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Peer Victimization in Dutch School Classes of Four- to Five-Year-Olds: Contributing Factors at the School Level

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Abstract

This research was designed to examine how factors within young children's environment (e.g., school factors, neighborhood) contribute to explaining peer victimization. The sample comprised 2,003 children (between 4 and 5 years of age) from 98 classrooms in 23 elementary schools in the Netherlands. Teachers were asked to complete a questionnaire on exposure to victimization for each child. Multilevel analyses revealed that gender and social climate of the school were directly related to victimization. Furthermore, results indicated that peer victimization in boys was less prevalent when they attended smaller schools. In low-SES neighborhoods victimization scores were significantly lower when schools had implemented clear antibullying policies. Finally, variation among school classes appeared to be strongly associated with victimization, even more so than variation among schools. These findings support broadening the focus beyond the individual child at risk.

Chronic peer victimization has been shown to start at an early age (Kochenderfer & Ladd, 1996a, 1996b) and to result in serious forms of maladjustment, including loneliness, anxiety, depression, and school avoidance (e.g., Hawker & Boulton, 2000; Kochenderfer & Ladd, 1996b; Olweus, 1991). Although relatively few studies on victimization have been carried out among young children (4–5 years old), there is evidence to suggest that in this group, in terms of numbers of children affected, victimization in the form of being bullied is at its most widespread. Kochenderfer and Ladd (1996a) found that 22.6% of their sample of kindergarten children had been exposed to a moderate or high level of peer victimization. Even more children (42%–54%) reported that they had been victimized at least “some-

times." Kochenderfer-Ladd and Wardrop (2001) found that the majority of children (60%) who started school in kindergarten reported being victimized on one or more of the four yearly assessments. In order to unravel the underlying processes and mechanisms of victimization in young children, most studies have focused on the onset or continuation factors at the individual level (e.g., predispositions of children) or on group processes. However, more distal variables found within the children's environment may affect peer victimization as well. In some classroom, school, and neighborhood environments young children may be more or less often victimized than in others (Espelage & Swearer, 2003). Given the importance of early prevention and intervention, it is important to be able not only to identify young children at risk, but also to identify situational risk factors that contribute to the problem.

Consistent with past research on peer victimization in younger children (4–6 years of age) (Hanish, Ryan, Martin, & Fabes, 2005; Kochenderfer & Ladd, 1996b; Monks, Smith, & Swettenham, 2003; Perry, Kusel, & Perry, 1988), we defined victimization as a form of peer abuse in which a child is frequently the recipient of aggressive acts. These aggressive acts can be expressed both directly (e.g., hitting, calling names) and indirectly (e.g., isolation from the group, rumor spreading) (Alsaker & Valkanover, 2001; Crick, Casas, & Ku, 1999; Kochenderfer & Ladd, 1996a). Victimization may be conceptualized as a developmental ecological phenomenon that can be explained by transactional relations among individual characteristics and characteristics of systems such as school, family, and community. The rate of victimization may therefore characterize not only individual children, but also may characterize the systems in which children are embedded, such as classrooms and schools (Espelage & Swearer, 2003; LeBlanc, Swisher, Vitaro, & Tremblay, 2008; Leff, 2007; Power, 2007) as well as subgroups of individuals within

these higher-order systems. This means that the study of environmental factors must go beyond associations between outcomes at the individual level of the child and environmental factors at the individual level (e.g., Olweus, 1999; Smith, 1999; Whitney & Smith, 1993; Wolke, Woods, Stanford, & Schulz, 2001).

In addition to factors at the individual level, outcomes in terms of victimization may be partly determined by factors that are shared by groups of children—those, for example, who belong to the same classroom or school—and by combinations of factors within and between levels (e.g., Griffith, 1997). The fact that children at the individual level are nested in higher-order levels, such as classes or schools, provides unique opportunities for studying context effects from a systems theoretical perspective (children affect and may be affected by their classroom, classrooms may affect and be affected by the school they are part of, schools may affect or be affected by the neighborhoods they are part of). This theoretical model may be translated into the multilevel statistical model (Ma, 2001). The current study aims to start filling this gap and was therefore designed as a multilevel study on the association between school level factors and peer victimization in young children (4–5 years of age). Factors included in our model will be reviewed here in order to present empirical evidence on their contribution to victimization.

