Turun yliopisto
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BULLY-VICTIMS: PREVALENCE, PSYCHOSOCIAL ADJUSTMENT, AND RESPONSIVENESS TO INTERVENTION

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TURUN YLIOPISTON JULKAISUJA – ANNALES UNIVERSITATIS TURKUENSIS
Sarja - ser. B osa - tom. 406 | Humaniora | Turku 2015

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The originality of this thesis has been checked in accordance with the University of Turku quality assurance system using the Turnitin OriginalityCheck service.

ISBN 978-951-29-6240-2(PRINT)
ISBN 978-951-29-6241-9 (PDF)
ISSN 0082-6987
Painosalama Oy - Turku, Finland 2015

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ABSTRACT

In this thesis, a unique subgroup involved in the bullying phenomenon, the bully-victims, are identified and examined. Despite the increasing attention on the bully-victims in recent years, their prevalence, psychosocial adjustment, and response to anti-bullying programs has not been clearly determined. Three empirical studies were conducted in this thesis to examine the prevalence of bully-victims. Moreover, in study I, the psychosocial adjustment of bully-victims was compared with that of pure bullies, pure victims, and non-involved students. In study II, different forms of bullying and victimization were compared among pure bullies, pure victims, bully-victims, and non-involved students. In study III, the effectiveness of anti-bullying programs, in particular, the KiVa program, on bully-victims was demonstrated. Overall, bully-victims formed the smallest group comparing with pure bullies, pure victims, and non-involved students, and in general differed from pure bullies rather than pure victims in terms of subjective experience of maladjustment. They employed more verbal, physical, and cyberbullying perpetration, but not indirect bullying; and they were more victimized by verbal, physical, cyber, and indirect bullying. The KiVa anti-bullying program in Finland is effective in reducing the prevalence of bully-victims.

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ACKNOWLEDGEMENTS

There are many people that I want to thank for their help on this thesis.

First of all, I want to thank my supervisor Professor Christina Salmivalli for taking me in to the KiVa antibullying research group 5 years ago. It is this opportunity and Christina's trust that makes my future academic career possible. Thank you very much, Christina!

Then I would like to thank all of the coauthors and researchers that contributed to the publications included in this thesis. Xiang Li, Antti Kärnä, Ihno Lee, Todd Little, Marinus Voeten, Erkki Alanen, Elisa Poskiparta, Silja Saarento, Claire Garandeau, Annarilla Ahtola, Sanna Roos, Miia Sainio, Anne Haataja, Virpi Pöyhönen, Oskari Lahtinen, and Tiina Turunen, your invaluable suggestions and seminar discussions helped my manuscripts eventually became publications.

I also want to express my appreciation to people in the Department of Psychology, Jukka Hyönä, Pekka Niemi, Heikki Hämäläinen, Minna Varjonen, Nina Kramsu, Outi Nieminen, Mika Iivari, Marita Kantola, Henna Ruohonen, and Tuija Tuomisto, for your precious help during these years. You made my learning and working experience very much motivated.

I am greatly honored that Professor Peter Smith accepted to be the opponent and the reviewer of my thesis. I am also thankful to Dr. Marina Camodeca as the other reviewer of my thesis. Thank you very much for your excellent comments.

Finally, I thank my parents, all of my family members, and my friends, for supporting my study abroad.

Turku, August 2015

An

LIST OF ORIGINAL PUBLICATIONS

I **Yang, A., Li, X., & Salmivalli, C. (2015). Maladjustment of bully-victims: Validation with three identification methods. *Educational Psychology*, (Accepted). doi:10.1080/01443410.2015.1015492**

II **Yang, A., & Salmivalli, C. (2013). Different forms of bullying and victimization: Bully-victims versus bullies and victims. *European Journal of Developmental Psychology*, 723–738. doi:10.1080/17405629.2013.793596**

III **Yang, A., & Salmivalli, C. (2015). Effectiveness of the KiVa antibullying program on bully-victims, bullies, and victims. *Educational Research*, *57*(1), 80–90. doi:10.1080/00131881.2014.983724**

1. INTRODUCTION

Bullying and victimization cause varying extent of damage to the psychosocial wellbeing of children (e.g., Olweus, 1996a; Özdemir & Stattin, 2011; Pellegrini, Bartini, & Brooks, 1999; Veenstra et al., 2005). Bullying is defined as repeated aggression in which one or more persons intentionally harm or disturb another, relatively powerless individual physically, verbally, or psychologically (Olweus, 1996b). When one and the same child bullies others but is also being bullied by others, the child is considered a bully-victim (Solberg, Olweus, & Endresen, 2007).

There has been growing attention on bully-victims during the last couple of decades (e.g., Pellegrini et al., 1999; Schwartz, 2000; Solberg et al., 2007). Meanwhile, it is worth noting that there are mainly two lines of research tradition concerning the children who both perpetrate bullying and are victimized themselves. One tradition can be considered as "aggression research", in which studies focus primarily on victimization in a general aggression context without stressing the power differential. The concept of aggressive victims (usually identified by peer-nominations) is adopted in this tradition (e.g., Pellegrini et al., 1999; Schwartz, 2000; Unnever, 2005). The other tradition, emphasizing the power imbalance, can be deemed as "bullying research". The researchers of bullying-relevant topics tend to concentrate on the intention, repetition, and power imbalance of the aggressive behavior in the bullying context. The concept of bully-victims is employed in this tradition (e.g., Olweus, 1993a; Salmivalli & Nieminen, 2001; Solberg & Olweus, 2003; Solberg et al., 2007). The concepts of bully-victim and aggressive victim have sometimes been used interchangeably in the literature. In the current thesis, I follow the bullying research tradition so that the characteristics of aggressive intention, repetition over time, and power imbalance in the bullying concept can be taken into consideration together.

