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Chapter 2

Teacher characteristics and peer victimization in elementary schools: A classroom-level perspective

Abstract

The purpose of this study was to investigate whether there was an association between teacher characteristics and peer victimization in elementary schools. We used data of 3,385 elementary school students (*M* age=9.8) and 139 of their teachers (*M* age=43.9) and employed Poisson regression analyses to explain the classroom victimization rate. Results showed a higher victimization rate in the classrooms of teachers who attributed bullying to external factors—factors outside of their control. In addition, the results suggest that both teachers' perceived ability to handle bullying among students and teachers' own bullying history were positively associated with the classroom victimization rate. We also took into account classroom composition characteristics and found lower victimization rates in multi-grade classrooms and in classrooms with older students. The results support the notion of an association between teacher characteristics and peer victimization. Findings are discussed with regards to current literature and suggestions for future research are made.

2.1 Introduction

Classrooms differ from each other in the prevalence of bullying; several studies showed that a considerable amount of the variance in bullying can be attributed to differences between classrooms (Kärnä, Voeten, Poskiparta & Salmivalli, 2010; Khoury-Kassabri, 2011; Salmivalli, 2010). In the present study we examined whether and how teacher characteristics were associated with classroom differences in peer victimization. Teachers are important actors within the classroom context as they spend many hours per day with their students and are responsible for and in control of the events taking place during school hours. Research suggests that teachers also play an important role in preventing and reducing bullying (Kochenderfer-Ladd & Pelletier, 2008; Yoneyama & Naito, 2003), but up till now it has remained unclear how teachers' characteristics relate to the prevalence of peer victimization in their classrooms. In a few studies teachers' attitudes to and perceptions of bullying were examined, but to our knowledge in none of these studies an explicit link with the victimization rates in their classrooms was made. In the present study, we took an explorative stance and examined the relationship between teacher characteristics and the classroom victimization rate in a sample of elementary schools in the Netherlands. More specifically, we focused on teachers' beliefs on the causes of bullying, their self-perceived ability to handle bullying among students, their personal bullying and victimization history, and their teaching experience.

Next to scientific relevance, our study may have practical implications for teachers and anti-bullying interventions. Insights from this study may improve anti-bullying interventions by explicitly taking into account teacher characteristics. Moreover, this study's results may prove useful to teachers themselves in underlining their role in addressing bullying in the classroom.

2.1.1 Teacher characteristics and peer victimization

Teachers' beliefs, perceptions, attitudes, and thoughts affect how they interact with their students (Poulou & Norwich, 2002). We argue that teachers' beliefs on the causes of bullying are likely to affect how they feel about the occurrence of bullying in their classrooms and whether or not they will intervene in bullying episodes among their students. In order to understand why students behave in problematic ways, teachers tend to make inferences on the causes of this behavior (Miller, 1995). In general, teachers may take two broad viewpoints with respect to students' problematic behavior: they either attribute it to factors within teachers' control (i.e., internal causes) or to factors outside teachers' control (i.e., external causes) (Van Hattum, 1997; Weiner, 1980).

Weiner's attribution theory (1980) postulates that individuals' perceptions on the causes of problematic situations determine whether or not they eventually will intervene. We believe that Weiner's theory can be used to shed more light on whether teachers will

intervene in bullying episodes in their classrooms and with how much effort, persistence, and intensity they will do so. We argue that teachers who attribute bullying mostly to external causes—and who thus believe that bullying is caused by factors that cannot easily be influenced by them—will be unlikely to successfully intervene in bullying episodes in their classrooms. Teachers who attribute bullying to external causes are likely to believe that their intervention will not make a large difference, that they do not have much influence on bullying, and that handling bullying is not their responsibility (Van Hattum, 1997). By contrast, teachers who ascribe bullying to internal factors are more likely to perceive the problem as remediable, feel a higher responsibility, and will be more committed to stop the bullying. Consequently, we expected a lower victimization rate in classrooms of teachers who attributed bullying to internal causes than in classrooms of teachers who attributed bullying to external causes.

Next to teachers' causal beliefs, their self-perceived ability to handle bullying among students is likely to affect the prevalence of bullying in their classrooms. Bandura (1982, 1997) argued that individuals' sense of personal efficacy is an important determinant for their thoughts, behavior, and emotions. In line with this, Poulou and Norwich (2002, p. 117) argued that it is essential to take teachers' estimations about their abilities to reach certain outcomes into account when studying their behavior. The extent to which teachers believe they are able to handle bullying among students is likely to affect whether and how teachers will intervene in bullying episodes in their classrooms. In order to effectively prevent and reduce bullying, teachers do not only need to believe that they can affect the bullying, but they also need to feel confident about their ability to do so (Boulton, 1997). Put differently, teachers should believe that their actions can contribute to a better situation in their classrooms and they also need to feel that they are able to take these actions (Stanovich & Jordan, 1998).

Teachers who perceive that they are unable to handle bullying might fail to effectively counteract bullying for two reasons. The first reason is that it indeed could be that they are not skilled and/or experienced enough and that they consequently are not able to intervene effectively. In these cases, teachers' self-perceived abilities accurately reflect their actual abilities. A second reason for why teachers who perceive that they are unable to handle bullying among their students can fail to effectively stop bullying is that their negative self-beliefs keep them from intervening at all. Teachers who believe that they are unable to handle bullying, regardless of whether these beliefs are accurate or not, are less likely to actually intervene (Yoon, 2004). Therefore, we expected a higher victimization rate in classrooms of teachers who perceived that they were unable to handle bullying than in classrooms of teachers who perceived that they were able to handle bullying.

