schools in many countries. A first large-scale intervention campaign was done in Norway and evaluated by Olweus. Results showed that schools implementing an anti-bullying policy had significant and lasting decreases in bullying behavior.^{2,21} As a result anti-bullying interventions based on the Olweus program were implemented in other countries. However, evaluations of these interventions showed mixed results, finding smaller or no effects on bullying behavior.²²⁻²⁵

In the Netherlands several anti-bullying measures have been developed to help schools to prevent and diminish bullying. In 1995 school board-, teacher- and parental organizations joined in a collaborative effort to develop a national standard anti-bullying policy for schools. This resulted in a protocol for schools to take anti-bullying measures, based on the Olweus program.²⁶

The purpose of the present study was to evaluate the effects of this anti-bullying school-policy in elementary schools. We studied effects on bullying behavior and on related outcome measures such as depressive and health symptoms. To evaluate the effects we used a randomized experimental-control group design. It was hypothesized that bullying and related health symptoms in schools with an anti-bullying policy would decrease compared with schools without an anti bullying policy.

Methods

Participating schools

To study the effect of an anti-bullying school policy the design included an intervention group and a control group (control group A). For both groups a baseline measurement and two follow-up measurements would take place. In addition to these two groups an extra control group was added to the design: control group B. This group was included in case the schools in the first control group (control group A) would start an anti-bullying school policy on their own during the first year as a result of the baseline measurement. A baseline measurement in the first control group might have an influence and could create in these control schools the urge that they need to address bullying and consequently will start an anti-bullying intervention themselves. However, this second control group would not contain any baseline measurement data and consequently be less ideal for analysis of the effects of the intervention. Therefore this group would only be included in the analyses if schools from the first control group would start their own anti-bullying policy.

A total of 200 Dutch elementary schools were approached to participate in the study. Only schools with no anti-bullying policy were asked to participate in the study. A total of 50 schools agreed to participate. For logistic reasons, only 15 schools could be allowed to participate in the intervention group. Schools were randomly assigned to either the intervention group or one of the two control groups until each of the three conditions contained 15 schools, the remaining schools were divided among the two control groups. As a result the intervention group contained 15 schools, control group A 18 schools and control group B 17 schools. However, one school from the intervention group and two schools from control group B cancelled participation after the randomization, but before any measurements had been done. Reason for cancellation was lack of time. Consequently the final number of participating schools in each group were: intervention group 14 schools; control group A 18 schools; and control group B 15 schools.

Children from the three highest grades (age 9-12 years) participated by filling out a questionnaire. The questionnaires were completed in classrooms under examination-like conditions at three moments during the study: the first and second measurements during the school year in November 1999 and May 2000, and the third measurement at the end of the follow up school year in May 2001.

Power analyses indicated that a sample size of 750 children was needed in the control and intervention group ($\alpha=0,05$; $\beta=0,20$) to detect a 4% difference in bullying victimization between intervention and control schools. Calculation of final sample

size included intra class correlation and the loss of respondents as a result of non-response and follow up.

The design of the study was approved by the Medical Ethical Committee. The parental advisory boards of the participating schools were informed about the study and gave written informed consent for participation.

Outcome measures

Bullying behavior

Primary outcome measures were a set of questions on bullying behavior. Two items were asked on general bullying behavior, i.e. “Have you been bullied during the last months?” and “Have you bullied other children during the last months?”. Children could answer both questions on a 6-point scale: ‘not bullied at all’, ‘one or two times’, ‘a few times per month’, ‘once a week’, ‘two or three times a week’, and ‘almost every day’. Items were dichotomized into bullied (‘once a week’ or more often) and not bullied (‘a few times per month’ or less often).

In addition, active and experienced bullying behavior was measured with items addressing 6 types of victimization: being called names, being excluded, being hit or kicked, things being stolen or hidden, being rumored/gossiping, and being teased.²⁷ Children were asked if they experienced or performed any of these behaviors during the last four weeks. Items were summed for both scales of active and experienced bullying behavior.

In addition to the primary outcome measures, a set of secondary outcome measures was included to study the effect of the intervention on these variables that are known to be related to bullying behavior: psychosomatic symptoms, depression, delinquent behavior, and level of school satisfaction.

Psychosomatic symptoms

Students were presented with a series of health symptoms (headache, sleep problems, skin problems, abdominal pain, feeling tense, recurring fears, feeling unhappy, crying without any reason, tense muscles, feeling tired, bad appetite, feeling listless). They were asked for each symptom to report whether they had the symptom in the last 4 weeks: never, sometimes or often. Items were summed into a scale.

Depression

Depression was evaluated with the KDVK (Short Form Depression Questionnaire for Children).²⁸ This questionnaire contains 9 items, e.g. “The last weeks I feel down”. For

each item respondents can answer if this is true or not true. All items that are answered as “true” are summed, resulting in a score of 0-9.

Delinquent behavior

Delinquent behavior was measured with a seven item scale.²⁷ Each item addressed a different form of delinquent behavior varying from “Have you destroyed or damaged public property?” to “Have you stolen something at school?” All items that were answered positively were added up.

School satisfaction

Experience of school life was measured with three scales from the Dutch ‘School experience questionnaire’,²⁹ i.e. ‘general satisfaction with school life’ (10 items; $\alpha = 0.83$; item example: “I don’t like to go to school”), ‘satisfaction of contacts with other students’ (8 items; ; $\alpha = 0.81$; item example: “I would rather be in a classroom with other children”), and ‘satisfaction of contact with the teacher’(15 items; $\alpha = 0.79$; item example: “I think my teacher teaches in a nice way”). For every item children could choose an answer from four options, e.g.. ‘always’, ‘often’, ‘sometimes’, or ‘never’. Items were added up with higher scores indicating more satisfaction.

Anti-bully activities

A questionnaire with questions regarding anti-bully activities performed during the school year was distributed among the teachers of the participating classes at the end of each year at T1 and T2.

Analyses

Multi-level regression analyses (MlwiN)³⁰ were used to calculate effects of the intervention at the end of the first and second years of the study. Three levels were included in the analyses: school, classroom, and the individual level. Outcomes were measured at the individual level, corrected for influences from a higher level, i.e. classroom and school. Baseline levels of the outcome measure and grade, gender and school size were included as covariates in the regression model. P-values were derived from a two-tailed t-distribution. Significance levels for an effect were $p < 0.05$ and for a trend $p < 0.10$.

Anti-bully program

Schools in the intervention group were assisted to develop an anti-bullying school policy during the first year of the study. At the beginning of the school year there was a meeting for school board supervisors to explain the program and create support. In

addition there was a two day training for teachers to create awareness of bullying behavior, assisting them to apply anti-bullying measures, and to give instructions on how to deal with bullying incidents among children. Schools were supplied with the booklet “Bullying in school: how to deal with it?”²⁶ which describes how a school can develop an anti-bullying policy and undertake various measures. The schools were also supplied with the “Bullying test”²⁶ a computerized questionnaire that children can fill out in the classroom anonymously and which gives the teacher an insight in the bullying behavior of the students.

Schools were asked to include in their anti-bullying school policy the core program as described by Olweus: set clear rules against bullying, have regular measurements of bullying behavior by means of a questionnaire, have a curriculum of lessons on bullying behavior and social skills, have good supervision during intermission, and inform and involve parents on the anti-bullying policy of the school.³

Results

Anti-bullying activities during the first year

The participating schools included 156 classes participating in the study during the first year of the study. A questionnaire regarding the anti-bullying activities during the first year was returned for 107 classes (response rate 69%). Teachers were asked which anti-bullying activities they had participated in during the first year of the study. Results are presented in Table 1. The majority of the teachers in the intervention group had participated in the two day anti-bullying training. The results indicate that intervention schools performed more anti-bullying activities, although not for all components of the intervention. Specifically the use of an anti-bully survey in the classrooms, and the creation of anti-bullying rules, writing these down and putting these up in the classroom, were done significantly more often in the intervention group.

At the end of the first year, 6 of the 14 schools in the intervention group had a written anti-bullying policy. One of the 18 schools in control group A had such a policy and no school in control group B had a written anti-bullying policy.

Table 1 Activities during the first year for intervention and control schools.

	Intervention group (n = 34)	Control group A (n = 37)	Control group B (n = 36)
Anti-bully training for teacher ^a	97%	0%	3%
Bullying survey ^b	71%	26%	14%
Anti-bullying rules ^c	71%	46%	27%
Use of anti-bullying curriculum	65%	51%	61%
Intensity of surveillance (mean number of teachers per group of students during recess)	0.42	0.36	0.42
Organizing information meeting on bullying for parents.	9%	5%	3%

^a ($\chi^2 = 79.55$ p < .001)

^b ($\chi^2 = 14.60$, p < .001)

^c ($\chi^2 = 14.27$, p < .001)

Anti-bullying activities during the second year

The participating schools included 113 classes participating in the study during the second year of the study. A questionnaire regarding the anti-bullying activities during this second year was returned for 105 classes (response rate 93%). Teachers were asked which anti-bullying activities they had performed during the second year of the study. Results are presented in Table 2. There was no significant difference in activities between the intervention group and the control groups.