Previous studies have examined the prevalence of bully-victims (or aggressive victims) and their psychosocial adjustment, mostly using either self-reports or peer-nominations (e.g., Shin, 2010; Solberg & Olweus, 2003). However, due to the shortcomings of identification method used, the examination of prevalence of bully-victims and their psychosocial adjustment may be biased when only one method is utilized. Meanwhile, although the bully-victims are known to bully and

be victimized themselves (e.g., Solberg et al., 2007), in what way they bully and are victimized remains unclear. Further, despite a number of antibullying intervention programs that have been developed (Farrington & Ttofi, 2009), their effectiveness on bully-victims has seldom been tested.

The objectives of this thesis are, by identifying bully-victims using multiple methods, first, to examine the prevalence of bully-victims; second, to investigate the psychosocial adjustment of bully-victims (as compared with pure bullies and pure victims), as well as the forms in which they bully others and are victimized themselves; and third, to evaluate the effectiveness of KiVa antibullying program in reducing the prevalence of bully-victims, as compared with pure bullies and pure victims. In order to achieve these goals, the data collected in the context of the evaluation of the KiVa antibullying program (Salmivalli, Kärnä, & Poskiparta, 2010a) were utilized. The large sample size in the KiVa evaluation offered a great opportunity to obtain robust results and wide generalizability, such that the differences among pure bullies, pure victims, bully-victims, and non-involved students across the entire sample as well as that in different grade levels and among boys and girls can be compared.

1.1 Prevalence of Bully-victims

The prevalence estimate of bully-victims has not been consistent across studies. Besides the different conceptualization of bullying adopted from the two lines of research mentioned earlier, the variation in prevalence estimates could also be caused by, but not limited to, the following factors. Firstly, different informants have been involved, for example, self-reports or peer-reports (Solberg et al., 2007). Self-reports are useful for collecting information concerning individual subjective experience on bullying and victimization but may lack objectivity, whereas the peer-reports can decrease the individual bias but compromise the information regarding individual subjective experience (e.g., Bouman et al., 2012; Cornell & Brockenbrough, 2004; Perry, Kusel, & Perry, 1988).

Secondly, different cut-off points have been used to classify children. For instance, children reporting that they have bullied others or been bullied by others “once a week”, ”sometimes” (e.g., A. M. O’Moore & Hillery, 1989; Rigby,

1998), "now and then" (e.g., Bijttebier & Vertommen, 1998; Olweus, 1993a), "once or twice" (e.g., Forero, McLellan, Rissel, & Bauman, 1999; A. O'Moore, Kirkham, & Smith, 1997), or "two or three times a month" (e.g., Solberg & Olweus, 2003; Solberg et al., 2007) have been categorized as bullies and/or victims . Meanwhile, scoring 0.5 standard deviation *(SD)* (e.g., Schwartz, 2000), 0.8 *SD* (e.g., Schwartz, Dodge, Pettit, & Bates, 1997), or 1 *SD* (e.g., Coie, Dodge, & Coppotelli, 1982) above the sample mean have been employed for peer-reported bullying and victimization.

Thirdly, the group of bully-victims is relatively small. Few studies have had big enough samples for stable prevalence estimation. The number of bully-victims in previous studies ranged from only three students (0.4% of the sample, using "once a week" as the cut-off point) (A. M. O'Moore & Hillery, 1989) to 3,720 students (18.2% of the sample, using "once or twice" as the cut-off point) (A. O'Moore et al., 1997). Nevertheless, since the studies usually included participants of both genders in different ages, the subsamples of bullies and victims of different sex and in different grades can be extremely small (e.g., Solberg et al., 2007).

The above factors contribute to the varying prevalence of bully-victims, from 0.4% (3 students, subsample size of boys and girls were not reported; Grade 3 to 6; once a week as the cut-off point) to nearly 29% (39 boys, 29 girls; Grade 7 to 9; once or twice as the cut-off point) using self-reports (Schwartz, Proctor, & Chien, 2001; Solberg et al., 2007). When peer-reports were employed, the prevalence of bully-victims ranged between 4% (14 boys, 1 girl; Grade 4 to 6; 0.5 *SD* above the sample mean was used as the cut-off point) and 10% (14 boys, 5 girls; Grade 4 to 5; 0.75 *SD* above the sample mean was used as the cut-off point for "high aggression" or "high victimization", 0.25 *SD* below the sample mean was used as the cut-off point for "low aggression" or "low victimization") (e.g., Graham, Bellmore, & Mize, 2006; Schwartz, 2000; Toblin, Schwartz, Hopmeyer Gorman, & Abou-Ezzeddine, 2005). So far few studies have validated the prevalence of bully-victims using different informants in primary and secondary school, respectively. This is one of the objectives of the present thesis.

1.2 Psychosocial Adjustment of Bully-victims

The increasing attention on bully-victims has been mainly due to their suffering from adjustment difficulties (e.g., Perren & Alsaker, 2006; Veenstra et al., 2005). Bully-victims have been found to be more maladjusted than either pure bullies or pure victims (e.g., Olweus, 2003; Perren & Alsaker, 2006; Stein, Dukes, & Warren, 2007). Their adjustment difficulties include both internalizing problems, such as anxiety, depression, loneliness, and poor self-esteem (e.g., Haynie et al., 2001; Juvonen, Graham, & Schuster, 2003), and externalizing problem, such as being aggressive, highly emotional, hot tempered, and hyperactive (e.g., Besag, 1989; Haynie et al., 2001; Salmivalli & Nieminen, 2001). Bully-victims seem to score low on social competence and problem-solving skills, as well as have poor performance concerning school achievement and peer interactions (e.g., Cook, Williams, Guerra, Kim, & Sadek, 2010; Nansel, Craig, Overpeck, Saluja, & Ruan, 2004; Veenstra et al., 2005). It has been suggested that bully-victims have deficits in self-regulation (Olweus, 1997; Perry, Perry, & Kennedy, 1992), which makes it difficult for them to control their impulsivity and irritability, and to form goal-oriented social strategies (e.g., Schwartz et al., 1997, 2001).