In addition, we argue that teachers who perceive that they are able to handle bullying among their students are more likely to intervene in bullying situations when they attribute bullying to internal causes than when they attribute bullying to external causes. Accordingly, we hypothesized that the negative relationship between internal causal attribution and the classroom victimization rate was stronger for teachers who perceived

that they were able to handle bullying.

A third teacher characteristic that is possibly associated with bullying, but has received scant attention in previous studies, are the teachers' personal history of bullying and victimization. Teachers who have a history of bullying others may have learned that bullying is an effective strategy to become popular (Sijtsema et al., 2009; Veenstra et al., 2007). These teachers have learned to achieve social success via antisocial ways and may continue these status-acquiring strategies in adulthood. Teachers who have a history of bullying others might have permissive attitudes towards bullying and perceive it as something that is part of growing up rather than as harmful behavior. Previous research suggests that when teachers consider bullying as typical childhood behavior without serious ramifications they are less likely to intervene in bullying episodes in their classrooms (Mishna et al., 2005; Sairanen & Pfeffer, 2011). In addition, teachers function as role models for their students (Poulou & Norwich, 2002). Teachers who have permissive attitudes towards bullying—or even give negative verbal and nonverbal reactions to victims—might model negative interactions and set a poor example for their students. Therefore, we expected a higher victimization rate in classrooms of teachers who had a personal history of bullying than in classrooms of teachers who never bullied others.

By contrast, teachers who have a history of being victimized are more likely to perceive bullying as harmful behavior and feel sympathy towards victims. These teachers might be more determined to prevent their students from having similar negative experiences than teachers who were never victimized (Kokko & Pörhölä, 2009). Mishna and colleagues (2005) conducted interviews among 13 teachers who were victimized by their peers as a child and concluded that these teachers felt that this experience made them more sensitive and motivated to recognize and reduce bullying.

Teachers who have a history of victimization might not only be more committed to counteract bullying, they might also be better able to identify it. Bullies often behave strategically and only harass others when teachers are absent, for example after school, or when it is particularly difficult to keep an eye on all students, such as at playgrounds during breaks (Craig & Pepler, 1997). This makes it difficult for teachers to witness bullying. We expect that teachers who have a personal history of being victimized are—because of their own experience as a victim—more aware of the hidden nature of bullying and consequently are more inclined to sense bullying among their students. Therefore, we expected a lower victimization rate in classrooms of teachers who had a history of being victimized than in classrooms of teachers who had never been victimized.

Finally, teachers' work experience might affect the prevalence of bullying in their classrooms (Borg & Falzon, 1990). Van Hattum (1997) argued that teachers who recently started their careers still need to develop a teaching routine and have less experience in handling bullying than teachers who have more teaching experience. She argued that experienced teachers are more likely to have encountered several bullying situations and through the years have learned to effectively react to bullying episodes in their classrooms. However, other scholars have argued the opposite; they argued that there is more bullying

in classrooms of more experienced teachers than in classrooms of less experienced teachers because experienced teachers in general have a stronger tendency to accept students' misbehavior than junior teachers (Borg & Falzon, 1990; Ramasut & Papatheodorou, 1994; Sairanen & Pfeffer, 2011). It seems plausible that more experienced teachers became used to students' problematic behavior, that they perceive it as normal, and therefore feel less inclined to stop this behavior than teachers who just started their careers. In line with this, Boulton (1997) found that teachers who have more teaching experience have less positive attitudes towards victims. Based on these previous studies, the direction of a possible relationship between teachers' work experience and the victimization rate in their classrooms is hard to anticipate. For this reason, no directed hypothesis was formulated.

2.2 Method

2.2.1 Sample and procedure

In the current study, we used the first wave (pre-test) data collected amongst students and teachers who were part of the evaluation of the Dutch version of the KiVa anti-bullying program. The KiVa program is developed in Finland (e.g., Kärnä et al., 2011) and aims to prevent and reduce bullying in elementary schools. KiVa is currently being implemented and tested in several countries, including the Netherlands.

The school year in the Netherlands ranges from the end of August to the beginning of July. In the fall of 2011 all 6,966 regular Dutch elementary schools (Statistics Netherlands, 2012) received an invitation to participate in the KiVa program. The 99 schools that were willing to volunteer were randomly assigned to either the control condition (33 schools, no intervention) or to one of the two intervention conditions (i.e., 34 schools KiVa intervention and 32 schools KiVa + intervention).

Students of both control and intervention schools filled in web-based questionnaires in their schools' computer labs during regular school hours prior to the implementation of the KiVa intervention in May 2012. Before the actual data collection, the questionnaire was tested in a pilot study in order to make sure that the students would understand all of the questions. Classroom teachers distributed individual passwords to their students, which could be used to access the questionnaire. Students read all questions by themselves; difficult topics were explained in instructional videos. In these videos a professional actress explained the questions in such a way that all students would understand them (e.g., by talking slowly and articulating words clearly). Classroom teachers were present to answer questions and to assist students when necessary. Teachers were supplied with detailed instructions before the data collection started and were encouraged to help students in such a way that it would not affect their answers (e.g., by asking them questions such as "Which words are unclear to you?"). The order of questions and scales was randomized to assure that this would not influence the results.