Table 2 Activities during the second year for intervention and control schools.

	Intervention group (n = 29)	Control group A (n = 41)	Control group B (n = 35)
Bullying survey	25%	15%	9%
Anti-bullying rules	74%	59%	50%
Use of anti-bullying curriculum	41%	40%	44%
Intensity of surveillance (mean number of teachers per group of students during recess)	0.41	0.41	0.64
Organizing information meeting on bullying for parents.	4%	10%	3%

The main reasons why schools in the intervention group discontinued activities during the second year of the study were: they considered the anti-bullying activities to be a one-year project; the school had decided that another issue should get priority during the following year; or simply because there was no time to perform the activities.

Effects of anti-bullying policy

Because the majority of the schools in both control groups did not start an anti-bullying school policy during the first year control group A was used in the main effect analysis as the comparison group because this group also included a baseline measurement.

Non-response

In the intervention group and control group A, of the 2848 students from the upper three grades 2766 (97%) participated in the first measurement and 2224 (78%) participated in the second measurement of data collection. During the following school year the youngest two grades of the initial sample who were still in elementary school participated in the third measurement of data collection and 1591 children (58% of the initial total sample, 82% of the initial youngest two grades) filled out the questionnaire (see figure 1).

A total of 542 children did not participate at T2. This included 434 children in the control group (A) and 108 children in the intervention group. Main reason for non-response at the second measurement was that three schools in the control group (349 students) had no time within their curriculum for a second measurement towards the end of the school year.

Of those who participated in the first measurement (T0) but not in the second measurement (T1) a total of 15.2% (16/105) in the intervention group were bullied at T0, whereas a total of 9.7% (42/432) in the control group A were bullied at T0 ($\chi^2 = 2.67$; $p = ns$). Cohen's d-value was 0.17, which indicates that this difference can be considered small. Of those who participated in the first measurement (T0) but not in the second measurement (T1) a total of 5.7% (6/105) in the intervention group actively bullied at T0, whereas a total of 2.8% (12/429) in the control group A actively bullied at T0 ($\chi^2 = 2.20$; $p = ns$). Cohen's d-value was 0.14, which indicates that this difference can be considered small, because the value is below 0.20.

Because the non-response in the control group included 3 schools as a whole this might influence the non-response data, because bullying behavior may especially be over represented among 'individual non-responders' from participating schools. If only those non-respondents from the schools that participated in both measurements are included the numbers are for victimization 15.2% (16/105) vs. 10.6% (13/123); $\chi^2 = 1.11$; $p = ns$), and for active bullying 5.7% (6/105) vs. 3.3% (4/122); $\chi^2 = 0.80$; $p = ns$).

When all non-respondents were included, for the scale of specific bullying victimization the mean score of non-respondents of T1 at baseline measurement was 4.48 for the non-respondents from the intervention group, and 2.95 for non-respondents from the control group ($t = 1.51$; $p = ns$). Cohen's d-value was 0.16, which indicates

that this difference can be considered small. For the scale on active bullying the mean score of non-respondents of T1 at baseline measurement was 2.84 for the intervention group, and for 1.71 for the control group ($t = 1.34$; $p = ns$). Cohen's d -value for effectsize was 0.14, which indicates that this difference can be considered small.

For depression these numbers were respectively: intervention group 1.99, control group 1.96 ($t = 0.11$; $p = ns$); for psychosomatic symptoms these numbers were: intervention group 1.26, control group 1.07 ($t = 1.18$; $p = ns$); for 'delinquent behavior' intervention group 0.77, control group 0.50 ($t = 1.90$; $p = 0.059$); for 'general school satisfaction' intervention group 21.01, control group 21.0 ($t = 0.04$; $p = ns$); for 'contact with other students' intervention group 18.24, control group 18.85 ($t = -1.39$; $p = ns$); and for contact with teacher' intervention group 31.62, control group 31.73 ($t = -0.17$; $p = ns$).

A total of 1174 children did not participate at T2. This included 653 children in the control group (A) and 524 children in the intervention group. Main reason for non-response at T2 was that the oldest grade (891 children) had left the school and consequently did not participate in the third measurement.

Of those who participated in the first measurement (T0) but not in the third measurement (T2) a total of 10.0% (52/519) in the intervention group were bullied at T0, whereas a total of 8.6% (56/650) in the control group A were bullied at T0 ($\chi^2 = 0.68$; $p = ns$). Of those who participated in the first measurement (T0) but not in the third measurement (T2) a total of 2.5% (13/518) in the intervention group actively bullied at T0, whereas a total of 2.8% (18/646) in the control group A actively bullied at T0 ($\chi^2 = 0.09$; $p = ns$).

For the scale of specific bullying victimization the mean score of non-respondents of T2 at baseline measurement was 3.06 for the non-responders from the intervention group, and 2.16 for non-responders from the control group ($t = 1.91$; $p = 0.057$). For the scale on active bullying the mean score of non-respondents of T1 at baseline measurement was 1.89 for the intervention group, and for 1.47 for the control group ($t = 1.05$; $p = ns$).

For depression these numbers were respectively: intervention group 1.95, control group 1.80 ($t = 1.19$; $p = ns$); for psychosomatic symptoms these numbers were: intervention group 1.21, control group 0.97 ($t = 2.71$; $p = 0.007$); for 'delinquent behavior' intervention group 0.49, control group 0.54 ($t = -0.79$; $p = ns$); for 'general school satisfaction' intervention group 21.13, control group 20.96 ($t = 0.52$; $p = ns$); for 'contact with other students' intervention group 18.86, control group 19.31 ($t = -1.94$; $p = 0.056$); and for contact with teacher' intervention group 31.66, and control group 31.73 ($t = -0.16$; $p = ns$).

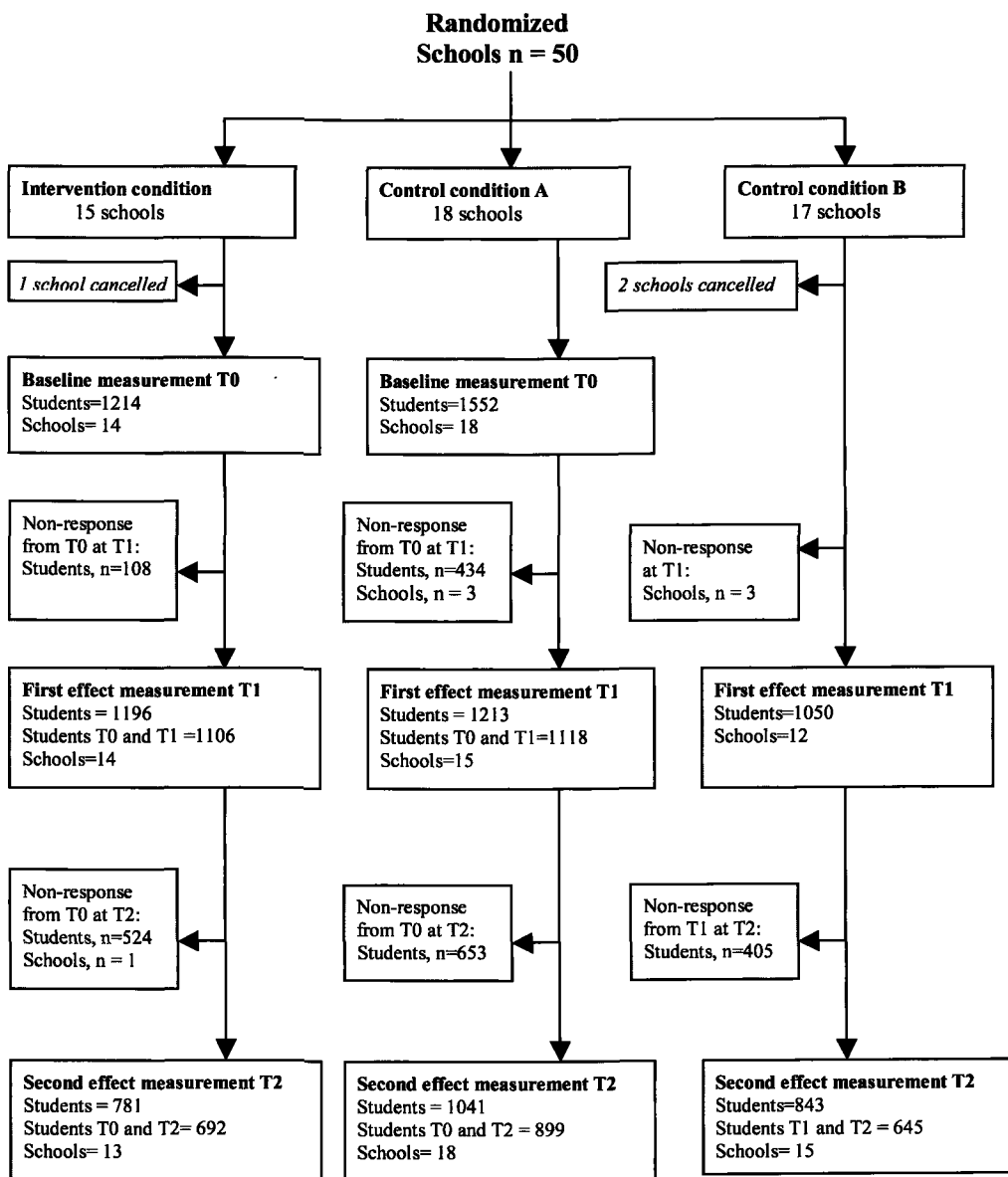


Figure 1: Participant flow and follow-up.