Boys are much more likely to be bully-victims than girls (e.g., Veenstra et al., 2005). In primary school, male bully-victims seem less preferred by peers and more likely to feel lonely than female bully-victims (Kochenderfer-Ladd & Skinner, 2002). Bully-victims also tend to break more rules, have more attention and conduct problems, and are more socially disintegrated in primary school than in secondary school (Solberg, Olweus, & Endresen, 2010). It is not yet determined if these differences are due to the general gender and developmental effects, or because of being a bully-victim in particular.

Although previous research acknowledges the suffering of bully-victims, whether the situation of suffering vary when identified by different informants is still not clear. For instance, self-reported bully-victims seem to exhibit worse self-control/irritability and self-esteem, lower social competence, and higher level of depression and anxiety than pure bullies and pure victims (e.g., Haynie et al., 2001; Schwartz et al., 2001), whereas peer-reported bully-victims have been considered to be more disliked by peers than pure bullies and pure victims (e.g., Schwartz, 2000). Due to the characteristics of self-reports and peer-reports mentioned

earlier, it is likely that the situation of psychosocial adjustment of bully-victims reported by themselves and peers are not exactly the same within a single study.

Given the possible differential influence of informants on the psychosocial adjustment, above and beyond its influence on the prevalence of bully-victims, it is necessary to examine a wide range of psychosocial adjustment of bully-victims using multiple sources of information. The objective of Study I is to test the hypothesis that the bully-victims, whether identified by Olweus' two global measures (e.g., How often have you been bullied at school during the past couple of months? How often have you bullied another student during the past couple of months?), peer-nominations, or a profile method based on Olweus' multiple measures of specific bullying/victimization forms (e.g., I was hit, kicked or shoved. I hit, kicked or pushed someone.), form the most maladjusted group among their peers.

1.3 Bullying/Victimization Forms of Bully-victims

An important aspect associated with the psychosocial adjustment of bully-victims, concerns the forms by which they bully others and are victimized themselves (Unnever, 2005). There are direct forms of aggression and bullying, such as hitting, kicking or calling names, and indirect/relational forms, such as spreading rumors, manipulating or excluding (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Crick & Grotpeter, 1995). Being a bully-victim does not only mean a bully who is also somewhat victimized or the other way around. Bully-victims have been suggested to bully others more frequently than pure bullies and be victimized more frequently than pure victims in multiple forms (e.g., Unnever, 2005).

Specifically, given the emotion dysregulation, hot temper, and reactive aggression (Salmivalli & Nieminen, 2001; Schwartz et al., 2001), bully-victims might be especially high on direct (physical and verbal) bullying which does not require strategic intention and planning. Concerning indirect bullying forms, however, conducting these forms seems to require a lot of social power, high social intelligence and ability/skills to manipulate others (Kaukiainen et al., 1999), which might be difficult for bully-victims as they are usually considered to be socially unskilled, rejected by peers, and impulsive rather

than manipulative (Schwartz, 2000). In terms of victimization, bully-victims might be victimized even more frequently than pure victims, because they tend to be highly rejected (Boulton & Smith, 1994) and lack friendships that would protect them from aggressive attacks (Hodges & Perry, 1999). Furthermore, due to the modern communication technology, cyberbullying has been emerging through the use of electronic tools (Raskauskas & Stoltz, 2007; Smith & Slonje, 2010), which may be a new form of bullying and victimization for bully-victims as well.

Previous studies suggested that the forms of bullying and victimization utilized by boys and girls could be different, partly because the direct forms were more adaptive and normative for boys, and the indirect forms were likely to be perceived as more normative female behavior (e.g., Crick, Murray-Close, Marks, & Mohajeri-Nelson, 2009). Girls also form tighter interactive networks than boys, which makes it more likely for them to facilitate indirect or covert forms of aggression than boys (e.g., Lagerspetz, Björkqvist, & Peltonen, 1988; Schwartz et al., 2001). Some studies found that direct bullying decreases with age, whereas indirect bullying increases with age (e.g., Björkqvist et al., 1992). It is nonetheless difficult to speculate the same on bully-victims, as they lack the social intelligence, networking and manipulation skills (Kaukiainen et al., 1999) required by implementing indirect forms of bullying.

It is meaningful to study the forms of bullying and victimization among bully-victims so that their distinct behavioral pattern can be recognized by the theorists and practitioners. The unique bullying and victimization pattern of bully-victims can be in turn used for further understanding of their maladjustment (as compared with that of pure bullies and pure victims). Meanwhile, this pattern can serve as the baseline information so that bully-victims' engagement in traditional forms and cyber forms of bullying and victimization can be compared, and whether cyberbullying is especially typical for bully-victims can be examined (e.g., Smith & Slonje, 2010, p.258). The objective of Study II is to examine different forms of bullying and victimization perpetrated and experienced by bully-victims, compared with pure bullies and pure victims.