School level predictors are often divided into two different categories: school context and school climate (Ma, Stewin, & Mah, 2001; Payne & Gottfredson, 2004). School context refers to structural characteristics such as school size and the neighborhood's socioeconomic status (SES). The literature on the association between victimization and these contextual factors has reported mixed results. There is a widely held belief, even among teachers, that children in large schools are more at risk of being victimized than those in small schools (Olweus, 1991, 1999). The basis for this hy-

pothesis may be found in theories on the development of antisocial behavior, such as social control theory or theories on monitoring and quality of relationships with authority figures. These theories stress the importance of engaged, meaningful relationships between children and adults in order for children to internalize conventional behavioral norms (Hirschi, 1969) or to be more prone to disclose transgressions, allowing adults to supervise and intervene more effectively (Stattin & Kerr, 2000). In a large school, children would more frequently be under the supervision of unfamiliar teachers or staff. Large schools may also have a different, more hierarchical organization, which might lead to a school climate that is conducive to bullying (Lee, Bryk, & Smith, 1993; Yoneyama & Naito, 2003). However, studies tend to find no significant association between victimization and school size (Khoury-Kassabri, Benbenishty, Astor, & Zeira, 2004; Mooij, 1992; Olweus, 1991, 1999; Whitney & Smith, 1993).

A possible explanation for this surprising lack of an association between victimization and school size may be that the effects of school size are modest in comparison to factors at the individual level, or may be more relevant for some schools or for some children than for other schools or children. Griffith (1999) found support for his hypothesis that expressive support (being receptive to and supportive of the children's needs) was more conducive to academic performance at schools with relatively more children from lower socioeconomic backgrounds. Such moderating effects may hold for other risk factors as well, such as gender. For this reason, the issue of school size in relation to victimization might be explored further by examining the effects of school size, accounting for effects at the classroom and child levels, and accounting for possible interaction effects with other risk factors at these levels.

According to Whitney and Smith (1993), neighborhood SES, primarily a measure of social class and quality of housing, appears

to have a small but significant effect on bullying problems. They found an increased incidence of victimization in schools in disadvantaged neighborhoods, although only 10% of the variance could be explained by this variable. These findings are consistent with those reported by Khoury-Kassabri et al. (2004), Wolke et al. (2001), and O'Moore, Kirkham, and Smith (1997). Others have argued, however, that risks associated with the SES of the school population or school neighborhood may be counteracted when groups or communities recognize the risks and undertake collective action, the so called "social capital" (Khoury-Kassabri et al., 2004). Neighborhood SES will therefore be included in our model as a variable at the school level, but it will also be investigated in combination with other factors, including indicators of social capital such as school climate.

School climate, the second category of school factors, refers to the "inner workings of the school" (Ma, 2004, p. 24), including the interactions among teachers, students, and parents (Haynes, Emmons, & BenAvie, 1997; Payne & Gottfredson, 2004). School climate is a multifaceted construct, including whole-school characteristics as well as individual perceptions by the students (Griffith, 1999, 2000). Many researchers have emphasized the importance of developing a positive school climate in order to reduce victimization (Junger-Tas, 1999; Khoury-Kassabri, Benbenishty, & Astor, 2005; Ma, 2001; Olweus 1991; Orpinas, Horne, & Staniszewski, 2003; Whitney & Smith, 1993), but authors often refer to different aspects, such as school policies and rules, teacher behavior and attitude, student-teacher relationships, and peer relationships.

An important aspect of positive school climate are policies for maintaining clear, consistent, and fair rules with respect to unwanted behavior and activities to involve teachers as well as students in living up to behavioral norms. School-based anti-bullying interventions (e.g., Olweus, 1991,

1999; Smith, 1999) are an indication that such policies are implemented. These interventions focus on the entire school (i.e., a whole-school approach) and attempt to improve the school climate by creating a warm, positive, and pupil-oriented environment, increasing awareness of bullying and victimization, and establishing clear antibullying policies (Payne & Gottfredson, 2004). Research on school-based interventions has found significant reductions of victimization. For example, Olweus (1991, 1999) described an antibullying intervention program that could be implemented at the school, class, and individual levels. The aim of the program was to "create a school environment characterized by warmth, positive interest and involvement from adults . . . firm limits to unacceptable behaviour . . . and in cases of violations of limits and rules, nonhostile, nonphysical sanctions" (Olweus, 1991, p. 443). Results of the study indicated that the incidence of victimization in the schools was reduced up to 50% after 2 years. This finding is consistent with evaluations of other programs (Alsaker & Valkanover, 2001; O'Moore & Minton, 2005).