Initial sample

Mean age of the first wave sample was 10.1 (SD 1.1) years. The sample included 50% girls. Table 3 presents numbers on general bullying behavior in the intervention schools and the control schools.

Table 3 General bullying behavior for all students participating in each measurement.

	Intervention group	Control group A	Control group B
% Being bullied T0	10.8 (120/1106)	10.0 (111 /1115)	-
% Being bullied T1	8.8 (92/1104)	10.2 (113/1112)	10.7 (112/1043)
% Being bullied T2	7.7 (53/688)	6.5 (58/897)	8.1 (68/838)
% Active bullying T0	2.7 (30/1101)	2.3 (25/1111)	-
% Active bullying T1	3.5 (38/1098)	3.4 (33/1108)	3.9 (40/1036)
% Active bullying T2	2.8 (19/686)	3.0 (27/895)	3.7 (31/836)

Effects after the first year

For those children who participated in both measurements on T0 and T1, 10.8% of the students in the experimental group and 10.0% of the students in the control group were bullied at least once a week at the beginning of the school year. At the end of the first school year the number of bullied children dropped significantly in the experimental schools compared with the control schools. In the intervention schools the number of bullied children dropped with one fifth to 8.8% whereas the number of bullied children in the control group increased to 10.2%. Multi-level regression analyses indicated that children in the intervention group had an Odds ratio (OR) of 0.66 (95% CI: 0.46-0.94; $p < 0.05$) to be bullied at the end of the first school year when compared with the control group (Table 4).

Table 4 Logistic regression analysis for general bullying behavior in the intervention group and control group A at the end of the intervention year (intervention group: $n = 1106$; control group A: $n = 1118$).

	Odds ratio (OR)	95% CI	P-value
Being bullied			
Control group	1.00		
Intervention group	0.66	0.46 - 0.94	< 0.05
Active bullying			
Control group	1.00		
Intervention group	0.90	0.50 - 1.61	ns

Scale scores on specific bullying behavior also indicated that children in the intervention schools experienced significantly less bullying behavior (Table 5). Children also indicated less active bullying behavior. For secondary outcome measures related to bullying behavior there was a trend for lower depressive symptoms in the intervention schools compared with the control schools at the end of the first year. Children in the intervention group also indicated a higher level of satisfaction of their contacts with other students at the end of the first year (Table 5).

Table 5 Changes in bullying behavior and health symptoms at the end of the intervention year (intervention group: n = 1106; control group A: n = 1118).

	T0	T1	Change from T0 to T1	Adjusted Beta (SE)	P-value
Total scale being bullied					
Intervention	2.85	1.79	-1.06	-1,17 (0.35)	<0.01
Control	2.33	2.61	0.28		
Total scale active bullying					
Intervention	1.78	1.31	-0.47	-0.62 (0.30)	<0.05
Control	1.11	1.23	0.12		
Depression					
Intervention	2.10	1.77	-0.33	-0.16 (0.09)	<0.10
Control	1.87	1.77	-0.10		
Psychosomatic symptoms					
Intervention	1.25	1.10	-0.15	-0.12 (0.07)	ns
Control	1.08	1.06	-0.02		
Delinquent behavior					
Intervention	0.43	0.49	0.06	-0.01 (0.04)	ns
Control	0.42	0.51	0.09		
General satisfaction with school life					
Intervention	21.47	20.64	-0.83	0.43 (0.28)	ns
Control	21.29	20.18	-1.11		
Satisfaction of contact with other students					
Intervention	18.92	19.40	0.48	0.38 (0.18)	<0.05
Control	19.30	19.41	0.11		
Satisfaction of contact with teacher					
Intervention	32.06	30.26	-1.80	0.13 (0.57)	ns
Control	32.23	30.48	-1.75		

Effects after the second year

At the end of the follow-up year there were no significant differences in bullying behavior between schools in the intervention group and schools in the control group (Table 6).

Table 6 Logistic regression analysis for general bullying behavior in the intervention group and control group A at the end of the second study year (intervention group: n = 692; control group A: n = 899).

	Odds ratio (OR)	95% CI	P-value
<u>Being bullied</u>			
Control group	1.00		
Intervention group	1.09	0.65 - 1.76	ns
<u>Active bullying</u>			
Control group	1.00		
Intervention group	0.83	0.38 - 1.78	ns

There were also no differences between both groups in other outcome measures such as depression, psychosomatic symptoms and satisfaction with school life. Results are presented in Table 7.

Table 7 Changes in bullying behavior and health symptoms at the end of the second study year (intervention group: n = 692; control group A: n = 899).

	T0	T2	Change from T0 to T2	Adjusted Beta (SE)	P-value
<u>Total scale being bullied</u>					
Intervention	2.96	2.09	-0.87	0.42 (0.36)	ns
Control	2.76	1.51	-1.25		
<u>Total scale active bullying</u>					
Intervention	1.86	1.23	-0.63	-0.16 (0.34)	ns
Control	1.13	1.14	0.01		
<u>Depression</u>					
Intervention	2.19	1.64	-0.55	-0.03 (0.108)	ns
Control	1.97	1.55	-0.42		
<u>Psychosomatic symptoms</u>					
Intervention	1.28	0.88	-0.40	-0.05 (0.096)	ns
Control	1.16	0.88	-0.28		
<u>Delinquent behavior</u>					
Intervention	0.44	0.65	0.21	0.05 (0.068)	ns
Control	0.39	0.58	0.19		

(Continued)

Table 7 (continued) Changes in bullying behavior and health symptoms at the end of the second study year (intervention group: n = 692; control group A: n = 899).

	T0	T2	Change from T0 to T2	Adjusted Beta (SE)	P-value
General satisfaction with school life					
Intervention	21.65	21.26	-0.39	0.51 (0.391)	ns
Control	21.39	20.68	-0.72		
Satisfaction of contact with other students					
Intervention	18.86	19.57	0.71	0.14 (0.225)	ns
Control	19.08	19.59	0.51		
Satisfaction of contact with teacher					
Intervention	32.30	30.71	-1.59	0.33 (0.647)	ns
Control	32.37	30.73	-1.64		

Intention-to-treat analyses

Although Cohen's *d*-value for effect sizes indicated that the differences in non-response can be considered small, it would be valuable to know to which extent these differences in non-response may have influenced the outcome of the effects. Therefore we performed an intention-to-treat analysis for the primary outcome measures during the first year. For the intention-to-treat analyses the non-responders of the second measurement were included in the analyses by assigning these subjects the same value as they indicated at the baseline measurement.

Intention-to-treat analyses indicated largely similar results as the original analyses. The number of bullied students in the experimental group dropped from 11.2% to 8.9%, whereas the number of bullied students in the control group increased from 9.9% to 10.1%. (Odds ratio = 0.71 ; 95% CI: 0.50-0.99; $p < 0.05$).

For active bullying the number of bullies in the experimental group increased from 3.0% to 3.7%, whereas the number of bullies in the control group increased from 2.4% to 3.3% (Odds ratio = 0.99; 95% CI: 0.26-1.58; $p = ns$).

Intention-to-treat analyses for the scale scores on specific bullying behavior also indicated that children in the intervention schools experienced significantly less bullying behavior (Beta = -1.05, $p < 0.001$). There was a trend for less active bullying between children in the intervention schools compared with the control group (Beta = -0.48; $p < 0.10$).

Discussion

The present study evaluated the effects of an anti-bullying policy in Dutch elementary schools. The results of this randomized control study indicate that schools can reduce the number of children being bullied. For every 10 children in the control group who were bullied once a week or more often, only seven children were bullied in the intervention group at the end of the first school year. At the end of the intervention year, self-reported peer relationships improved at the intervention schools and there was a trend for a decrease in the reported depressive symptoms in the intervention schools in comparison with the control schools.

In the longer term, at the end of the second study year, there were no significant differences between the intervention and control schools in bullying behavior or associated variables such as depression and psychosomatic symptoms. An explanation might be the decline of activities and discontinuation of the anti-bullying measures of the intervention schools during the second year. Although schools were asked to continue their activities, no follow-up activities were planned for the second year, nor was any training or counseling given in the second year. This absence of support may have been an important reason for discontinuation of the activities in the second year. As a reason for the decline in activities many schools indicated that they considered the anti-bullying activities part of a one-year project.