1.4 Intervention Effects on Bully-victims

Previous antibullying intervention and prevention literature usually focuses on bullies and victims. Bullying intervention programs usually show some positive effects on reducing bullying and victimization (Farrington & Ttofi, 2009). Nevertheless, their effectiveness on bully-victims has barely been tested. Considering the association between psychosocial adjustment and bullying/victimization, as well as bully-victims' high maladjustment and rates of bullying and victimization, it might be especially difficult to change their behavior or the treatment they receive from peers. Pure victimization can be recognized and helped by the peers and adults. However, victims who are also perpetrators of bullying seem to have a negative relationship with teachers (Olweus, 1993b) and a higher risk of being maltreated by school staff as compared with their peers (Khoury-Kassabri, 2009). They may also be less likely to be recognized as victims of bullying by the school personnel and receive help (Haataja, Sainio, Turtonen, & Salmivalli, 2014). Consequently, it seems plausible that bully-victims might be more difficult to be helped by interventions than pure bullies and pure victims.

Some programs have been tested with respect to their effects on bully-victims or aggressive victims. For instance, based on the Social Information Processing (SIP) model, Fung's program in Hong Kong intervened with 66 (Fung, 2012a) and 68 (Fung, 2012b) secondary school aggressive victims who were 11-16 years old. Ten 1.5-hour intervention sessions were divided into cognitive modification phase, behavioral and social skill training phase, and relapse-prevention and sustainability. Students, parents, and teachers were asked to assess students' problem behavior. The intervention resulted in a significant decrease in the self- and the teacher-reported reactive aggression of aggressive victims (Fung, 2012a, 2012b). However, the intervention effects were not compared among aggressors, victims, and aggressive victims although these groups of children were identified. Further, without a control group, the intervention effects in either study were not conclusive because they were mixed with other effects (e.g., maturation), which hindered the understanding of the intervention effect on aggressive victims.

Yanagida and colleagues (Yanagida, Strohmeier, & Spiel, 2013) evaluated the effect of the one-year ViSC program on 1127 students of 18 secondary schools in Austria. By employing the random control-group pretest-posttest design, the

results showed a positive intervention effect on bully-victims, in which 63% of bully-victims in the intervention group transited to non-involved group, whereas in the control group only 38% of bully-victims transited to non-involved group. The transition probability of pure bullies to non-involved students was 53% in intervention group and 48% in control group, whereas the transition probability of pure victims to non-involved students was 66% in intervention group and 50% in control group.

In Finland, a national KiVa antibullying program has been developed (Salmivalli et al., 2010a; Salmivalli, Kärnä, & Poskiparta, 2010b). The evaluation of the effectiveness of KiVa has shown positive results. For instance, Kärnä and colleagues (2013) found that both self-reported victimization and bullying were on average reduced by 20% for students in grades 1 to 9. However, the effectiveness of KiVa program on bully-victims, in comparison to effects on pure bullies and pure victims, has not been evaluated. This is the objective of Study III.

2. AIMS OF THE THESIS

The main aim of the present thesis was to examine the following questions:

1. How prevalent are bully-victims? (Study I, II, and III)

2. Are bully-victims more maladjusted than pure bullies and pure victims in terms of internalizing problems, peer relationships, and perception of school climate? (Study I)

3. Do bully-victims bully more and are they victimized more than pure bullies and pure victims in physical, verbal, indirect, and cyber forms? (Study II)

4. Can an anti-bullying intervention be as effective with bully-victims as with pure bullies and pure victims? (Study III)

3. METHOD

3.1 Study Samples and Procedures

The data used in this thesis were collected during the randomized controlled trial evaluating the effectiveness of the KiVa antibullying program in Finland during 2007 and 2008 for Grades 3 to 5 and during 2008 to 2009 for Grades 1 to 2 and Grade 7 to 8 (Salmivalli et al., 2010a). The overall sample consisted of students from Grades 1 to 6 in primary school and from Grades 7 to 9 in secondary school of 198 Finnish schools. In the Finnish school system, children start school (Grade 1) at the year they turn to 7 years old. The transition from primary to secondary school takes place after Grade 6, and Grade 9 is the last year of the compulsory schooling.

Student data were collected three times during a school year. For the purpose of this thesis, only data from Time 1 (pretest) and Time 3 (posttest) were utilized. Time 1 data were collected in May before the KiVa intervention was carried out in the coming school year (from August to next May), and the Time 3 data were collected in next May, at the end of school year.

Students with an active parental consent completed internet-based questionnaires in the schools' computer labs during school hours. The measurement process was supervised by teachers who had been instructed prior to the data collection. The questionnaires and related items were randomized across students and the students were not allowed to see each other's answers. All the information obtained from the questionnaire was kept confidential and for research purpose only.

3.2 Participants

The specific sample used in each study varied as some of the questions for the students in higher grade levels were not presented to students in the lower grades (in order to keep the questionnaire of younger children short enough, and to avoid asking them too difficult questions). Meanwhile, the dropout of participants and

the availability of the classroom ID also influenced the sample size when multilevel modeling was employed. An overview of the sample for each study is showed in Table 1.

Table 1. Overview of the sample size in each study

	Study I	Study II	Study III
Total	17,586	19,869	23,520
Primary School (Grades)	7,279 (3-5)	9,562 (1-5)	12,450 (1-5 [2-6 on Time 3])
Secondary School (Grades)	10,307 (7-8)	10,307 (7-8)	11,070 (7-8 [8-9 on Time 3])
Boys	8,615	9,772	11,598
Girls	8,971	10,097	11,922

3.2.1 Participants of Study I

Study I involved 17,586 students with data on both self- and peer-reported bullying and victimization. Time 1 data from the evaluation study of KiVa program were used. Due to the lack of some focal variables in the short questionnaire, students in Grades 1 and 2 were excluded. Further, students who were going to make the transition from the primary to the secondary school (Grade 6) or to finish their compulsory schooling (Grade 9) before the KiVa intervention were not included in the sample.