Other important aspects of school climate may be more subjective. For example, interactions between teachers and students might limit the amount of bullying, but only insofar as students perceive their relationships with teachers as positive and supportive (Stattin & Kerr, 2000). These perceptions are included in measures of perceived school climate, which were not solely related to victimization at the individual level. Aggregates of student perceptions of school climate were related to differences among schools in victimization as well (e.g., Gottfredson, Gottfredson, Payne, & Gottfredson, 2005; Khoury-Kassabri et al., 2004). Research on subjective aspects of school climate usually relies on student-report measures of school climate, which limits this research to children old enough to fill out questionnaires. In addition, in order to assess the quality of interactions

within schools, the perspectives of students as well as other actors within the school are relevant. Quality assessment bodies, such as the National School Inspectorate in the Netherlands, perform school visits and conduct interviews with staff, teachers, parents, as well as children about their experiences in the school. As a result, school climate as perceived by the different parties involved is assessed. This measure is potentially important because it refers to the whole school level and, at a practice level, forms the basis for changes in school policy, quality-improvement programs, and parents' decisions regarding their choice of the right school for their child. Little is known, however, about the relation between these independent expert assessments of school climate and actual victimization.

Although the focus of the study was on school level factors, we also included the child's gender as a factor at the individual level. Many researchers have studied gender as a predictor of victimization at the individual level, but results provided mixed evidence. Gender may, however, interact with risk factors at the school level, because boys often appear to be more susceptible to environmental risks for externalizing problems, such as victimization, than do girls (see Fraser, 1996; Kuperminc, Leadbeater, Emmons, & Blatt, 1997). Class size was included as a covariate at the class level in order to be able to differentiate effects of school size from class size and to examine whether the effects of school level factors may be buffered in smaller groups.

A possible explanation for the mixed evidence on the effects of school factors on victimization is that studies have utilized a number of different methodologies and informants to measure victimization (self-reported by student, peers, or teachers). Several researchers (e.g., Alsaker & Valkanover, 2001; Monks et al., 2003) have cast doubt on the validity of young children's self-reports. Both Ladd and Kochenderfer-Ladd (2002) and Monks et al. (2003) found

that peer nominations for young victims were also not reliable. Young children tended to give victim nominations to the children they most liked. Teacher reports may also have drawbacks, because children may not always disclose to teachers their experiences with victimization (see Whitney & Smith, 1993). Compared to older children, however, this limitation appears to be less pertinent for the youngest age groups (Crick, Casas, & Mosher, 1997). In young children, the emphasis is relatively more on socialization rather than teaching. For this reason, teachers are more likely to be interested in and aware of what happens between the children (Alsaker & Valkanover, 2001). Teacher reports of physical and relational aggression of young children have therefore been considered as more reliable than peer nominations or self-reports at this age (Crick et al., 1999; Ladd & Profilet, 1996). On the basis of these considerations, a teacher-report measure on victimization was used in this study, including direct victimization (e.g., hitting, calling names, damaging property) as well as indirect victimization (e.g., isolation from the group, rumor spreading). Teachers were not asked to nominate children as victims. Instead, the extent of exposure to victimization has been assessed for all children in the classroom.

Using a multilevel approach, this study examined how school level factors contribute to explaining peer victimization in young children (4–5 years of age). There were three main research questions: (1) Are school context factors associated with victimization in young children? We expected that school size was positively related to victimization (Lee et al., 1993; Stattin & Kerr, 2000; Yoneyama & Naito, 2003). Furthermore, we expected that higher rates of victimization would be reported in schools in lower-SES neighborhoods (Khoury-Kassabri et al., 2004; O'Moore et al., 1997; Whitney & Smith, 1993; Wolke et al., 2001). (2) Does school climate contribute to explaining victimization? We expected that

lower victimization rates would be reported in schools with a positive school climate (i.e., a positive social climate and a clear antibullying policy) (Alsaker & Valkanover, 2001; Olweus, 1991, 1999; O'Moore & Minton, 2005). (3) Are the statistical effects of school context factors on victimization dependent upon other indicators of risk or protective influences, including child gender and school climate? This third question is based on the recognition that the main effects of school context factors often have been surprisingly small, and that other work suggests that school context, school climate, and individual level characteristics may act in combination (Griffith, 1999; Khoury-Kassabri et al., 2004).