Schools sent permission forms to students' parents before data were collected. Parents who wished to keep their children from participating were requested to return the form to the school. Students who did not receive parental permission, or did not want to participate, or who were unable to fill in the questionnaire did not participate (1.5%). The main reason for this high response rate was due to the data being collected online and teachers' involvement in monitoring their students' participation. Moreover, students who were not present during the scheduled day of data collection could participate at any other point in time that suited the school within a month.

The target groups for data collection were students in grades 2-5 of Dutch elementary schools (age: 7-10). However, a substantial part of the classrooms in our data contained more than one grade. In order to collect data of complete classrooms, students in grades 1 and 6 of these classrooms filled in the questionnaire as well. In total 9,403 students (grades 1-6) in 462 classrooms of 99 schools participated in the first wave of data collection. About 0.3% of the participating students were in grade 1, 23.9% in grade 2, 25.3% in grade 3, 24.8% in grade 4, 24.7% in grade 5, and 0.9% in grade 6.

The student data were matched with data collected among the students' teachers. Teachers of intervention schools were invited to a training session. During the first day of the training session they filled out a short paper/pencil questionnaire. 201 questionnaires were filled out in total, 169 of which were filled out by teachers. The remaining 32 questionnaires belonged to school personnel that did not teach (e.g., school counselors) and were not used in the analyses. The response rate of the teachers was 91.4%: of the 185 teachers who attended the training 169 filled out a questionnaire. The questions were answered prior to the intervention and before the actual training session started in order to assure that the new knowledge would not affect the answers. Data of 159 teachers could be successfully matched with student data. The remaining ten teachers taught in grades where no data were collected in the school year between 2011 and 2012.

In the combined sample, 20 classrooms had two teachers. This means that 40 teachers shared a classroom. We handled this cross-nesting by randomly deleting one teacher per pair. To ensure that this selection did not lead to biased results, two datasets were constructed from one half of each paired teacher. Both datasets were analyzed, but no substantive differences in the results were found. In one classroom there were three teachers. This classroom was not included in the analyses.

The final dataset contained data from two sources (3,385 students and 139 teachers) and consisted of 146 observations (i.e., classrooms). The mean classroom size was 23.2 students (*SD*=5.8, range 9-42) and about 33.6% of the classrooms were containing students of more than one grade. As to be expected, most teachers (120 out of 139) were female and native Dutch (only 4 had a non-Dutch ethnic background). Teachers varied strongly in age, ranging from 25 to 63 years. The mean age was 43.9 (*SD*=11.9).

Schools from all of the Dutch provinces were represented in our sample, from rural to suburban and urban areas. There were, however, relatively more schools from the northern provinces, of which 48.4% were located in either Groningen or Friesland. This

over-representation of Northern schools is most likely due to the fact that the Dutch version of the KiVa anti-bullying program is implemented and tested by the University of Groningen, the largest city in the North of the Netherlands. About 45.7% of the schools in our sample had a Christian background, 54.3% offered non-religious education. In the Netherlands 62% of the schools have a Christian denomination (Statistics Netherlands, 2012). The mean number of students per school in our sample was 215.2 (*SD*=172.9), which is close to the mean number of students in Dutch elementary schools of 218 (Statistics Netherlands, 2012).

In the sample with both teachers and students the percentage of students who were bullied at least twice a month was 31.8%. This is slightly higher than the 28% of bullied students (ages 8-12) found by Zeijl et al. (2005, p.42). However, a recent study (Verlinden et al., 2014) among elementary school students in grades 1-2 suggested a slightly higher prevalence of victimization (38.7% was bullied verbally, 39.1% physically and 38.5% was bullied in a relational way). When interpreting the results, it should be kept in mind that it is plausible that schools with a higher prevalence of bullying were more interested in participating in the study than schools with a lower prevalence.

2.2.2 Measurements

2.2.2.1 Response variable

The global victimization item of the Revised Olweus Bully/Victim questionnaire (Olweus, 1996) was used to measure how often students were victimized. Before the participating students answered questions, they watched an instructional video in which was explained what bullying is (see Appendix A for a transcript). In the video, the systematic and intentional nature of bullying was emphasized (Olweus, 1993). Moreover, it was explained— in line with Olweus' (1993) definition of bullying—that for children who are bullied it is difficult to defend themselves. In the video students were told that bullying is something that occurs between two children and not between, for example, a teacher and a student. Directly after watching the instructional video students read and answered the following question: "Now that you know what bullying is, how often have you been bullied since Christmas?" (0=it did not happen; 1=once or twice; 2=two or three times a month; 3=about once a week; 4=several times per week).

In line with earlier studies, students were defined as victims when they indicated that they were being victimized at least twice a month by their peers (Solberg & Olweus, 2003). Based on this cut-off, a count variable that reflected the number of victims per classroom was constructed. In larger classrooms there is a higher chance to observe victims and the number of students per classroom was used as an offset to account for these opportunity differences, transforming our response variable into the classroom victimization rate. In the analyses section we elaborate on how the classroom victimization rate was modeled.