In general, compliance in the intervention group was not high for all the components of the intervention. Especially having parents involved in the anti-bullying school policy was low. Compliance was high for attending the 2 day training for teachers, using the bullying questionnaire to establish levels of bullying behavior in the classroom, and setting clear rules against bullying in the classroom. Olweus has stated that awareness is important in combating bullying through a school based intervention program.³ It may well be that in the intervention schools the training and use of the bullying test raised the awareness for the bullying problem and made teachers more vigilant, explaining the decrease in bullying victimization in the first year in the intervention schools. This vigilance may have somewhat disappeared during the second year. An indication for this is that schools did not use the bullying test that often during the second year and teachers indicated that they perceived the bullying program as a one year project and were diverting their attention to other subjects during the second year.

Other studies have found mixed results on anti-bullying school measures. Olweus evaluated a nationally implemented anti-bully intervention in Norway and found substantial (as much as 50%) reductions of bullying victimization. However, Roland evaluated the same program in another region and found no overall effects. This

difference in results is explained by the higher level of (follow-up) counseling given to schools in Olweus study.^{31,32} Evaluation of a similar program in England reported a reduction in bullying behavior, although smaller than in Norway.^{23,24} In Belgium, positive effects of the program were found in elementary schools, but not in secondary schools.²⁵

Some strengths of our study are the randomized controlled design and the use of multi-level analyses which controls for clustering effects at group level. An adverse factor in the design was that schools in the control group did perform several anti-bullying activities.

Non-response analysis indicated that there was a higher number of children involved in bullying behavior that did not participate in the follow up measurements in the intervention schools compared with the control schools, especially at the time of the first effect measurement at the end of the first year. There are two explanations that could partially account for this difference. First, there was at the baseline measurement already a higher level of bullying behavior in the intervention schools compared with the schools in the control group. As a result a difference in baseline levels among non-responders at follow up would be a reflection of the general differences at the beginning of the study. A second explanation may be that the type of non-response at the first effect measurement differed between the intervention and the control group. In the intervention group all schools from the baseline measurement participated and therefore non-responders included only individual students who were not present at the time of the first effect measurement. Children involved in bullying behavior may be overrepresented among these 'individual' non-responders, because they are more likely to have health symptoms or be involved in problematic behavior and as a result skip school more often. The non-response in the control group existed for an extensive part of the children from 3 schools that as a whole did not participate at the first effect measurement. Results indicated that when those schools were excluded from the non-response analyses and only individual non-responders were included the differences in bullying behavior were somewhat smaller between non-responders from the intervention and the control group.

To overcome the possible risk of a selection bias, effect analyses were based on results from those children who participated in both measurements (T0 and T1 for the first effect measurement and T0 and T2 for the second effect measurement) and included baseline levels of bullying behavior to correct for initial differences between the groups.

The study was designed to measure effects in a realistic setting: not demanding too much time and effort from participating schools. An ideal setting might reveal stronger effects but these effects might not be expected with a large-scale implementation.

However, future implementation of this anti-bullying policy in elementary schools should be more extensive and include regular follow-up counseling. In the Netherlands this could be done by the municipal child health services (e.g. school doctors and school nurses) who have a legally assigned task to assist schools with their school health policies. These services could assist schools to implement anti-bully policies as well as help to detect children who are being bullied. These child health services have recently focused more on detection of psychosocial problems, including bullying.^{33,34}

It is concluded that an anti-bullying school policy can reduce bullying victimization. However, such effects disappear during the follow-up year. To keep bullying behavior at a consistently low level, schools need to continue anti-bullying measures annually. Regular follow-up counseling could help schools to continue their anti-bullying school policy.

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Chapter 8

Discussion

The research described in this thesis aimed to provide information for different settings, either health care or school settings, on the improvement of detecting and dealing with bullying behavior and preventive strategies. This final chapter provides an overview of the results and its implications for health care professionals, school professionals, and parents.

Research findings

Involvement of teachers, parents and children in bullying behavior(Chapter 2)

The results of the baseline measurement in 1999 study show that bullying is still prevalent in Dutch schools. More than 16% of the children age 9-11 years reported being bullied on a regular basis, and 5.5% reported regular active bullying during the current school term. More than a third of the bullied children did not tell their teacher or their parents that they were being bullied. When teachers knew about the bullying, they often tried to stop it, but in many cases the bullying stayed the same or even grew worse. A substantial part of the parents (40%) who knew their child was bullied regularly did not try to stop the bullying. With regard to active bullying, neither the majority of the teachers nor parents talked to the bullies about their behavior.

Association with health symptoms (Chapter 3)

The results show a strong association between being bullied and a wide range of psychosomatic symptoms and depression. Bullied children more often indicated depressive and psychosomatic symptoms compared with children not involved in bullying behavior. Odds ratios for some of the health symptoms were: headache (3.0), sleep problems (2.4), abdominal pain (3.2), bedwetting (2.9), feeling tired (3.4), depression (7.7). Children who were active bullies did not report higher levels for most psychosomatic symptoms and depression.

Longitudinal relation between bullying victimization and health symptoms (Chapter 4)

Longitudinal analysis showed that children who are being regularly bullied at the beginning of the school year had a higher risk of developing new health symptoms towards the end of the school year. Odds ratios were particularly high for the development of health problems such as depression (4.18), anxiety (3.01), bedwetting (4.71), abdominal pain (2.37), and feeling tense (3.04). The results also showed that children who were depressed or anxious at the beginning of the school year were at higher risk of becoming new bully victims later that year. Children with other health

symptoms (e.g. headache, abdominal pain, and bedwetting) did not have a higher risk of being bullied at the end of the school year.

Longitudinal development of victimization, school satisfaction and the influence of friendships (Chapter 5)

Children who were bullied at the beginning of the school year had much higher chances of being bullied later that school year, and even two years later. More than 50% of the children who were bullied at the beginning of the school year were also bullied at the end of the school year. More than 1 out of 4 of the children bullied at the beginning of the study were bullied 18 months later. Having few or no friends was also related to higher risks for victimization at the same time period, but not predictive for later victimization. Bullying behavior and having friends were related to level of school satisfaction. Children who were victimized as well as children with few or no friends indicated lower satisfaction with school life compared with children who were not bullied or children with several friends.

Active bullying and delinquent behavior (Chapter 6)

Results indicate that active bullying behavior is related to delinquent behavior. Especially frequent bullies are more often engaged in delinquent behavior during the same time period. Children who bullied frequently at the beginning of the study were more involved in delinquent behavior 18 months later (odds ratio 2.6 for 'some' delinquent behavior and odds ratio 5.1 for 'high' delinquent behavior) compared with children who did not bully. There was also a relation over time in which non-delinquent children who bullied frequently were at higher risk for developing new delinquent behavior 18 months later. This was especially the case for boys. Boys who were involved in delinquent behavior at the beginning of the study were at higher risk of becoming an active bully 18 months later.

Evaluation of the effects of an anti-bullying school-policy in elementary schools (Chapter 7)

The effect evaluation of an anti-bullying policy in elementary schools indicated that bullying victimization decreased in the intervention schools compared with the control schools during the first (intervention) year of the study. There was a trend for a decrease in depressive symptoms in the intervention schools in comparison with the control schools and a significant improvement of peer relationships at the intervention schools. At follow-up, one year after the end of the intervention there were no differences between intervention and control group on any of the outcome measures.

Methodological considerations

Data provided for this thesis are based on self reports of children. This carries a potential risk. Some children may be prone to report more problematic behavior in general and therefore some results might overstate the associations between variables such as the associations between health variables and bullying. Actual effect sizes may as a result be smaller than those found in our data.

In addition to a general bias that some children might report more complaints, it could also be that especially depressed children may have the tendency to experience things more negatively and report more often other health problems or negative experiences. In this light it should be noted that associations of depression with victimization were particularly high, as reported in chapter 3 and chapter 4.

However, the results in chapter 4 also indicate that this possible bias does not account for all the results. In chapter 4 bullying victimization is strongly related to all health variables 6 months later. Yet, not all health variables are related to bullying victimization 6 months later. Of course these analyses excluded children who indicated both victimization and health symptoms at the baseline measurement and this might particularly be the group of children where this bias is most present. Nevertheless, the results in chapter 4 indicate that there is a substantial group of children reporting either health symptoms or bullying victimization, but who do not indicate both complaints at the same time.

Self reports on bullying behavior could also lead to an under-representation of problem behavior because children might be reluctant to admit such behavior. To minimize the effects of this bias children filled out the questionnaires anonymously. Research assistants administered the questionnaires under exam-like conditions so children and teachers could not see what other students filled out.

However, children still might hesitate to report these socially undesirable conducts. In our study this may have resulted in lower numbers, especially for active bullying behavior and also delinquent behavior. This could explain the lower numbers of active bullying compared with the reported numbers on bullying victimization.