Method

Sample and Procedures

The sample consisted of 2,003 children (1,001 boys, 959 girls, and 43 children with a missing value for gender) in the first two grades of elementary school. Dutch children begin elementary school at age 4. The children came from 98 classrooms in 23 schools in the Flevoland and the North Holland provinces. These provinces are situated in the central part of the Netherlands and contain both urban and rural areas. In all schools in this sample, the lowest grades were combined into composite classes of first and second graders. As a result, the classes were heterogeneous with respect to age.

The consent of the schools had been obtained by way of a letter describing the purpose of the study and the kind of cooperation it would require. Forty-nine schools were contacted, and 47% of these schools consented to participate in the study. We checked for differences between the participating and nonparticipating schools on school identity, school size, school climate, and neighborhood SES, but no significant differences were found ($p > .05$). After permission was obtained from the respective

school councils to conduct the study, parents were informed about the project and asked for their cooperation. We used a passive consent procedure. Less than 8% of the parents refused participation. The teachers were asked to complete a questionnaire on exposure to victimization for each participating child in late October, mostly within the same week. All children had been observed by their teacher for at least 6 weeks by then. A rating of extent of victimization was used rather than a classification of bullies and victims. Teachers completed the questionnaires during working hours and were given €10 as acknowledgment for their participation. No names or other identifying data were disclosed by the schools to the researchers.

Measures

Peer victimization. Teachers completed a 16-item measure of children's peer victimization. This measure consisted of the three physical and two relational peer victimization items developed by Crick et al. (1999). In order to more comprehensively sample from the various forms of victimization that are observable by teachers, 11 additional items were included assessing verbal, object-related (e.g., damaging property), and indirect relational (e.g., rumor spreading) victimization. Items were answered using a 4-point Likert-type scale ranging from 1 (never true) to 4 (always or almost always true).

The dimensionality of the 16-item measure was analyzed using maximum-likelihood factor analyses. On the one hand, two factors showed an eigenvalue higher than 1.0 (eigenvalues were 7.44 and 1.20, respectively). On the other hand, the scree plot showed a flattened slope after the first factor and therefore pointed to one underlying factor. Based on the eigenvalues, two factors were rotated using a Varimax rotation procedure. The factors did not fully correspond to a priori distinction between direct and indirect victimization.

Out of seven items on indirect victimization, three items loaded on the first factor. Moreover, out of nine items on direct victimization, one item loaded on both factors, with highest loadings on the second factor. The correlation between the two factors was high ($r = .67, p < .01$), indicating that separate scales based on these factors would explain little unique variance. A solution based on oblique rotation yielded the same item distribution. Therefore, victimization scores were computed by taking the average across the 16 items for each child. Reliability was high (Cronbach's $\alpha = .93$). An overview of the included items can be found in the Appendix.

Independent variable at the individual level. Gender, as an individual characteristic, served as covariate.

Independent variables at the class level. Class size was included as covariate by summing the number of children in each class.

Independent variables at the school level. Variables at the school level included school size, school climate (i.e., social climate and antibullying policy), and neighborhood SES (see Table 1 for descriptive statistics of predictor variables). Information on school size and the two dimensions of school climate was obtained from the most recent assessment reports from the Inspectie van het Onderwijs (National School Inspectorate), which oversees the quality of education in the Netherlands. On behalf of the Ministry of Education, all elementary schools in the Netherlands are assessed at least every 4 years by the National School Inspectorate in order to increase educational quality. These reports are public. Inspectors are trained educational psychologists who visit the schools for observation and interviews with parents, teachers, and children. On the basis of all the information obtained during the aforementioned observations and interviews, scores are given by the inspectors on each variable. The school size variable reflects the number of children attending the

TABLE 1. Descriptive Statistics: Individual, Class, and School Variables

Variable	Descriptive
Victimization, <i>M</i> (<i>SD</i>)	1.21 (.32)
Individual level variable (<i>n</i> = 2,003):	
Gender:	
Boy (%)	51.1
Girl (%)	48.9
Class level variable (<i>n</i> = 98):	
Class size, <i>M</i> (<i>SD</i>)	21.33 (4.20)
School level variables (<i>n</i> = 23):	
School size:	
Small (%)	30.4
Medium (%)	56.5
Large (%)	13.1
Social climate:	
Satisfactory (%)	72.7
Good (%)	27.3
Antibullying policy:	
Social skills training (%)	30.4
Written antibullying rules (%)	43.5
No policy (%)	26.1
School identity:	
Public school (%)	34.8
Private school (%)	65.2
SES of neighborhood, <i>M</i> (<i>SD</i>)	2.69 (.71)