The participating students filled out the questionnaire in May 2012, which implies

that they evaluated how often they were bullied in the period from December 2011 to May 2012. In the original Revised Olweus bully/victim questionnaire (1996) the evaluated period is two months. We expected, especially for younger students, that it would be easier to evaluate a period in which an important event (i.e., Christmas) happened than to evaluate a rather abstract period of 2 months. Although the evaluated period was doubled in our study, it seems unlikely that this adjustment has influenced its comparability to other studies, because the answer categories did not change. The length of the evaluation period should not have an impact on the answers from students who were victimized at least two or three times a month (two or higher). It is possible that students who answered that they were never victimized (0) in a 2 month period, would indicate that they were victimized once or twice (1) when a larger time frame was used. However, according to the definition of bullying, students in neither of these categories (0 and 1) are considered victims (Solberg & Olweus, 2003).

2.2.2.2 Explanatory variables
Van Hattum's internal and external causal attribution items (1997) were used to assess teachers' beliefs about the causes of bullying. Items were slightly modified so that they would fit the present context better (see Appendix B for an overview of the items). An exploratory factor analysis (PCA) showed two main dimensions explaining 41% of the variance. Items were assigned to the two scales based on factor loadings larger than 0.4 (after Varimax rotation with Kaiser normalization), which can be interpreted as internal and external causal attribution. These scales can be considered approximations of the scales proposed by Van Hattum, who distinguished several subscales aided by a larger sample size. Three items could not be assigned to either of the dimensions (not presented in Appendix 1).

The internal causal attribution scale consists of 13 items such as "Bullying is caused by teachers who are not able to recognize problems at an early stage". Teachers could answer with strongly disagree (1), disagree (2), neutral (3), agree (4), or strongly agree (5). The 13 items formed a reliable scale (α=0.90) and a mean score was calculated when at least eight items were completed. The external causal attribution scale consists of ten items such as "Bullying occurs because the victim is too silent and socially withdrawn". The external attribution items formed a reliable scale as well (α=0.84) and a mean score was calculated following the same procedure as the internal causal attribution scale. For the regression analyses, scores on both scales were centered around their means. Four teachers responded to less than eight of the internal and external causal attribution questions and were deleted from further analyses.

Teachers' self-perceived ability to handle bullying among students was assessed by asking teachers to what extent they believed that they could influence bullying in their classrooms and schools (Van Hattum, 1997). Teachers indicated, for example, how easy or difficult they thought it would be for them to influence the behavior of bullies. Answers were given on a 5-point scale, ranging from very difficult (1) to very easy (5). The seven

items formed a reliable scale (α=0.77). See Appendix C for an overview of the items. Similarly to the internal and external causal attribution scales, this scale was centered around its mean. Two teachers did not answer to any of the questions on self-perceived ability to handle bullying and these teachers—who also did not answer the questions about causal attribution—were deleted from the analyses.

Furthermore, teachers were asked whether they bullied others or were victimized during elementary school, during secondary school, and after secondary school. They could answer "no", "a bit" or "yes". Two variables reflecting teachers' personal bullying and victimization history were constructed, one indicating whether teachers ever bullied others and one indicating whether teachers were ever victimized (0=no; 1=yes). The "a bit" category was recoded as "yes". Lastly, teachers' years of work experience was included as an explanatory variable in the analyses. This variable was centered around its mean.

2.2.2.3 Control variables
In the analyses we controlled for teachers' gender (male=1). We also controlled for whether classrooms were multi-grade classrooms or not. In Dutch elementary schools it is not uncommon that two or three grades are combined in one classroom. This can be either because the school has too few students for separate classrooms per grade or because of didactical principles (e.g., the older students will help the younger students). We constructed a binary variable that indicated whether a classroom consisted of two or more grades. In addition, we controlled for the mean age in the classroom because students' self-reported victimization has been shown to decline with age (Salmivalli, 2002). This variable was centered around 10, the rounded mean age.

Previous research in the Netherlands suggested that there is more bullying in classrooms with a greater ethnic diversity (Tolsma et al., 2013) and therefore we included the proportion of non-Dutch students per classroom as a control variable in the analyses. Students were considered non-Dutch when they had at least one parent who was born abroad. Lastly, we controlled for the proportion of boys per classroom, because boys have been shown to bully more frequently than girls (Veenstra et al., 2005). The constructed variable indicated the majority proportion of boys in each classroom (i.e., the deviation from 50%).

2.2.3 Analyses

Poisson regression models were used because of the discrete non-negative character of the response variable (see, e.g., Cameron & Trivedi, 2013). In larger classrooms there is a higher likelihood to observe victims than in smaller classrooms. Classroom size was used as an offset to account for these opportunity differences (see, e.g., Long & Freese, 2006). Put differently, we modeled the classroom victim rate, where the (exponents of) regression coefficients multiply the rate. The Poisson package of Stata 12 was used to estimate the

models.

We tested two models: one model with all main effects simultaneously and one model in which an interaction term between internal causal attribution and self-perceived ability to handle bullying was added. In addition to testing the hypothesized effects, we investigated the robustness of the results by exploring other interaction effects and identifying influential and outlying observations. Ordinary Least Squares (OLS) regression models on the logarithm of the classroom victimization rate (i.e., the normal linear analogon of the Poisson outcome variable) were estimated in order to obtain a goodness of fit measure and to compare the results of both regression models qualitatively. As expected, Poisson regression analyses produced smaller standard errors and were therefore considered to give more precise estimates.