Chapters 4, 5, 6 and 7 in this thesis include longitudinal data and non-response in follow up measurement could have influenced the results. For the analysis in chapters 4, 5 and 6 there are no substantial differences in outcome variables between respondents and non-respondents on follow up measurements. In chapter 7 - the measurements of the effects of the intervention - a selective non-response could carry the potential risk of creating a bias in the results. There was indeed a higher number of children involved in bullying behavior who did not participate in the follow up measurements in the intervention schools compared with the control schools, especially

at the time of the first effect measurement at the end of the first year. There are two explanations that could partially account for this difference. First, there was at the baseline measurement already a higher level of bullying behavior in the intervention schools compared with the schools in the control group. As a result a difference in baseline levels among non-responders at follow up would be a reflection of the general differences at the beginning of the study. However, this explanation is not sufficient because some differences are larger than the initial differences between the two groups. A second explanation may be that the type of non-response at the first effect measurement differed between the intervention and the control group. In the intervention group all schools from the baseline measurement participated and therefore non-responders included only individual students who were not present at the time of the first effect measurement. Children involved in bullying behavior might be overrepresented among these 'individual' non-responders, because they are more likely to have health complaints or be involved in problematic behavior and as a result skip school more often. The non-response in the control group concerned mostly children from 3 schools. These three schools did not participate at the first effect measurement. Results indicated that when those schools were excluded from the non-response analyses and only individual non-responders were included the differences in bullying behavior were somewhat smaller between non-responders from the intervention and the control group.

To overcome the possible risk of a selection bias, effect analyses were based on results from those children who participated in both measurements (T0 and T1 for the first effect measurement and T0 and T2 for the second effect measurement) and included baseline levels of bullying behavior to correct for initial differences between the groups.

Conclusions

The following conclusions can be drawn from the analyses of these results:

- Bullying is still prevalent among elementary school children in the Netherlands.
- A substantial number of teachers and parents do not know and talk to children about their bullying behavior.
- Bullying is strongly associated with health complaints. Many health symptoms follow after an episode of bullying. Some health symptoms - such as depression and anxiety - also make a child more prone to become a target for bullying victimization.
- Bullied children are at high risk for continued victimization. Having few friends is related to victimization.
- Frequent active bullying is associated with delinquent behavior. Children - especially boys - involved in frequent bullying behavior are at higher risk of being involved in delinquent behavior at the same time and 18 months later.
- Individual counseling may be needed for those children who are involved in bullying and also display other risk factors (i.e. few friends, anxiousness, depression for victims; delinquent and anti-social behavior for bullies).
- An anti-bullying school policy is effective in lowering the number of bullied children in the short term.
- The effects of an anti-bullying school policy decrease in the absence of a continuing anti-bullying program.

Implications for health professionals

Health care professionals who work with children should recognize bullying as a behavior that may signal the presence of multiple problems and difficulties in the child's development. Bullying can be a signal of psychiatric problems (e.g. depression, conduct disorder, anxiety) and risk factors (e.g. inadequate parenting, school dysfunction, social isolation). When addressing this problem, health care professionals working with children can have several key roles.

Identifying victims and bullies and screening for co-morbidity

Victims

Health care professionals working with children and adolescents should be vigilant for possible warning signs of bullying victimization. They should intervene appropriately to minimize immediate and potential long-term effects. The health symptoms associated with bullying victimization such as, abdominal pain, bad appetite, bedwetting, anxiety, and depression, are also known to be associated with child abuse. Healthcare workers have been advised to seriously look into the possibility of child abuse when a child exhibits several of these health symptoms. Pediatricians, general practitioners, community child health professionals, school-physicians, and school nurses dealing with children with psychosomatic health symptoms or depression should also be aware of the possibility that these children are being bullied. They should ask about bullying when children and adolescents exhibit unexplained psychosomatic and behavioral symptoms; but also when a child indicates problems at school or with friends. A substantial number of children do not tell their teacher or their parents about their victimization, and it may be the health care workers who can identify those victims of bullying.

If a pattern of serious victimization is suspected, an assessment of the situation needs to be made and appropriate actions need to follow. The child needs to be screened for possible co-morbidity, such as anxiety disorder or depression, and referred to a mental health professional if such disorders occur. Because some bullied children have a behavior pattern that may ineffectively deal with bullying behavior, the child may need to be referred to a (school) psychologist to learn more appropriate social skills.

Bullies

Health care workers should also be vigilant to identify those children who are active bullies. If problems with bullying or aggressive behavior are suspected, a child should

be screened for conduct disorders and externalizing and internalizing co-morbidities. Behavior therapy and psychotherapy may be needed to help the child appropriately express and control anger. An assessment needs to be made of the parental situation to see if parents are in need of assistance in learning appropriate parental skills.

Counseling families

Because an aggressive behavioral style can begin at an early age, preventive actions should be started at home before a child enters school. Health care professionals could identify children with an aggressive behavioral pattern that are at risk to display anti-social and violent behavior at a later age.^{1,2} Studies have shown that parental use of harsh discipline and physical punishment are positively associated with more bullying and other aggressive behavior towards peers.³⁻⁵ These parents should be sensitized that their own possible aggressive behavior at home could be copied by their children.⁴

Some parents may be in need of assistance to learn more appropriate parenting skills. Several programs exist to help parents develop positive parenting skills as well as to help families deal with children who display aggressive and violent behaviors. Health care workers should discuss this option with parents, when they suspect that parents are in need of learning better parental skills.

Health care professionals could also identify children at risk at a younger age who display patterns of behavior that could make them easy targets for victimization. Parents could be informed on strategies to make their child more resilient and prevent possible later victimization. Health care workers can advise parents to give more attention to assertiveness skills when raising their child or to teach their child behavioral scripts how to handle bully incidents.

Working together with schools

School doctors, school nurses, and school psychologists who work together with school communities should encourage schools to develop an anti-bully policy. They should advocate strategies to detect those children that are involved in bullying behavior. Because teachers do not always know if children are involved in bullying behavior it is important that health care professionals communicate to schools when they have identified children who are involved in bullying behavior. Family physicians and pediatricians who don't have direct communication with schools should stress to the parents of those children the importance of informing the school and developing a plan with the school to address the specific bullying problem.

Criteria of Wilson and Jungner

Looking at the Wilson and Jungner criteria ⁶ - which cover key requirements for screening - and applying these to the situation of early detection of bullying behavior in the Netherlands, two main requirements come to mind. There should be a suitable screening instrument available and there should be a suitable treatment available. *Individual screening could be done during the regular school doctor's consultations as part of the preventive health care program of the Municipal Health Care Services (GGD).* During the past decades the focus of these visits has been shifting from just screening of physical problems to including also screening for psychosocial problems. Those children who are detected - either as victims of bullying or aggressive children - should be referred for additional diagnosis and counseling to the regional mental health services (RIAGG's). At these mental health care centers an extensive diagnose can be made and an appropriate plan for counseling can be developed. RIAGG's offer a wide variety of services including individual therapy, training in social skills and counseling of families.

However, in order to include screening for bullying behavior in the preventive child health program, effectiveness and efficiency of such a screening instrument should be established first by further studies. In view of the health effects of bullying, shown in the present study, and the apparent effectiveness of intervention programs at least in the short term, such further studies seem warranted.

Implications for parents, schools, and educators.

Schools should have a extended anti-bullying policy that follows a whole-school approach and is integrated throughout the curriculum of all grades. A whole-school approach is aimed at actively involving the whole-school community, i.e. pupils, school staff, parents, and school health care workers, in the efforts to tackle the bullying.⁷

Schools should communicate with parents on the subject of bullying

Our finding that children spoke more often to their parents than to their teachers about being bullied, stresses the importance of regular communication between parents and teachers on the subject of bullying. Schools can inform parents via newsletters on the school policy on bullying and explicitly ask parents to report to the teacher if their child is being bullied. A school can also organize an educational session on the subject of bullying and inform parents about their anti-bullying rules and policy. Teachers should also address the subject of bullying during their regular talks with the parents.

Bring bullying incidents to the fore

Many bullying incidents may go unnoticed by adults who could take actions to stop the bullying. Children could keep their bullying experiences secret because they fear retaliation of bullies if they bring it to the attention of their teacher. Efforts need to be made to educate children about the importance of reporting incidents to their teachers. Children must be assured that bullies will not be allowed to continue their abusive behavior after incidents are reported, but that the adults will take actions to stop the bullying. Schools should also use a survey with questions on bullying to reveal the level of bullying behavior.

Yearly counseling for schools to sustain anti-bullying policy

Schools need to have continued counseling to assist them with their anti-bullying policy. In the Netherlands this could be done by the Municipal Health Care Centers who have a legally assigned task to assist schools with their school health policies. Counseling should include a yearly meeting between school management and a health care worker. During such a meeting bullying incidents and the anti-bullying policy of the previous year could be evaluated. In addition the plan for the activities of the coming year should be discussed.

Clear guidelines for dealing with victims and bullies.

Schools should have a clear protocol how to deal with bullying incidents. These guidelines should include how to make an assessment of the situation, and under what circumstances other parties (e.g. parents) need to be included. Guidelines need to include when an individual child will be referred for evaluation by a mental health professional. Guidelines should include the planning of a follow up evaluation to see if the problem has been solved or if additional measures need to be taken.

Start at an early age and teach pro-social behavior

Anti-bullying and violence prevention measures should start at the onset of elementary school and should continue as part of the curriculum throughout the school years to prevent bullying and other violent behavior at a later age. From the earliest possible age children should also be taught pro-social behavior. Children should not only learn what behaviors are not appropriate, but also learn what behaviors are appreciated.