school. All schools were divided into three groups: small size (<300 children), medium size (301–500 children), and large size (>500 children). Schools are also given a score by the National School Inspectorate on the social climate of the school ranging from 1 (bad social climate) to 4 (good social climate). The social climate variable was defined as a safe, supportive, and challenging environment in which students as well as teachers and parents feel involved (Inspectie van het Onderwijs, 2004). All schools obtained a score of 3 or 4, as a score of 1 or 2 did not occur in this particular school year. Therefore this variable was treated as a dichotomous variable. The antibullying policy variable refers to the activities schools undertake to decrease peer victimization. Three types of antibullying policies were distinguished: (1) schoolwide social skills training in order to create a safer class climate and improve the quality of peer relationships, (2) written antibullying rules, and (3) a no antibullying policy. The present study included the neighborhood SES variable as defined and measured

by the census bureau (Social and Cultural Plan Bureau) in the Netherlands. This score is a deprivation index based on three measures (income, education, and employment). The scores were derived from a random sample survey among individuals per postal code area. Almost all children lived within their school's postal code.

Statistical Analysis

Multilevel regression analysis was used to investigate the statistical effects of school characteristics on victimization in young children. The dependent variable represented the victimization score of an individual child in a specific class at a specific school. By using multilevel modeling with a three-level approach, data were analyzed with regression-like hierarchical models in which units from the first level of analysis (i.e., individual children) were treated as nested within classes at the next (second) level of analysis and classes as nested within schools at the third level (Snijders & Bosker, 2004). Analyses were conducted by using the mixed-model procedure in SPSS (14.0) with the full maximum likelihood estimation procedure. Multilevel models provide flexibility by modeling not only mean values across levels, but their variances and covariances as well. The estimation of variance at level 1 is an indicator of how individual children differ in victimization scores. At level 2, variance estimation indicates variation in victimization between classes, and at level 3, variation in victimization between schools. Some data were missing for the independent variables. However, the missing data were less than 5% and therefore no imputation of data was needed (Tabachnick & Fidell, 2006).

To find the best-fitting model, predictors were added to and removed from the multilevel model. To compare the nested models and to test whether predictors contribute to the explanation of change, change of fit of the total model was calculated as a deviance statistic ($-2 \log$ likelihood). The deviance statistic (DS) has a large-sample chi-

TABLE 2. Fixed Effects and Variance-Covariance Estimates

	Model 1		Model 2		Model 3		Model 4	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Fixed parameters level 1:								
Intercept	1.19**	.03	1.17**	.11	1.13**	.11	.93**	.11
Boy			.06**	.01	.12**	.02	.12**	.02
Girl (reference)								
Fixed parameters level 3:								
Small school size			-.17	.09	-.15	.09	-.12	.08
Medium school size			-.16	.07	-.11	.07	-.09	.06
Large school size (reference)								
SES of neighborhood (Z)			-.04	.03	-.04	.03	-.14	.05
Satisfactory social climate			-.03	.06	.03	.06	.17*	.07
Good social climate (reference)								
Social skills training			.17	.08	.17	.08	.16	.08
Written antibullying rules			.10	.07	.10	.07	.14	.08
No policy (reference)								
Interaction terms:								
Boy × medium school size					-.10**	.03	-.10**	.03
SES × social skills training							.25**	.07
Random parameters:								
Individual level variance	.05**	.002	.05**	.002	.05**	.002	.05**	.002
Class level variance	.04**	.006	.04**	.007	.04**	.007	.03**	.005
School level variance	.01*	.005	.00*	.004	.00	.004	.00	.000
Deviance (-2 log likelihood)	-113.113		-190.635		-206.720		-219.084	
χ^2 difference test			77.52 (7), $p < .001$		16.09 (2), $p < .001$		12.36 (2), $p < .01$	

NOTE.—Gender was coded as 0 (boys) and 1 (girls). The models were hierarchically built and represent the best-fitting model.

Model 1: empty model, Model 2: model with level 3 main effects, Model 3: model with between-level interaction terms, Model 4: model with within-level-3 interaction terms.

* $p < .05$.

** $p < .001$.

square distribution with degrees of freedom equal to the difference in the number of parameters estimated. An alpha of .05 was used to test the predictors' main effects. Because of the explorative character of the analysis of interaction effects between levels, we used the Bonferroni method for control of Type 1 error and reduced alpha for these cross-level interactions to .0125. In model 5, within level 3 interaction effects were tested with an alpha at .05, because the power for detecting these interaction effects is lower because of the limited number of units at this level (see Snijders & Bosker, 2004).