We compared the obtained results with a multilevel Poisson regression model with classrooms nested in schools in order to account for possible between school variance. The results, however, showed no substantive differences between schools. Likewise, we estimated a multilevel Poisson regression model with classrooms nested in teachers. This model did not produce different parameter estimates either.

2.3 Results

2.3.1 Descriptive statistics and correlations

About 39.8% of the students in our sample were not victimized in the period Christmas 2011-May 2012, 28.4% were victimized once or twice, 9.3% were victimized two or three times a month, 7.5% were victimized once a week, and 15% were victimized several times a week. According to the definitions of Solberg and Olweus (2003) 31.8% of the students in our sample can be considered victims, because they were victimized at least twice a month. In Figure 2.1 the distribution of the number of victims per classroom is displayed. As Figure 2.1 shows, in almost all classrooms at least one student was victimized and in only two classrooms there were no victimized students at all. The median was 6.5 victims per classroom. Three classrooms contained 16 victimized students.

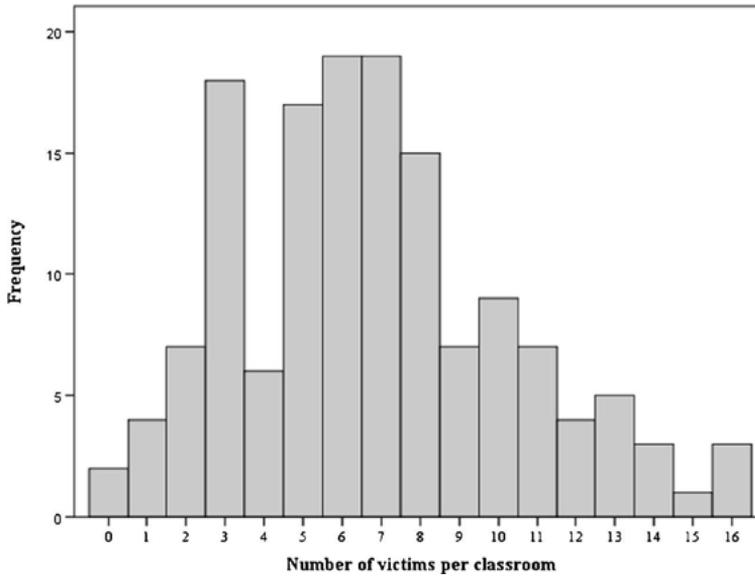**Figure 2.1** Distribution of number of victims per classroom

Table 2.1 summarizes the range, means, standard deviations, and correlations of all continuous study variables. Teachers turned out to have widely ranging ideas about whether, and to what extent, internal and external factors cause bullying. They attributed bullying slightly more to external causes than to internal causes. From Table 2.1 we conclude that teachers in general had neutral perceptions towards their ability to handle bullying. Their mean score on the 5-point scale was 3.05 (*SD*=0.46). About 25% of the teachers in the sample had a personal history of bullying, 38% indicated that they had been victimized, and 14% reported that they had a history of both bullying and victimization (not shown in Table 2.1). The teachers in the sample were experienced. The mean number of years of experience was 16.8 years (*SD*=11.2).

Table 2.1 shows, as expected, a higher prevalence of peer victimization in classrooms with more students. The other correlations between the number of victims and the continuous explanatory variables were rather weak, which also holds true for the association between these variables and the (log of the) classroom victimization rate (not shown here).

Table 2.1 Descriptive statistics and correlations of the continuous study variables (*N*=146)

	Range	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Number of victims in classroom	0-16	6.82	3.53	-	0.01	0.06	0.01	-0.04	-0.27***	0.15	-0.05	0.41***
2. Internal causal attribution teacher [a]	1.15-4.08	2.76	0.69		-	0.18*	-0.20*	-0.07	0.04	-0.13	0.09	-0.03
3. External causal attribution teacher [a]	1.20-4.20	2.91	0.58			-	0.05	0.14	-0.08	-0.10	0.00	-0.17*
4. Teachers' self-perceived ability to handle bullying [b]	2.00-4.43	3.05	0.46				-	0.06	-0.05	0.11	0.02	-0.11
5. Teaching experience in years	2.75-39.00	16.77	11.21					-	0.00	-0.16	-0.06	0.06
6. Mean age in classroom in years	7.62-11.91	9.83	1.12						-	-0.10	-0.12	0.05
7. Proportion non-Dutch in classroom	0-1	0.23	0.24							-	-0.04	-0.05
8. Proportion boys in classroom	0-1	0.50	0.10								-	0.04
9. Number of students in classroom	9-42	23.18	5.83									-

Notes. [a] *N*=142; [b] *N*=144; *$p<0.05$; ***$p<0.001$

2.3.2 Poisson regression analyses

In Model 1 in Table 2.2, the parameter estimates of the Poisson regression analysis of the model containing parameters for all variables (centered where applicable) are displayed. Four classrooms had missing values on at least one of the explanatory variables (see Table 2.1) and were deleted listwise. The parameter estimates in Table 2.2 are based on analyses in which three classrooms that were outliers in the Poisson regression analysis were removed. Two of these outliers were the afore mentioned classrooms with no victimized students at all. The other outlying classroom had an extremely high prevalence of peer victimization: 15 out of 21 students were victimized. The model in which all classrooms (including the three outliers) were included resulted in lower estimates of the effects of external causal attribution and self-perceived ability to handle bullying among students.