3.2.2 Participants of Study II

In Study II, there were 19,869 students with Time 1 data on both self- and peer-reported bullying and victimization. All the students from Grades 1 to 5 and from Grades 7 to 8 were involved. Students in Grades 6 and 9 were excluded for the same reason as in Study I.

3.2.3 Participants of Study III

In study III, the Time 1 and Time 3 data of the evaluation of KiVa program on Grades 2 to 6 and Grades 8 to 9 were utilized as the pretest and the posttest of the study. The target sample consisted of 23,520 students with data on both self- and peer-reported bullying and victimization from 738 intervention classrooms and 647 control classrooms in 195 Finnish schools. There were 12,450 primary (grades 2-6, 52.9%) and 11,070 secondary (grades 8-9, 47.1%) school students

3.3 Measures

An overview of the measures concerning self and peer-reported bullying and victimization is provided in Table 2. For self-reported bullying and victimization in Study I, the two global measures and six measures regarding specific forms of bullying and victimization were employed. For self-reported bullying and victimization in Studies II, the two global measures and five measures regarding specific forms of bullying and victimization were employed. For self-reported bullying and victimization in Studies and III, only the two global measures from the Olweus' Bully/Victim questionnaire (Olweus, 1996b) were used. For peer-reported bullying and victimization in all studies, the bullying and victimization subscales from the Participant Role Questionnaire (Salmivalli & Voeten, 2004) were used.

Table 2. Overview of bullying and victimization measures

Measure	Sample item	
Olweus' Bully/Victim Questionnaire (Self-reports)		
Global measures		
Bullying	How often have you been bullied at school during the past couple of months?	0 = *Not at all* *1 = Only once or twice* *2 = Two or three times a month* *3 = About once a week* 4 = *Several times a week*
Victimization	How often have you bullied another student during the past couple of months?	0 = *Not at all* *1 = Only once or twice* *2 = Two or three times a month* *3 = About once a week* 4 = *Several times a week*
Specific measures		
Bullying (Cronbach's α = 0.80)	I hit, kicked or pushed someone.	0 = *Not at all* *1 = Only once or twice* *2 = Two or three times a month* *3 = About once a week* 4 = *Several times a week*
Victimization (Cronbach's α = 0.87)	I was hit, kicked or pushed.	0 = *Not at all* *1 = Only once or twice* *2 = Two or three times a month* *3 = About once a week* 4 = *Several times a week*
Participant Role Questionnaire (Peer-reports)		
Bullying (Cronbach's α = 0.92)	He/She starts bullying.	0.00–1.00
Victimization (Cronbach's α = 0.78)	He/She is being pushed around and hit.	0.00–1.00

3.3.1 Measures of Study I

For assessing *self-reported bullying and victimization*, the two global measures (Table 2) concerning bullying and victimization, respectively, from the Olweus' Bully/Victim questionnaire (Olweus, 1996b) were used. The response "two or three times a month" was utilized as the cutoff point (Solberg & Olweus, 2003) to gain the bullying/victimization status, namely, individuals who reported being bullied/bullying others 2-3 times a month or more often were considered as pure victims or pure bullies, respectively. Bully-victims had a score of two or higher on both items whereas non-involved scored below two on both items.

To obtain the latent bullying/victimization profiles, six items regarding the specific forms of bullying and victimization (physically attacking/attacked, calling/called names, spreading/spread lies, excluding or ignoring/excluded or ignored, materially bullying/bullied, and threatening or forcing/threatened or forced), respectively, from the self-reported Olweus' Bully/Victim questionnaire (Olweus, 1996b) were used. The item scores were modeled using latent class analysis (LCA) (Collins & Lanza, 2010). The model fit index, the meaning of each item, and the posterior item probabilities can be used to define the appropriate number of latent classes and their theoretical meaning (e.g., Wang & Hanges, 2011).

To assess *peer-reported bullying and victimization*, participants nominated from a list of classmates those who fit descriptions of bullying (Salmivalli & Voeten, 2004) and victimization (Kärnä, Voeten, Poskiparta, & Salmivalli, 2010) on three items, respectively (Table 2). For each item, an unlimited number of classmates who fit the description could be nominated. Participants were also allowed to choose "no one". Peer nominations received for each item were divided by the number of classmates responding, resulting in a proportion score ranging from 0.00 to 1.00 for each student on each item. The proportion scores were averaged across the three items for both bullying and victimization. Students were classified into pure bullies, pure victims, bully-victims, and non-involved students following Schwartz's (2000) stringent cut-off point (1 *SD* above the sample mean).

Participants whose bullying and victimization scores were both greater than 1 *SD* above the sample mean were identified as bully-victims; participants whose victimization score was greater than 1 *SD* above the mean were identified

as pure victims; participants whose bullying score was greater than 1 *SD* above the mean were identified as pure bullies; and participants whose bullying and victimization scores were both less than 1 *SD* above the mean were identified as noninvolved.

To assess the psychosocial adjustment of the participants, self-reported measures concerning self-esteem among peers, depression, social anxiety, general perception of peers, relationship with classmates, perception of the class climate, and perception of the school climate were utilized.

Self-esteem among peers was measured by 10 items derived from the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Items (e.g., I am more or less satisfied with myself) were slightly adapted in that children were instructed to "report the way you feel about yourself when around peers" (e.g., Salmivalli, Ojanen, Haanpää, & Peets, 2005). Participants answered on a five-point scale ranging from 0 = *Not at all* to 4 = *Exactly true* (Cronbach's $\alpha = 0.81$).