Results

Multilevel Modeling

Within our multilevel analyses, several models, as described below, were tested.

To find the best-fitting model, predictors were added to the model following the steps as described by Snijders and Bosker (2004). In Table 2 only the models are displayed that significantly improved fit of the data over earlier models.

Preliminary analyses. The first model is often referred to as a totally unconditional model or intercept-only model (see model 1 in Table 2) and is useful in determining whether a multilevel approach is needed to account for within-level dependency in the present data. With this model the variances can be partitioned into the between-children variance (level 1), which was .05; between-class variance (level 2), which was .04; and between-school variance (level 3), which was .008. The intraclass correlations based on these variances were .41 (level 2)

and .08 (level 3), indicating an important similarity between children in the same class and between children in the same school. Multilevel modeling was therefore appropriate for analyzing the present data.

Model development. In the next step (see model 2 in Table 2) all predictors at the school level (level 3) were added (i.e., school size, SES of the neighborhood, social climate, and antibullying policy). Controlling for gender and class size (respectively, level 1 and level 2 parameters), none of the third-level predictors added significantly to the model fit. Gender appeared to be associated with victimization. Boys showed higher scores on victimization compared to girls. Class size was not significant, and therefore was removed from the model. Altogether, the fit of this model was compared to the totally unconditional model, and the chi-square test revealed a significant improvement, $\chi^2(7) = 77.52, p < .001$. The proportion of variance explained by model 2 was 0.10 at level 1, 0.03 at level 2, and 0.15 at level 3.

In a next step, interaction terms with gender and all four school factors were added to the model. Alpha was set at .0125 for each interaction term to control for Type 1 error. One interaction term was significantly associated with victimization, namely, gender with school size. Boys in medium-size schools showed lower scores on victimization compared to boys in large-size schools. All other interaction terms with gender were removed from the model. This led to model 3 (see Table 2). The model fit had significantly improved compared to model 2, $\chi^2(2) = 16.09, p < .001$. The proportion of variance explained by model 3 was 0.10 at level 1, 0.04 at level 2, and 0.16 at level 3.

In the final step, six interaction terms within level 3 were added to the model. The results of this model can be found in Table 2 (see model 4). Of the third-level predictors, social climate of the school showed a significant statistical effect, suggesting less victimization in schools with a good rather than satisfactory social climate. The interaction term gender with school

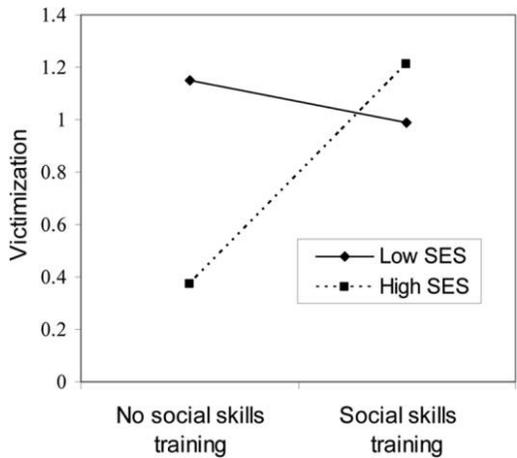


FIG. 1.—Interaction between schoolwide social skills training and SES of the neighborhood ($p < .001$).

size was still associated with victimization ($p < .001$). Looking at interaction terms between level 3 factors (school factors), only the interaction effect of neighborhood SES and school-wide social skills training was significant (with Bonferroni corrected alpha set at .05). Post hoc analyses revealed that children at schools in lower-SES neighborhoods that implemented schoolwide social skills training experienced less victimization compared to children at schools in these neighborhoods that did not offer this training ($t(860) = 5.95, p < .001$). Surprisingly, children at schools in higher-SES neighborhoods that used schoolwide social skills training experienced more victimization than children at schools in these neighborhoods that did not offer this training ($t(1142) = -11.82, p < .001$) (see Fig. 1). All other interaction terms were removed from the model. The fit of this final model was compared to model 3 and the chi-square test revealed a significant improvement of the model, $\chi^2(2) = 12.36, p < .01$. The proportion of variance explained by model 4 was 0.16 at level 1, 0.08 at level 2, and 0.27 at level 3.

Discussion

Using the multilevel approach, this study examined how characteristics of the school

system may contribute to peer victimization in young children (4–5 years of age). The results revealed that school-context factors (i.e., school size, neighborhood SES) as well as school-climate factors (i.e., social climate of the school, antibullying policies) were related to peer victimization and, moreover, interacted with each other. Multi-level modeling appeared to be an adequate approach for analyzing victimization problems in school. This technique revealed that differences in peer victimization between classes were stronger than between schools.