The intercept of Model 1 in Table 2.2 represents the mean log of the classroom victimization rate (for all other variables equal to zero, i.e., female teachers with mean scale scores and no personal history of bullying or victimization in classrooms with no non-Dutch students, half of whom were boys, with the mean classroom age equal to 10). The intercept can be interpreted as a base classroom victimization rate equal to $exp(-1.25)=0.29$. Table 2.2 shows no significant relationship between teachers' internal causal attribution and the classroom victimization rate, but supports a relationship between external causal attribution and the classroom victimization rate ($exp(b)=1.17$, $p=0.009$). As expected, the victimization rate is higher when teachers attributed bullying to external causes—causes outside of their control. We expected less peer victimization when teachers perceived that they were able to handle bullying among students, but found a marginally significant relationship in the opposite direction instead ($exp(b)=1.14$, $p=0.08$). We also tested whether there was more peer victimization in classrooms of teachers who had a personal history of bullying peers. This relationship turned out to be marginally significant in the expected direction ($exp(b)=1.15$, $p=0.08$). By contrast, no significant relationship between teachers' victimization history and the victimization in their classrooms was found. Furthermore, we tested whether teachers' work experience affected the classroom victimization rate, but the negative effect was too small to be significant.

In the analyses we controlled for teachers' gender, but found no significant difference in the victimization in classrooms of male and female teachers. In addition, we controlled for classroom composition characteristics. Less peer victimization was found in multi-grade classrooms than in classrooms with one grade only ($exp(b)=0.72$, $p<0.001$). In line with previous research, we found less peer victimization among older students ($exp(b)=0.89$, $p<0.001$). Furthermore, the model suggested a higher victimization rate in classrooms with a higher proportion of non-Dutch students ($exp(b)=1.28$, $p=0.07$). With the normal equivalent of the Poisson model we calculated the explained variance of Model 1 and concluded that the model explained 30% of the total variance in the log of the classroom victimization rate, of which 10% could be attributed to teacher characteristics.

In Model 2 we added an interaction term to the model in order to test whether the

relationship between internal causal attribution and the classroom victimization rate was stronger when teachers' self-perceived ability to handle bullying increased. Both the interaction term and the main effects were not significant and adding the interaction did not improve the model. Even though the non-significance of the interaction indicates that there is a non-trivial probability that there is no true relation between these variables in the population, adding it to the model possibly shed a bit more light on why the main effects of both internal causal attribution and self-perceived ability to handle bullying were in different directions than anticipated. A tentative interpretation of the interaction would be that the positive relation between internal causal attribution and the victimization rate vanishes or even becomes negative when self-perceived ability to handle bullying is (very) high.

2.3.3 Additional analyses

Based on the Mahalanobis distance, and Cook's distance in a matching normal regression model (see, Gnanadesikan & Kettenring, 1972), three outlying classrooms were identified in addition to the three afore mentioned classrooms that were excluded. These classrooms either consisted of only Dutch students or no Dutch students at all. Because excluding these outliers only led to a reduced effect of teachers' personal bullying history, and a slightly higher effect of proportion of non-Dutch students, these classrooms were not excluded from the main analyses as presented in Table 2.2.

   When we further investigated the effect of the proportion of non-Dutch students we discovered that its positive association with peer victimization was due to the relatively large number of classrooms with a considerable, although smaller than 0.50, proportion of non-Dutch students. Although the victimization rate was higher in the 16 classrooms with more than 0.50 non-Dutch students, this association was not found to be positive but slightly negative. In view of the small number of classrooms in which more than half of the students had a non-Dutch background and the overall weak association, it was impossible to incorporate this effect in the final model. However, the positive parameter in Table 2.2 can be better understood through this additional analysis.

   Visual inspection suggested a curvilinear relationship between the victimization rate and the mean classroom age and for this reason a quadratic effect of the mean classroom age was added to the model. Although the regression parameter of this quadratic effect was significant, further analysis of the non-linear effect revealed that this effect was driven by a few lower grade classrooms with low victimization rates, including one particularly strong influential classroom. Therefore, the effect was not included in the final model.

   Furthermore, we checked whether the investigated variables had a differential effect on peer victimization in classrooms of teachers with a history of bullying or victimization. Teachers who bullied others are likely to have permissive attitudes towards bullying whereas teachers who were bullied are likely to be determined to stop bullying. It may be

that the relationships between the investigated variables and the victimization rate are affected by the teachers' personal bullying and victimization history. The quadratic effect of the mean age in the classroom showed a small significant interaction with teachers' victimization history, but for the same reason as for its main effect, the interaction was not included in the model. No other significant differential effects were found.

Finally, we investigated whether exclusion of students who were victimized by children who were not in the same school as them produced different parameter estimates. When teachers do not know the bullies, it possibly becomes more difficult for them to effectively intervene. By excluding victims who were bullied outside of school, the mean number of victims per classroom decreased by one. No substantive differences in the results were found; some effects were slightly weaker due to the decreased victimization rate.