Depression was measured with seven items assessing cognitive-affective symptoms derived from the Beck Depression Inventory (Beck, Steer, & Garbin, 1988). All items asked for students' feelings over the prior two weeks and included questions such as "How satisfied or dissatisfied do you feel with yourself?" and "How was your mood?" Items were assessed on a 5-point scale ranging from 0 (e.g., *bright and good)* to 4 (e.g., *so depressed and downcast that I cannot take it anymore*) (Cronbach's $\alpha = 0.86$).

Social anxiety was measured by nine items (e.g., "I am worried about what others think of me") based on a five-point scale ranging from 0 = *Not at all* to 4 = *Exactly true* (Cronbach's $\alpha = 0.88$) (Garcia-Lopez, Hidalgo, Beidel, Olivares, & Turner, 2008).

General perception of peers was measured by 13 items (e.g., "they can really be relied on") that described positive and negative peer perceptions on a five-point scale ranging from 0 = *Not at all* to 4 = *Exactly true* (Cronbach's $\alpha = 0.89$) (Salmivalli et al., 2005).

Relationship with classmates was measured by three items (e.g., "I have good friends in my classroom") based on a five-point scale ranging from 0 = *Totally disagree* to 4 = *Totally agree* (Cronbach's $\alpha = 0.81$).

Perception of the class climate was measured by three questions (e.g., "There is a good atmosphere in my class") (Metsämuuronen, Svedlin, & Ilic, 2012) based on a five-point scale ranging from 0 = *Totally disagree* to 4 = *Totally agree* (Cronbach's $\alpha = 0.73$).

Perception of the school climate was measured by five questions (e.g., "I feel safe at school") based on a five-point scale ranging from 0 = *Totally disagree* to 4 = *Totally agree* (Cronbach's $\alpha = 0.79$) (Metsämuuronen et al., 2012) .

3.3.2 Measures of Study II

Self-reported bullying and victimization, the two global measures and five items regarding the specific forms of bullying and victimization (physically attacking/attacked, calling/called names, spreading/spread lies, excluding or ignoring/excluded or ignored, and cyberbullying), respectively, from the self-reported Olweus' Bully/Victim questionnaire (Olweus, 1996b) were used.

Peer-reported bullying and victimization were assessed by using the same measures as in Study I.

3.3.3 Measures of Study III

For both of the pretest and posttest, *self-reported bullying and victimization* using Olweus' global measures, and *peer-reported bullying and victimization* were assessed by using the same measures as used in the Study I.

3.4 Statistical analyses

For Study I, multilevel latent class analysis (LCA) was employed to obtain the bullying/victimization status of each child. Two-level multivariate regression analysis, with students as the first level and the classrooms as the second level, was utilized to compare the psychosocial adjustment of bully-victims, with pure bullies, pure victims, and non-involved students. For Study II, multivariate analysis of variance (MANOVA) was conducted to compare pure bullies, pure victims, bully-victims, and non-involved students on the forms of bullying and victimization. In Study III, two-level multinomial logistic regression was conducted, with students

as the first level and the classrooms as the second level, to examine the effectiveness of KiVa program on decreasing the risk of being bully-victims, as well as being pure bullies and pure victims. The missing values in Study II were handled by the expectation-maximization (EM) algorithm, and in Study I and Study III the Full Information Maximum Likelihood (FIML) algorithm was used. All the analyses were done by SPSS 19 and Mplus 7.

4. OVERVIEW OF EMPIRICAL STUDIES

STUDY I

Yang, A., Li, X., & Salmivalli, C. (2015). Maladjustment of bully-victims: Validation with three identification methods. *Educational Psychology*, (Accepted). doi:10.1080/01443410.2015.1015492

Although knowledge on the psychosocial maladjustment of bully-victims has been increasing, the findings have been principally gained by utilizing a single method to identify bully-victims. The present study examined the psychosocial adjustment (internalizing problems, peer relationship, and perception of school climate) of bully-victims (as compared with pure bullies and pure victims) identified by Olweus' global measures, peer-nominations, and a profile method based on Olweus' multiple measures of bullying/victimization forms. The sample included 17,586 students from Grade 3 to 8 (9 to 15 years old) in Finland. The results suggested that bully-victims formed the smallest group across all identification methods. The subjective experience of maladjustment among bully-victims differed from that of pure bullies, rather than that of pure victims. Bully-victims who utilize multiple forms of bullying and are frequently victimized by multiple forms (those identified by the profile method) may be even more maladjusted than the "pure" victims. When identified by the profile method based on multiple measures, the prevalence of bully-victims was much smaller than those identified by Olweus' global measures and peer-reports, indicating a more stringent criterion in the profile method based on LCA. The complicated pattern due to the two- and three-way interaction effects among bullying/victimization status, gender, and grade level (primary school *vs*. secondary school) suggested that the differences of psychosocial adjustment among pure bullies, pure victims, bully-victims, and non-involved students varied across gender and grade level. The small subsample size and large standard errors for female bully-victims in secondary school indicated that even larger samples are needed in future studies so that the difference among bullying/victimization status groups on psychosocial adjustment can be clarified.