Implications for policymakers

Anti-bullying school policies are effective in decreasing bullying incidents. A broader implementation of anti-bullying school policy should be stimulated. Policymakers should consider the development of a standard for an anti-bullying school policy. Such a standard should be extensive and include strategies that have proven to be effective. Schools that implement such a policy should be recognized as applying to this specific standard.

Policymakers should also stimulate the detection of bullying problems through the health care system. It could be considered to include bullying as part of the 'standard protocol' for the detection of child abuse. Policymakers should also stimulate the implementation of parental classes helping parents to raise resilient non-aggressive children.

Prevention and detection of active bullying behavior and bullying victimization through schools, the health care system, and early parental support can help prevent or decrease related problems such as health symptoms and delinquent behavior.

Effectiveness of anti-bullying measures in other countries

The effectiveness of school-based intervention programs have been evaluated in several countries. Olweus was one of the first to develop a whole-school approach program in Norway during the 1980's. Core components of the program are implemented at the school, class and individual level and include training of the school staff, distribution of a questionnaire to measure levels of bullying, increased supervision of the playground, adoption of rules against bullying, and serious talks with children involved in bullying and their parents. Evaluation of this program found substantial (up to 50%) reductions of bullying victimization.⁸ However, Roland evaluated the same program in another region and found no overall effects. This difference in results is explained by the higher level of (follow-up) counseling given to schools in Olweus study.^{9,10}

In England, the 'Sheffield project' is offered to combat bullying, and includes a wide variety of strategies at school- class and individual level. Some strategies are similar to the Olweus program, such as the use of survey to measure bullying levels in the school. Some strategies are different for example the use of the peer-support groups to stop bullying incidents. Evaluation of the program showed a decrease in bullying victimization of 14% in primary schools and 7% secondary schools, compared with initial levels in these schools.^{11,12} The 'Sheffield project' resulted in the anti-bullying

package “Bullying. Don’t suffer in Silence”. This manual helps schools to establish a whole-school anti-bullying policy, and is free available.

In Canada, Germany and Belgium similar programs were developed and modeled after the Olweus and Sheffield programs. Evaluations of these programs showed mixed results. The Canadian study in Toronto found an increase in active bullying, but a decrease in victimization.¹³ The German study found a decrease in victimization of 17% among children age 8-16 and a decrease of active bullying by 5% among the same age group. However, there was an increase in bullying victimization (44%) and active bullying (41%) among children age 17 and 18 years old.¹⁴ In Belgium, an evaluation of anti-bullying intervention found a decrease in active bullying in primary schools, but no effects in victimization. There were also no effects in secondary schools.¹⁵

It should be noted that of those studies mentioned above, only the Belgium study included an experimental-control group design, whereas the Norwegian and German studies used an age-cohort design. The Canadian and English study used a follow-up design, with no control group.

Some strategies aimed at individual students have been evaluated. Victims of bullying can follow an assertiveness training to learn skills to withstand bullying in an appropriate way. Evaluation of assertiveness trainings have shown positive results: a stronger feeling of confidence, an increased tendency to use constructive coping strategies to solve bullying problems, and a decrease in experienced bullying.¹¹

Another strategy to help individual victims is the Support Group Approach, in which a support group for the victim is created. This group is composed of those involved in the bullying and bystanders, and this group is assigned the responsibility for solving the bullying problem. An evaluation of this method found immediate success in 80% of the cases, and delayed success in 14%.¹⁶

With regard to frequent bullies, individual counseling may be needed to address not only their bullying behavior but the underlying causes that are related to their problematic behavior. Parents should be involved in this counseling because parental style and family factors are known to be related to children’s aggressive behavior.³⁻⁵ Both individual and group counseling have shown to be beneficiary for anti-social and aggressive children and their families.¹⁷⁻²²

Future research

The conclusions and implications indicated in this chapter lead to several area's for future research:

Implementation of anti bullying policy in schools.

Teachers are busy and have indicated that they have limited time and resources to address a substantial number of different health issues. Future efforts should be directed to study those ways in which schools can integrate an anti-bullying school policy in their school in such a way that they will continue their anti-bullying activities.

Counseling schools for long term continuation of anti-bullying activities.

Future implementation of this anti-bullying policy in elementary schools should be more extensive and include regular follow-up counseling. In the Netherlands this could be done by the municipal child health services (e.g. school doctors and school nurses) who have a legally assigned task to assist schools with their school health policies. These services could assist schools to implement anti-bully policies as well as help to detect children who are being bullied. Effective ways to counsel schools to help them continue their anti-bullying activities need to be developed and evaluated.

Counseling individual students.

Those children who are involved in either a strong pattern of victimization or active bullying may need individual counseling. There are many training programs available, but for many programs there is no information on effectiveness. Randomized trials are needed to find out which programs are effective in teaching victims of bullying skills to effectively deal with bullies and prevent continued victimization. Also for active bullies available programs need to be evaluated to determine which are most effective in decreasing bullying and other aggressive behavior.

Strategies to involve bystanders

There are several strategies to mobilize the peer group to help combat bullying. Although many children are present during bullying incidents, in most cases these bystanders don't try to stop the bullying. Strategies to mobilize these bystanders to speak out against the bully and teach effective strategies to help the victim need to be evaluated.

Relationship between parents' and children's bullying experiences

There could be an intergenerational link in which parents of victimized children have experienced victimization during their own childhood years. It also could be that parents of active bullies have been bullies themselves when they were young. A similar intergenerational link is known for child abuse.

It would be worthwhile to investigate this possible intergenerational effect with regard to bullying behavior. Results could favor the arguments for early intervention and parental support in helping to break a possible cycle of bullying and victimization.

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Chapter 9

Summary

Summary

Bullying is a form of aggressive behavior characterized by repeated acts against victims who cannot easily defend themselves. Bullying can include direct physical or direct verbal attacks, but also indirect forms of aggression such as excluding others or creating rumors. Bullying behavior in schoolchildren has been studied for over 25 years, and studies in many countries have indicated that a substantial number of children are frequently bullied.

In **Chapter 1**, an introduction to the subject of bullying among schoolchildren is given. A short history on research on bullying is presented including the frequency of bullying behavior in several countries. Several anti-bullying strategies are described. The research questions for this thesis are presented and the outline of the thesis is given.

In **Chapter 2**, results are presented on bullying behavior and the involvement of teachers, parents and classmates in bullying incidents. The results in this chapter show that bullying is still prevalent in Dutch schools. More than 16% of the children age 9-11 years reported being bullied on a regular basis, and 5.5% reported repeated active bullying during the current school term. The majority of the bullied children did not tell their teacher that they were being bullied. When teachers knew about the bullying, they often tried to stop it, but in many cases the bullying stayed the same or even grew worse. With regard to active bullying, neither the majority of the teachers nor parents talked to the bullies about their behavior. The results stress the importance of regular communication between children, parents, teachers and health care professionals with regard to bullying incidents. In addition, teachers need to learn effective ways to deal with bullying incidents. Schools need to adopt a whole-school approach with their anti-bullying interventions.

In **chapter 3**, the association between bullying behavior and a wide variety of psychosomatic health symptoms and depression was studied. Three groups, i.e. bullied children, active bullies, and children who both bully and are bullied, were compared with the group of children not involved in bullying behavior. Subsequently, risks for psychosomatic symptoms and depression were calculated by means of odds ratios. Bully victims had significantly higher chances for depression and psychosomatic symptoms compared with children not involved in bullying behavior. Odds ratios: headache (3.0), sleep problems (2.4), abdominal pain (3.2), bedwetting (2.9), feeling tired (3.4), depression (7.7). Children who actively bullied did not have a higher chance for most of the investigated health symptoms. The third group involved in bullying

behavior - children who both bully and are being bullied - showed a pattern that mostly resembles the group of bullied children, i.e. a higher chance for health symptoms. However, for this group, results were not significant for all measured health symptoms, probably due to small number of children in this group.

We conclude that being bullied is strongly associated with a wide range of psychosomatic symptoms and depression. These associations are similar to the symptoms known to be associated with child abuse. Healthcare workers have been advised to seriously look into the possibility of child abuse when a child indicates several of these health symptoms. Our results show that pediatricians, general practitioners, school-physicians, and school nurses dealing with children with psychosomatic health symptoms or depression should also be aware of the possibility that these children are being bullied in order to take preventive measures.

In **Chapter 4**, we investigated the longitudinal relationship between bullying and a wide variety of health symptoms. Studies have shown that bullying victimization is associated with a substantial number of health symptoms, but it is unclear which come first. The objective was to determine whether bullying victimization precedes psychosomatic and psychosocial health symptoms, or whether these health symptoms precede bullying victimization. The results show that bully victims had significantly higher chances to develop new psychosomatic and psychosocial health problems six months later, compared with children who were not bullied. Odds ratios were as follows: depressive symptoms (4.18), anxiety (3.01), bedwetting (4.71), sleep problems (1.91), feeling tense (3.04), feeling tired (2.23), and abdominal pain (2.37). In addition, some psychosocial health symptoms also preceded bullying victimization. Children with depressive symptoms had a significantly higher chance of being newly victimized six months later (odds ratio: 3.41); this was also significant for children with anxiety (odds ratio: 1.96).