Regarding school-context factors, support was found for the association between school size and peer victimization. Victimization scores were significantly lower in medium-size schools compared to large-size schools. However, this effect was found only for boys, not for girls. Given that the effect sizes are modest, studies that only looked at main effects may have failed to detect effects of school size, especially when sample sizes were smaller. A possible interpretation is that children in larger schools are relatively more often supervised by unfamiliar adults. Important conditions may be lacking for internalizing the conventional behavioral norms that these adults are upholding, including a sense of attachment and high-quality relationships (Hirschi, 1969; Stattin & Kerr, 2000). Given the higher tendency toward aggressive behavior among boys (e.g., Card, Stucky, Sawalani, & Little, 2008) and the tendency for boys to seek out same-sex victims, schools in which children find less opportunity for internalizing behavioral norms may lead to more victimization for boys in particular.

It should be noted, however, that no interaction effect was found for gender with school climate, which would also have been expected. Another explanation for the interaction effect of school size and gender may therefore be that large-size schools had separate departments for their young children, some of them containing up to 14 different classes. Consequently, these chil-

dren were surrounded by a large group of peers of the same age. As found in several studies (e.g., Alsaker & Valkanover, 2001; Kochenderfer & Ladd, 1996b), not only is peer victimization a common occurrence during this age period, but this is also an age at which aggression toward peers peaks as well (Hanish et al., 2005). Given the fact that girls and boys play in separate groups, it can be argued that boys in large schools will be more exposed to aggressive behavior that, in turn, may increase the likelihood of becoming victimized. Class size appeared not to be related to peer victimization. This finding is consistent with other studies (Mooij, 1992; Olweus, 1991; Whitney & Smith, 1993).

Regarding school-climate variables, support for their contribution to victimization in young children was found for both indicators (i.e., social climate of the school and antibullying policies). In line with findings reported in earlier studies (e.g., Khoury-Kassabri et al., 2004), schools with a good social climate reported less victimization compared to schools with a merely satisfactory social climate. Although little variance in social climate scores was found in this study, the social-climate factor appeared to be significant. Future research may further consider social climate as it also may vary at the class level. This may shed light on the mechanisms that account for the association between climate and victimization. Does a particular climate give way to victimization, or does the occurrence of victimization undermine the social climate?

Furthermore, an interaction effect was found for schoolwide social skills training and neighborhood SES. Schools in lower-SES neighborhoods that had implemented such training reported less victimization compared to schools in those neighborhoods that did not use the training. Surprisingly, a reverse effect was found for schools in high-SES neighborhoods. Dodge, Pettit, and Bates (1994) found that family poverty was related to greater difficulties in children's behavioral and emotional develop-

ment. Leadbeater, Hoglund, and Woods (2003) argued that, as a consequence, the concentration of children with behavioral or emotional problems within a class or school in low-SES neighborhoods is higher, which in turn may increase the risk of becoming a victim of bullying. Consequently, teachers in these schools may have a heightened awareness of problem behavior in their classrooms and feel more strongly the need to address this behavior. The likelihood of full implementation and commitment, and thereby a positive effect of the social skills training program, may therefore be high in low-SES neighborhoods.

This is in line with the concept of building social capital as discussed in the introduction (Khoury-Kassabri et al., 2004). Possible negative effects of economic disadvantage in a neighborhood, such as victimization rates at school, can be counteracted when risk factors are recognized by the school and adequate collective action is undertaken in the form of implementing antibullying policies and establishing a positive school climate. On the other hand, teachers in high-SES neighborhoods might be less aware of bullying and victimization problems in their classes because they may not expect serious problem behavior among these young children. Implementing schoolwide social skills training, however, will force teachers to focus their attention on victimization, which in turn may increase their awareness. This effect has also been found in the study of Orpinas et al. (2003). As a result, teachers may report more victimization in schools that use a schoolwide social skills training program.

Interestingly, the results from this study also demonstrated that most of the variance in peer victimization in young children is situated at the class level, and to a much lesser degree at the school level. It may be that these class effects reflect the differences in perceiving and reporting victimization among teachers. Kochenderfer-Ladd and Pelletier (2008) found that teachers' views and beliefs about bullying and victimization influence what they do

and do not perceive as bullying. Craig, Henderson, and Murphy (2000) demonstrated that empathy is a significant predictor for teachers' attitudes toward bullying and victimization. Teachers who rate relatively low on empathy may not view negative interactions between children as bullying or may minimize their seriousness. Evidently, there are individual differences between teachers in awareness and sensitivity with respect to victimization. This could have affected the extent to which victimization was reported to occur in a particular class and the teachers' motivation to do something about it. Other explanations may, however, also be considered, such as the group composition and dynamics.