STUDY II

Yang, A., & Salmivalli, C. (2013). Different forms of bullying and victimization: Bully-victims versus bullies and victims. *European Journal of Developmental Psychology*, 723–738. doi:10.1080/17405629.2013.793596

Although much is known about bully-victims, the forms of bullying they employ and experience have received little attention. The present study examined the extent to which bully-victims (in comparison to pure bullies and pure victims) are perpetrators and targets of verbal, physical, indirect, and cyber bullying. The sample included 19,869 students from Grade 1 to 8 (7 to 15 years of age). Bully-victims (whether identified by self- or peer-reports) perpetrated significantly more physical and verbal bullying than pure bullies. They also tended to score higher than pure bullies in cyberbullying, but not in indirect bullying. With respect to victimization, bully-victims were more frequent targets of all four forms of victimization than pure victims. Compared with primary school students, secondary school students utilized more verbal, indirect, and cyberbullying, but less physical bullying (in the model with both self- and peer-reports); they were also victimized themselves more on verbal, indirect, and cyber victimization, but less on physical victimization in the model with self-reports and on all four forms of victimization in the model with peer reports. Boys bullied more on all forms than girls did in the model with self-reports, but peers considered no significant difference between boys and girls on the forms of bullying; boys were victimized more than girls on verbal and physical form, but less on cyber victimization; boys were also victimized more than girls on indirect form in the model with self-reports, but less than girls in the model with peer-reports. The frequent victimization experiences of bully-victims may be one factor contributing to their high maladjustment reported in the literature.

STUDY III

Yang, A., & Salmivalli, C. (2015). Effectiveness of the KiVa antibullying program on bully-victims, bullies, and victims. *Educational Research*, *57*(1), 80–90. doi:10.1080/00131881.2014.983724

Although several effective school-based bullying intervention programs have been developed to reduce bullying and victimization, it has rarely been investigated whether intervention programs are also effective in helping bully-victims. This

study investigates the effectiveness of the KiVa antibullying program in reducing the prevalence of bully-victims, as compared with pure bullies and pure victims. The target sample consisted of 23,520 participants (age range 8 to 15 years) from 738 intervention classrooms and 647 control classrooms in 195 Finnish schools. In favor of the KiVa effect, the prevalence of pure bullies, pure victims, and bully-victims decreased (relative to control schools) by 12%, 14%, and 8% (self-reports), and by 14%, 6%, and 41% (peer-reports). The students in KiVa condition were 1.26, 1.35, and 1.51 times less likely to be self-reported pure bullies, pure victims, and bully-victims, and 1.20, 1.24, and 1.63 times less likely to be peer-reported pure bullies, pure victims, and bully-victims than those in control condition. KiVa is effective in reducing the prevalence of pure bullies, pure victims, as well as bully-victims. The findings suggest that intervention for bully-victims is not more difficult than that for pure bullies and pure victims.

5. GENERAL DISCUSSION

This thesis examined the prevalence and characteristics of bully-victims, and demonstrated the effectiveness of intervention, specifically, the KiVa antibullying program, on bully-victims. Across three empirical studies, bully-victims were repeatedly demonstrated to be the smallest group (less than 3% of the sample) (compared with pure bullies, pure victims, and non-involved students), regardless of the identification method employed. This was consistent with previous findings (Solberg et al., 2007), suggesting that bully-victims formed a small but separated group from pure bullies and pure victims.

Although consistently been found as the smallest group, the bully-victims identified using self-reports and peer nominations did not reach consistency across the three studies. The discrepancy could be considered as an outcome of whether the bullying or victimization is treated as a personal problem or a social problem in the peer interaction context. The self-reported bullying and victimization were usually associated with personal attributes ("things only I know"), such as anxiety, depression, and self-esteem (e.g., Hawker & Boulton, 2000; Kaltiala-Heino, Rimpelä, Rantanen, & Rimpelä, 2000). The peer-reported bullying and victimization were mainly guided by the characteristics that peers can see, such as friendship and peer acceptance (e.g., Caravita, Di Blasio, & Salmivalli, 2009; Juvonen et al., 2003). The differing cues individuals or the peers utilized influenced their attribution process (e.g., whether bully-victims caused the consequences or if they are in control) (Graham & Juvonen, 2001) and their conclusions concerning an individual's status as a bully-victim.

Bully-victims' subjective experience of maladjustment differed from that of pure bullies and non-involved students, but not from that of pure victims (Study I). These differences were found across identification methods and in most gender and grade groups. For some subgroups (e.g., female bully-victims in secondary school, 20 identified by peer-reports, and only 8 identified by the profile method) the small subsample size may explain the lack of differences, as suggested also by large standard errors. Bully-victims were found to be (marginally) more maladjusted than victims only when they were identified by latent class analysis based on multiple items on bullying and victimization.

This identification led to the smallest group of bully-victims, who experienced being victimized and bullying others frequently in multiple ways (as suggested by item probabilities); they were probably the most evident and "severe" bully-victims. This can actually be seen from the mean (mal)adjustment scores across identification methods, as bully-victims identified by the profile method were more maladjusted than bully-victims identified by any other method (this is true of pure bullies and victims identified by the profile method as well; the profile method based on LCA sets the criterion of being identified as a bully, victim, or bully-victim relatively high). The interpretation of the two-way and the three-way interactions found among being a bully-victim, gender, and grade level were challenging, as no clear pattern was detected, indicating that a larger sample of bully-victims is needed to clarify their pattern on psychosocial adjustment.