We conclude that many psychosomatic and psychosocial health problems follow an episode of bullying victimization. These findings stress the importance for doctors and health practitioners of establishing whether bullying plays a contributing role when a child displays such health symptoms. Furthermore, our results also indicate that children with depressive symptoms and anxiety are at increased risk of being victimized. Because victimization could have an adverse effect on children's attempts to cope with depression or anxiety, it is important to consider teaching these children social skills that would make them less vulnerable to bullying behavior.

Chapter 5 describes the risk in bullied children for continued victimization and the influence of friendships. In addition, this chapter describes how victimization and

friendships influence the level of school satisfaction. Children who were bullied at the beginning of the school year had much higher chances of being bullied 6 months later during the same school year (odds ratio: 8.08) , and 18 months later at the end of the next school year (odds ratio 4.17). Of the children who were bullied at the beginning of the study, about one out of four (24%) were also bullied during the two follow up measurements, i.e. 6 months later and 18 months later (odds ratio: 8.65). Having few or no friends was also related to higher risks for victimization at the same time period, but not predictive for later victimization. Bullying behavior and having friends were related to the level of school satisfaction. Children who were bullied as well as children with few or no friends indicated lower satisfaction with school life compared with children who were not bullied or those who had several friends.

The results show that children with few friends are bullied more often, and that a substantial number of children are subject to continued bully victimization. Anti-bully intervention or prevention strategies should therefore be directed at these particular students. Not only are bullied children with few friends at high risk for continued victimization, but they also have the lowest satisfaction with school life. Teachers, parents and health care professionals dealing with children should be vigilant for possible signs of bullying victimization and related characteristics such as having few friends. Once identified, these children may be instructed on how to better their social skills and how to handle bullying incidents.

Although active bullying behavior can be considered as an aggressiveness problem on its own, it may be a sign of a more general developmental problem. In **Chapter 6** we investigated the longitudinal relationship between bullying and delinquent behavior. Results show that active bullying behavior was strongly related to delinquent behavior. In particular children who bullied frequently were more often engaged in delinquent behavior, not only during the same time period, but also 18 months later (odds ratio 2.55 for 'some' delinquent behavior and odds ratio 5.06 for 'high' delinquent behavior). Furthermore, non-delinquent boys who bullied frequently had higher chances for developing delinquent behavior 18 months later (odds ratio: 4.47). We also found that non-bullying boys who were involved in delinquent behavior were at higher risk of becoming an active bully 18 months later (odds ratio: 3.21).

Efforts to prevent bullying in schools should give special attention to those children who bully frequently because their bullying may be part of a broader behavioral problem. Efforts to help bullies stop their aggressive behavior at an earlier age may in the long term prevent these children from developing a lifestyle of anti-social behavior at a later age. Frequent bullying can therefore serve as a marker that a child is at risk for developing such a lifestyle.

In **Chapter 7**, results are presented on the evaluation of the effects of an anti-bullying school-policy in elementary schools. An anti-bullying school policy was implemented in a group of schools as part of a randomized experimental-control group design. The results show that during the first year of the study bullying victimization decreased in the intervention group, whereas there was a small increase in the control group. For every 10 children in the control group who were bullied once a week or more often, only seven children were bullied in the intervention group at the end of the first school year. There was a trend for a decrease in depressive symptoms in the intervention schools in comparison with the control schools and also a trend for improved peer relationships at the intervention schools. At follow-up, one year after the end of the intervention, there were no differences between intervention and control group on any of the outcome measures. There was a decline of the anti-bullying measures in the intervention schools during the second year, which may explain the absence of effects during the second year.

It is concluded that an anti-bullying school policy can reduce bullying victimization. To keep bullying behavior at a consistently low level, schools need to continue anti-bullying measures annually.

In **Chapter 8**, several themes from the previous chapters are discussed. Some methodological considerations are discussed on the effects of non-response and use of self reported data. Implications for health professionals, parents, schools, and educators are discussed. Health care professionals who work with children should recognize bullying as a behavior that may signal the presence of multiple problems and difficulties in a child's development. In addition, health care workers who work together with school communities should encourage schools to develop an anti-bully policy. Schools should have a extended anti-bullying policy that follows a whole-school approach and is integrated throughout the curriculum of all grades. Some area's for future research are discussed in the end, including studying implementation aspects of anti-bullying measures in schools, and evaluating the effectiveness of strategies to help individual victims of bullying.

Chapter 10

Samenvatting

Samenvatting

Pesten is een vorm van agressief gedrag dat wordt gekenmerkt door herhaalde handelingen tegenover een slachtoffer dat zichzelf niet makkelijk kan verdedigen. Pesten kan bestaan uit directe lichamelijk of verbale aantijgingen, maar omvat ook andere vormen van agressie zoals het uitsluiten van anderen of roddelen. Gedurende meer dan 25 jaar is onderzoek naar pestgedrag onder schoolkinderen uitgevoerd, en onderzoek in veel landen heeft aangetoond dat een substantieel deel van de kinderen regelmatig wordt gepest.

In **Hoofdstuk 1** wordt een inleiding over het onderwerp pesten gegeven. Een korte geschiedenis over het onderzoek naar pesten wordt beschreven en de frequenties van pestgedrag in verschillende landen wordt weergegeven. Verschillende anti-pest maatregelen worden beschreven. Ten slotte worden de vraagstellingen voor dit proefschrift en een uiteenzetting van dit proefschrift gegeven.

In **Hoofdstuk 2** worden de resultaten weergegeven over pestgedrag en de betrokkenheid van leerkrachten, ouders, en klasgenoten rondom pestincidenten. De resultaten in dit hoofdstuk laten zien dat pestgedrag nog steeds prevalent is op Nederlandse scholen. Meer dan 16% van de kinderen van 9-11 jaar gaf aan regelmatig te worden gepest, en 5.5% gaf aan regelmatig zelf actief te pesten gedurende de voorgaande maanden. De meerderheid van de gepeste kinderen vertelde niet aan hun leerkracht dat zij werden gepest. Als leerkrachten eenmaal wisten dat er werd gepest probeerden zij dit meestal te stoppen, maar in veel gevallen bleef het pestgedrag aanwezig of verergerde het zelfs. Met betrekking tot actieve pesters sprak slechts een minderheid van de leerkrachten en ouders met de pesters over hun gedrag.

De resultaten benadrukken het belang van regulier overleg tussen kinderen, ouders, leerkrachten en gezondheidszorg medewerkers met betrekking tot pestgedrag. Verder is het van belang dat leerkrachten op effectieve wijze leren om gaan met pestincidenten. Ten slotte is het van belang dat scholen een veelomvattend anti-pest beleid op school hebben.

In **Hoofdstuk 3** wordt de associatie tussen pestgedrag en een groot aantal psychosomatische gezondheidsklachten en depressie onderzocht. Drie groepen, namelijk gepeste kinderen, actieve pesters, en kinderen die zowel pesten als gepest worden, zijn vergeleken met de groep kinderen die niet betrokken waren bij pestgedrag. Vervolgens zijn de risico's op psychosomatische gezondheidsklachten en depressie berekend met behulp van odds ratio's. Gepeste kinderen hadden een

significant grotere kans op depressie en psychosomatische klachten in vergelijking met kinderen die niet betrokken waren bij pestgedrag. Odds ratios waren : hoofdpijn (3.0), slaapproblemen (2.4), buikpijn (3.2), bedplassen (2.9), vermoeidheid (3.4), en depressie (7.7). Kinderen die actief pestten hadden geen grotere kans voor de meeste gezondheidsklachten die werden onderzocht. De derde groep - de kinderen die zowel actief pestten als gepest werden - vertoonde een patroon dat grotendeels gelijk was aan de groep gepeste kinderen, namelijk een grotere kans op gezondheidsklachten.. Voor deze derde groep waren niet alle resultaten significant, waarschijnlijk ten gevolge van kleine aantallen in deze groep.

De conclusie is dat gepest worden sterk samenhangt met een groot aantal psychosomatische klachten en met depressie. Deze associaties zijn vergelijkbaar met de klachten die samenhangen met kindermishandeling. Gezondheidszorgmedewerkers is geadviseerd om serieus de mogelijke aanwezigheid van kindermishandeling te onderzoeken indien een kind dergelijke klachten vertoont. Onze resultaten laten zien dat kinderartsen, huisartsen, schoolartsen, en schoolverpleegkundigen die te maken krijgen met kinderen met psychosomatische klachten of depressie ook alert moeten zijn op de mogelijkheid dat deze betreffende kinderen gepest worden. Bij vaststelling van gepest worden kunnen zij vervolgens adequate maatregelen treffen.