Table 2.2 Estimated Poisson regression coefficients for classroom victimization rate (N=139)

Parameters	Model 1			Model 2		
	Coefficient	SE	z value	Coefficient	SE	z value
Intercept	-1.250	0.058	-21.6	-1.242	0.058	-21.5
Internal causal attribution teacher [a]	0.038	0.050	0.76	0.041	0.050	0.81
External causal attribution teacher [a]	0.159**	0.061	2.62	0.164**	0.061	2.68
Teachers' self-perceived ability to handle bullying [a]	0.132+	0.076	1.73	0.122	0.077	1.58
Teacher bully (Bully=1)	0.137+	0.078	1.77	0.139+	0.077	1.79
Teacher victim (Victimized=1)	0.009	0.071	0.13	0.004	0.071	0.06
Teaching experience in years [a]	-0.005	0.003	-1.49	-0.005	0.003	-1.45
Gender teacher (Male=1)	0.015	0.099	0.16	0.022	0.099	0.23
Multi-grade classroom (Multi-grade classroom=1)	-0.322***	0.077	-4.19	-0.328***	0.077	-4.24
Mean age in classroom in years [b]	-0.113***	0.031	-3.68	-0.114***	0.031	-3.68
Proportion non-Dutch in classroom	0.249+	0.134	1.85	0.222	0.139	1.60
Proportion boys in classroom [c]	-0.222	0.334	-0.67	-0.186	0.338	-0.55
Internal causal attribution*self-perceived ability to handle bullying				-0.079	0.111	-0.71

Notes. Number of students is used as offset; +p<0.10; **p<0.01; ***p<0.001; decrease in deviance in Model 1 compared to empty model 56.2 (df=11), p<.001, Model 2 compared to empty model 56.9 (df=12), p<.001; [a] variable centered around the mean over classrooms, [b] variable centered around age 10, [c] percentage in deviation to 0.50

2.4 Discussion

Using both teacher and student data, we explored to what extent teachers' characteristics were related to the peer victimization in their classrooms. Previous research showed that classrooms differ in the prevalence of peer victimization (Kärnä et al., 2010; Khoury-Kassabri, 2011; Salmivalli, 2010) and we examined whether these differences might be attributable to teacher characteristics. On the basis of our results, we concluded that classrooms indeed differed in the prevalence of victimization and that these differences are associated with teacher characteristics.

As expected, we found a higher victimization rate in classrooms of teachers who believed that bullying could be attributed to external factors—factors outside of their control. We argued that teachers who ascribe bullying strongly to external causes feel little personal responsibility to stop the bullying and believe that they do not have much influence over it. Consequently these teachers are likely to be less motivated and committed to counteract bullying than teachers who attribute bullying less strongly to external causes (Van Hattum, 1997; Weiner, 1980). However, a tentative alternate explanation is that in classrooms with a high prevalence of peer victimization, teachers tended to ascribe bullying more often to external factors than in classrooms with a low prevalence of peer victimization. Research has shown that individuals have a self-serving bias in the causal attribution process; they tend to accept responsibility for positive outcomes, but reject responsibility for negative outcomes (Bradley, 1978). Teachers who fail to handle the bullying in their classrooms might deal with this failure by telling themselves that the problem is caused by external causes. With the current data it is not possible to disentangle the causal direction of this relationship and this would therefore be an important topic for future research.

The results suggest that there is more peer victimization in classrooms of teachers who perceived that they were able to handle bullying among students. We, however, anticipated a relationship in the opposite direction. We assumed that teachers who felt confident about their abilities to counteract bullying could indeed be more skilled and, in addition, would be more likely to actually intervene in bullying incidents (Van Hattum, 1997). Our findings potentially suggest that when teachers strongly believe they are able to handle the bullying in their classrooms they tend to overestimate their own capacities and underestimate the complicated nature of bullying. Teachers who indicated that they found it very easy to affect the behavior of their students might not have a clear understanding what bullying is (Boulton, 1997). This would be in accordance with previous studies in which it was shown that teachers tended to believe that they intervened in nearly all incidents of bullying, while students' reports showed that teachers only intervened in a small proportion of the bullying incidents in their classrooms (Atlas & Pepler, 1998; Craig et al., 2000; Craig & Pepler, 1997). An alternative explanation is that students may feel free to report more victimization in classrooms led by teachers who feel capable of handling the bullying.

We argued that the negative relationship between internal causal attribution and peer victimization was stronger for teachers who perceived that they were able to handle bullying, but did not find support for this hypothesis. Nevertheless, by including this interaction in the model we potentially shed a bit more light on why the effects of internal

causal attribution and self-perceived ability to handle bullying were in different directions than anticipated. Our results could imply that when teachers score high on both internal causal attribution and self-perceived ability to handle bullying there was less peer victimization in their classrooms. Again, caution is needed when interpreting these results and we believe the interrelatedness of internal causal attribution and self-perceived ability to handle bullying is an important topic for future research.

Our results also suggest that when teachers had a personal history of bullying others, there was more victimization in their classrooms. A possible explanation for this positive relationship is that teachers who bullied others around them have more permissive attitudes towards bullying and do not perceive it as harmful behavior (Mishna et al., 2005; Sairanen & Pfeffer, 2011). Furthermore, teachers who have a history of bullying might model negative interactions among their students. We think that this relationship deserves further investigation in future research.

We anticipated less peer victimization in classrooms of teachers who had a history of being victimized, but did not find support for this relationship. A possible explanation for why no relationship was found could be that some teachers still suffer negative consequences from being victimized in the past which prevented them from intervening successfully in bullying episodes in their classrooms. Victimization constitutes a substantial threat to individuals' social-emotional development (Isaacs et al., 2008; Scholte et al., 2007) and it could be that although teachers who have a history of victimization are highly motivated to stop the bullying in their classrooms, they lack the skills that are needed to effectively do so. We attempted to test this explanation by investigating whether self-perceived ability to handle bullying moderated the relationship between teachers' history of victimization and the peer victimization in their classrooms, but we did not find support for such a relationship.