Analyses of children's victimization scores also showed gender differences. Boys were more likely to be victimized than girls. To date, findings regarding gender differences in peer victimization during early childhood have been mixed, which may have been the result of methodological artifacts (Wolke, Woods, Bloomfield, & Karstadt, 2000). Our results may be explained by the meta-analytic findings of Card et al. (2008). They found that boys enacted more direct aggression than girls; for indirect aggression, the gender difference was negligible. This finding was consistent across age, ethnicity, and country. In other words, boys were both directly and indirectly aggressive, whereas girls were particularly indirectly aggressive. It can be argued that given the gender-segregated nature of young children's peer interactions (see Maccoby, 1990) in combination with these gender-differentiated patterns of aggression, the likelihood of becoming a victim of bullying is heightened for boys.

Limitations

School variability appeared to be smaller than class variability. The variance between classes, however, could not be further explored in the present study because class size was the only factor studied at the class level.

Therefore, future research on class characteristics such as teaching styles, class management, and social climate would be meaningful. Furthermore, the current study relied solely on teacher reports of victimization. Although teacher reports of victimization in this young age group have been shown to correlate significantly with naturalistic observations (Ostrov & Keating, 2004), future research should expand on the present findings by using multimethod assessment and multi-informants of assessment in order to provide complementary perspectives (Ladd & Kochenderfer-Ladd, 2002). Another avenue for further research is the expert rating on school climate, which was chosen as an alternative to assessing 4- and 5-year-old children's perceptions of school climate. The study results underline the value of these ratings for identifying schools with climates that may protect against the risk of victimization. More research is needed, however, on the psychometric characteristics of this measure. Finally, this study focused on the Dutch school system. However, school systems may vary among countries (see Wolke et al., 2001). Future research on cross-cultural similarities and differences regarding school factors is therefore important because prevention and intervention programs should be sensitive to cultural aspects of individual countries instead of being based on universal findings.

Practical Implications

This study supports a broadening of focus beyond the individual child at risk. Identifying types of classes and schools that are at risk for peer victimization in this young age group may be essential, especially given the importance of early prevention and intervention. In this matter, the results of our study suggest three potential levels of prevention possibilities. First, our findings indicate that peer victimization among young children is less prevalent in schools with a good social climate. Therefore, heightened attention on the part of educational staff for the need to create a

positive social climate within their school would be beneficial for the social development of all young children. Second, our findings indicate that young children in economically disadvantaged neighborhoods may benefit from building social capital. In other words, peer victimization in schools in low-SES neighborhoods may be reduced if schools implement effective antibullying policies such as schoolwide social skills training. In order to do so, schools in these neighborhoods may require more resources from the community and government in order to effectively establish such policies. Finally, our results suggest that peer victimization in young boys is less prevalent when they attend smaller schools. This may be an important issue for parents to consider when they are signing up their son for school attendance.

In conclusion, the results of this multilevel study further our knowledge about the contribution of school level characteristics to peer victimization in young children as well as suggest new areas for investigation. It will be important in future research to further investigate the contribution of school level factors to peer victimization in young children. In particular, longitudinal study of the links between school factors and the course of peer victimization is needed to enhance our understanding of young children's risk status and to build an evidence base to guide the development of prevention programs in order to decrease the harmful effects of victimization.

Appendix

Overview of the Items Used to Operationalize Peer Victimization

1. This child gets hit, kicked, or pinched by peers
2. This child gets pushed or shoved by peers
3. This child gets laughed at or ridiculed by peers
4. This child is called mean names (e.g., baby)

5. This child's things get taken away, damaged, or misplaced
6. This child gets ignored by peers
7. This child gets left out of the group
8. About this child nasty things are said by peers
9. This child gets pushed away, threatened with physical harm, or things get thrown at him/her
10. About this child mean things are said about his/her looks
11. This child gets told he/she is stupid
12. From this child things get taken away or destroyed
13. This child gets left out of fun games and activities by peers
14. Peers walk away from this child when he/she wants to play with them
15. Peers tell mean things about this child
16. This child gets laughed at by peers

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