In **Hoofdstuk 4** onderzochten we de longitudinale relatie tussen gepest worden en een groot aantal gezondheidsklachten. Onderzoek heeft aangetoond dat gepest worden samenhangt met een substantieel aantal gezondheidsklachten. Doel van de huidige studie was om na te gaan of gepest worden voorafgaat aan de gezondheidsklachten, of dat de gezondheidsklachten vooraf gaan aan gepest worden. De resultaten laten zien dat gepeste kinderen een significant grotere kans hadden om zes maanden later nieuwe psychosomatische en psychosociale klachten te ontwikkelen in vergelijking met kinderen die niet werden gepest. Odds ratio's waren als volgt: depressieve klachten (4.18), angst (3.01), bedplassen (4.71), slaapproblemen (1.91), gespannenheid (3.04), vermoeidheid (2.23), en buikpijn (2.37).

Daarnaast bleek dat een aantal psychosociale klachten ook vooraf ging aan gepest worden. Kinderen met depressieve klachten hadden een significant grotere kans om vervolgens gepest te worden op de meting 6 maanden later (Odds ratio 3.41), dit was ook significant voor angstige kinderen (odds ratio 1.96).

De conclusie is dat veel psychosomatische en psychosociale gezondheidsklachten volgen na een periode van gepest worden. Deze bevinding benadrukt het belang voor artsen en gezondheidszorgmedewerkers om na te gaan of pesten een bijdragende factor is in het geval een kind dergelijke klachten aangeeft. Verder laten onze resultaten zien dat angstige en depressieve kinderen een groter risico lopen om vervolgens ook gepest

te worden. Omdat gepest worden een nadelig effect kan hebben op de pogingen van kinderen om te gaan met hun angst of depressie, dient overwogen te worden om deze kinderen sociale vaardigheden te leren die hen weerbaarder maken tegen pestgedrag.

In **Hoofdstuk 5** wordt ingegaan op het risico voor gepeste kinderen om op latere momenten nog steeds gepest te worden en de invloed daarbij van het al dan niet hebben van vrienden. Daarnaast wordt in dit hoofdstuk ingegaan op de invloed van gepest worden en het hebben van vrienden op de schoolbeleving. Kinderen die gepest worden aan het begin van het schooljaar hebben een veel grotere kans om 6 maanden later gedurende datzelfde schooljaar wederom gepest te worden (odds ratio: 8.08), en 18 maanden later aan het eind van het volgende schooljaar (odds ratio: 4.17). Van de kinderen die werden gepest aan het begin van het eerste schooljaar van het onderzoek werd één op de vier (24%) ook gepest gedurende beide vervolg meetmomenten, respectievelijk 6 maanden en 18 maanden later (odds ratio: 8.65). Het hebben van weinig of geen vrienden was gerelateerd aan een grotere kans om gepest te worden gedurende dezelfde periode, maar hing niet samen met een grotere kans om op een later tijdstip gepest te worden. Pestgedrag en het hebben van vrienden was ook gerelateerd aan de schoolbeleving. Zowel kinderen die werden gepest als kinderen met weinig of geen vrienden gaven een lagere schoolbeleving aan dan kinderen die niet werden gepest of die veel vrienden hadden.

De resultaten laten zien dat kinderen met weinig vrienden vaker worden gepest, en dat een substantieel deel van de kinderen gedurende langere perioden continu gepest wordt. Anti-pestactieveiten en preventie strategieën moeten zich daarom ook op individuele leerlingen richten in aanvulling op meer algemene anti-pestmaatregelen. Vooral de kinderen die frequent worden gepest en die weinig vrienden hebben, behoeven individuele hulp. Zij zijn niet alleen de groep met de grootste kans om continue gepest te worden, maar ook de groep met de laagste schoolbeleving. Leerkrachten, maar ook ouders en gezondheidszorgmedewerkers die te maken hebben met kinderen dienen oplettend te zijn voor de mogelijke tekenen dat een kind gepest wordt en voor samenhangende kenmerken zoals het hebben van weinig vrienden. Overwogen kan worden om kinderen te trainen in sociale vaardigheden die hen helpen beter om te gaan met pestincidenten en in vaardigheden om sociale contacten te leggen en vrienden te maken.

Alhoewel actief pesten kan worden gezien als een op zichzelf staand agressie probleem zou het ook een teken kunnen zijn van een meer problematische ontwikkeling. In **Hoofdstuk 6** onderzochten we in een longitudinale studie de relatie tussen actief pesten en delinquent gedrag. De resultaten laten zien dat actief pesten sterk samenhangt

met delinquent gedrag. Vooral frequente pesters waren veel vaker betrokken bij delinquente gedragingen, niet alleen gedurende dezelfde meetperiode, maar ook 18 maanden later (odds ratio 2.55 voor 'matig' delinquent gedrag en odds ratio 5.06 voor 'veel' delinquent gedrag). Niet-delinquente jongens die vaak actief pestten hadden bovendien een grotere kans om 18 maanden later delinquent gedrag te ontwikkelen. (odds ratio: 4.47). Verder bleek ook dat delinquente jongens die niet actief pestten een grotere kans hadden om 18 maanden later een actieve pester te worden (odds ratio: 3.21).

Bij pogingen om pesten te verminderen op scholen dient speciale aandacht gegeven te worden aan de kinderen die frequent actief pesten aangezien dergelijk pestgedrag onderdeel kan zijn van een bredere problematische agressieve gedragsstijl. Pogingen om actieve pesters te helpen bij het stoppen van hun agressieve gedrag op jonge leeftijd kunnen mogelijk voorkomen dat deze kinderen op latere leeftijd een levensstijl van anti-sociaal gedrag ontwikkelen. Frequent actief pestgedrag kan daarbij dienen als een signaal dat een kind risico loopt om een dergelijke gedragsstijl te ontwikkelen

In **Hoofdstuk 7** worden de resultaten gepresenteerd van de evaluatie van de effecten van een anti-pest beleid op basisscholen. Een anti-pestbeleid werd geïmplementeerd op een groep scholen als onderdeel van een gerandomiseerd experimenteel-controle groep design. De resultaten laten zien dat gedurende het eerste jaar het aantal gepeste kinderen afnam in de interventiegroep, terwijl er een kleine toename was van gepeste kinderen in de controlegroep. Voor elke 10 kinderen in de controlegroep die één keer per week of vaker werden gepest aan het einde van het eerste schooljaar, werden slechts zeven kinderen gepest op de interventiescholen. Er was een trend voor een afname van depressieve klachten op de interventiescholen in vergelijking met de controlescholen, en er was een trend voor betere omgang tussen klasgenoten op de interventiescholen. Bij de follow-up, een jaar na de beëindiging van de interventie waren er geen verschillen tussen de interventie en de controlescholen op de verschillende uitkomstmaten. Een mogelijke verklaring hiervoor is de afname van de anti-pestactiviteiten op de interventiescholen gedurende het tweede jaar van het onderzoek.

De conclusie is dat een anti-pestbeleid op scholen kan bijdragen aan het verminderen van het aantal gepeste kinderen. Scholen dienen echter wel jaarlijks hun anti-pestactiviteiten te continueren om het pestgedrag blijvend te verminderen.

In **Hoofdstuk 8** worden de resultaten uit de voorgaande hoofdstukken bediscussieerd. Enkele methodologische overwegingen worden besproken met betrekking tot de mogelijke invloed van non-respons en het gebruik van gegevens verkregen via zelf rapportage vragenlijsten. Gevolgtrekkingen voor gezondheidszorgmedewerkers, ouders, scholen, en docenten worden bediscussieerd. Gezondheidszorgmedewerkers dienen alert te zijn dat pesten een signaal kan zijn voor de aanwezigheid van andere gezondheidsproblemen en problemen in de ontwikkeling van het betreffende kind. Verder dienen gezondheidszorgmedewerkers die samenwerken met scholen deze scholen aan te sporen om een anti-pestbeleid op te zetten en te onderhouden. Scholen dienen een anti-pestbeleid te hebben dat de zogenaamde ‘whole-school’ benadering volgt en dat is geïntegreerd in het curriculum voor alle groepen. Een aantal gebieden voor toekomstig onderzoek worden besproken aan het eind van dit hoofdstuk, o.a. het onderzoeken van implementatieaspecten van anti-pestmaatregelen op scholen, en het evalueren van strategieën die gericht zijn op het helpen van individuele leerlingen die gepest worden.

Curriculum Vitae

Minne Fekkes was born on May 6th, 1971 in Amsterdam, the Netherlands. He attended high school at the Montessori Lyceum in Amsterdam, and passed his exam in 1989. In 1989 he started studying History at the University of Amsterdam, and one year later he also started studying Psychology at the same university. In 1991 he passed his Propedeutics exams both in History and in Psychology. He continued his studies in Psychology, specializing in Social Psychology. He finished his Psychology study doing his internship at TNO Prevention and Health in Leiden from February 1994 until August 1995, with an evaluation study of a 'Down's Syndrome Team'. In September 1995 he graduated *Cum Laude* for his Masters Degree in Social Psychology.

From September 1995 till present he works for TNO Prevention and Health in Leiden (currently TNO Quality of Life, Business Unit Child Health, Prevention, and Physical Activity). His research involves the domain of public health, specializing in youth healthcare and school health issues. He has been involved in various studies, including the evaluation of school based interventions, and the development of instruments to measure both the quality of life among children and the health of elementary school populations.

He currently lives in San Francisco, USA.

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