No association between peer victimization and teachers' experience and gender was found. The results seem to imply that the teachers' attitudes or beliefs, rather than fixed characteristics, were related to the victimization in their classrooms. Based on these findings, we agree with Hektner and Swenson (2011) who argued that teachers should not only be seen as implementers of anti-bullying interventions, but as targets of intervention as well. In order to tackle bullying effectively, teachers need to have a clear understanding of what bullying is and what the causes of bullying are. In accordance with Baumann and Del Rio (2005) we argue that teachers should be aware of their responsibility to intervene and should receive guidance on how and when they can effectively intervene. Above all, it is important that teachers understand that when they do not intervene or intervene inadequately they could make the situation worse (Kochenderfer-Ladd & Pelletier, 2008; Kokko & Pörhölä, 2009).

In this study we took into account classroom composition characteristics as well. We found less peer victimization in multi-grade classrooms. One possible explanation for the relationship between multi-grade classrooms and victimization is that the mix of younger and older students leads to a classroom environment with different interaction patterns, due to the differences in age, in which students did not need to compete with each other. Once this relationship is better understood, it may help to design or refine anti-bullying interventions.

When drawing conclusions on how teacher characteristics relate to peer victimization, it should be kept in mind that teachers are probably not randomly distributed over classrooms. It seems plausible that the school management prefers to assign difficult classrooms to better teachers. By contrast, teachers who are less skilled or experienced might be placed in classrooms with less problematic behavior. Thus, in the present paper some effects may have been underestimated. As the sample is essentially self-selected, other sources of bias cannot be excluded. It is, for example, possible that schools that participated in our study were more motivated to stop bullying or were having a higher prevalence of bullying than non-participating schools.

The use of cross-sectional data implies that no conclusions on causal directions of relations can be drawn. Some teacher characteristics could be a function of victimization, rather than the other way around. This concern seems particularly relevant for the relationships with external causal attribution and teachers' perceived ability to handle bullying. For teachers' personal history of bullying, reversed causality seems less plausible.

Despite its limitations, the present study provided more insight into how teacher characteristics relate to peer victimization. This knowledge is valuable because classrooms are one of the most salient social contexts in childhood and adolescence (Bronfenbrenner, 1977). Students spend a considerable amount of time in classrooms and, as is confirmed in the data, classrooms where no students are victimized are rare. Although the found relationships are modest and previous research showed that peer victimization can to a large extent be explained by relational, individual, and other contextual characteristics (Dijkstra, Lindenberg & Veenstra, 2008; Espelage & Swearer, 2004; Pozzoli, Ginig & Vieno, 2012), the findings do point out the need to consider teacher characteristics in anti-bullying interventions as well.

2.5 Appendix chapter 2

2.5.1 Appendix A transcription of instructional video

"The next questions are about bullying. Bullying is when one or more children bother another child over and over again. So bullying means that you are again and again being mean to someone. For the child that is bullied, it is hard to defend him or herself. Bullying can be done in several ways. For example, by hitting someone, or by kicking or pinching, taking away someone's stuff or breaking it, calling names, or saying mean things, gossiping, excluding someone from games or other things you do together. Bullying can also be done via a computer or mobile phone, via MSN, sms or via social media such as Hyves. Bullying is not the same as a fight between children who have the same strength. Bullying is also not teasing. Bullying is when you are over and over again being mean to someone else."

2.5.2 Appendix B internal and external causal attribution items

When students are bullied at school this is often due to:

1. *The teacher is not able to recognize problems at an early stage
2. **The victim just makes a wrong comment
3. *The teacher does not ask enough help of colleagues to solve the problem together
4. **The victim provokes the bullying
5. *The teacher does not notice that there are socio-emotional problems
6. *The teacher does not like the victim and is showing this indirectly
7. *The teacher prefers to focus on the cognitive development of students
8. *The teacher does not have enough time to prevent and reduce bullying
9. *The teacher often has more important matters that need his or her attention
10. *The teacher does not want to spend time to try and tackle bullying
11. **Parents did not teach victims to defend themselves
12. *The teacher does not have enough skills to handle socio-emotional problems
13. **The victim does not react adequately to the behavior of his/her peers
14. *There is no structural way of handling bullying within the school
15. **Parents never taught the bully how to take others' feelings into account
16. *The school does not keep in touch with parents enough
17. **The bully has a difficult family background
18. **The victim is too silent and socially withdrawn
19. **The combination of students in the group did not work out well
20. **The victim cannot handle the comment of a classmate and then the situation escalates
21. *The teacher does not take a firm stance against bullying
22. **The victim happens to be at the wrong place at the wrong time
23. *The team of teachers attaches too little attention to the pedagogical climate within the school

* Internal causal attribution scale items
** External causal attribution scale items

2.5.3 Appendix C teachers' self-perceived ability to handle bullying

Please indicate to what extent the following things are easy or difficult to influence for you:

1. The behavior of children in general
2. The behavior of the bully
3. The behavior of the victim
4. Bullying within the classroom
5. Bullying within the school
6. How students interact with each other in the classroom
7. How students interact with each other at school