Due to the similarity with victims (Pellegrini et al., 1999) and their dual role (e.g., Perren & Alsaker, 2006), bully-victims are more anxious and depressed than either pure bullies or pure victims (e.g., Craig, 1998; Haynie et al., 2001). The negative emotional experience accompanied by the internalizing problems may be followed by negative attitudes and beliefs that bully-victims hold about themselves and others (e.g., Cook et al., 2010), which may later contribute to even enhanced internalizing problems. Bully-victims usually come from families in which the parents are coercive, hostile and rejecting, and less involved in their children's life (e.g., Bowers, Smith, & Binney, 1994). They also tend to be bullied at home by their siblings, which may lead to their bullying back for the purpose of getting even (e.g., Swearer & Cary, 2003). Such a home environment may provide more negative feedback to the children in the interactive activities, which in turn, negatively influences their self-confidence, understanding on emotional information, and related strategies when making friends. Meanwhile, the aggressive side of bully-victims and the co-occurrence of lacking appropriate social problem-solving skills (e.g., Cook et al., 2010) may lead to more difficulties in the challenges of making friends. Ziv and colleagues (Ziv, Leibovich, & Shechtman, 2013) found a similar social information processing pattern between bullies and victims, that they both tend to expect others to be hostile and aggressive. Consequently, as the mixture of bullies and victims (e.g., Perren & Alsaker, 2006), bully-victims may have an enhanced experience of hostility and aggression, which makes them distrust others (Ireland & Archer, 2004) and

perceive that they are the most excluded and unwelcome students in the school context.

In terms of forms of bullying and victimization, the high probability of both bullying and being victimized via multiple forms indicated that bully-victims utilized a distinct pattern of aggression (Study II). They employed clearly higher levels of physical and verbal bullying than pure bullies; however, they did not employ more indirect bullying than pure bullies (Study II). This corresponds to the previous findings that bully-victims lack peer relationships (Schwartz, 2000), social intelligence (Kaukiainen et al., 1999) and social manipulation skills (e.g., Björkqvist et al., 1992), which are the important prerequisites for implementing indirect bullying. Bully-victims were also victimized more than victims on physical, verbal, indirect, and cyber forms (Study II). Lack of friends seems to be one important reason that leaves bully-victims less protected (Hodges & Perry, 1999), which may contribute to the worse victimization.

Considering the effectiveness of antibullying intervention on bully-victims (Study III), KiVa program showed significant positive effects in reducing the prevalence and risk of being pure bullies, pure victims, and bully-victims. Interestingly, although the bully-victims were considered as a unique subgroup, they might intentionally or accidentally provided positive feedbacks to bullies or encouraged the bullying behavior in the peer interaction, which promoted further bullying behavior. Thus, in addition to the similarity with pure bullies and pure victims, it is possible that bully-victims' reactive response to the bullying situation may sometimes contribute to them a role of reinforcer. Although the bully-victims possessed different bullying/victimization patterns, and were usually described as the most difficult students in school (Carney & Merrell, 2001; Olweus, 2003; Pellegrini et al., 1999), the results suggested that bully-victims are not more difficult to be intervened than their peers.

5.1 Strengths

First, a large sample from the nation-wide KiVa antibullying program was utilized in this thesis so that the bully-victims, a small group of students, could

be examined in a robust way. Importantly, we had a very rare opportunity to look at the gender and grade level differences inside the population of bully-victims. Second, with this large sample size and a wide range of measurements concerning the psychosocial adjustment and forms of bullying and victimization, we were able to obtain relatively stable results regarding how the pure bullies, pure victims, and bully-victims adjust and to what extent do they differ from each other in terms of the ways they bully and are victimized. Third, multiple methods were used to identify pure bullies, pure victims, bully-victims, and non-involved students so that the common method bias could be reduced in our studies. Fourth, the utilization of randomized control trial in the KiVa program makes the evaluation of the effectiveness of intervention more accurate and robust.

5.2 Limitations and directions for future research

There were several limitations in this thesis. First, the hierarchical nature of the data (students nested within classrooms nested within schools) was not taken into account in Study II. It is important for the future studies to either control for or analyze the influence of the classroom- and school-level difference. Second, only cross-sectional design was employed in Studies I and II. Future studies could utilize longitudinal design so that the direction of effects could be examined. Third, the prevalence of pure bullies, pure victims, and bully-victims resulted from different identification methods did not reach consistency, and constructs concerning externalizing problems were not measured in Study I. Future studies could employ other methods for the identification of bullying/victimization status, such as the item response theory model. More adjustment related constructs could also be involved so that wider understandings about bully-victims' psychosocial adjustment could be obtained. Fourth, the forms of traditional bullying and victimization assessed in study II (e.g., verbal bullying, social exclusion) could also be carried out by electronic means. Future studies may want to take the medium (e.g., internet vs. real life) into account when assessing the bullying and victimization. Fifth, in this thesis, pure bullies, pure victims, bully-victims, and non-involved students were considered as different groups. However, from a developmental perspective, students from these

groups can transit into other groups from time to time as they grow older (see also Forero et al., 1999; O'Moore et al., 1997). Future studies could try to figure out how they transit among the groups and identify factors influencing such transitions.

5.3 Conclusions and implications

In conclusion, firstly, bully-victims usually consisted of boys rather than girls, formed the smallest group, and in general differed from pure bullies rather than pure victims in terms of subjective experience of maladjustment. However, those bully-victims who utilize multiple forms of bullying and are frequently victimized by multiple forms (those identified by profile method in study I), may be even more maladjusted than "pure" victims. Secondly, bully-victims in general employed more verbal, physical, and cyberbullying perpetration, but not indirect bullying, and they were more targeted as victims on verbal, physical, cyber, and indirect bullying. Thirdly, the main effects of grade level and gender showed that secondary school students used more verbal, indirect, and cyberbullying than primary school students, whereas primary school students used more physical bullying than secondary school students; no consistent gender effects were found between self-reports and peer-reports. Secondary school students were more verbally, indirectly, and cyber victimized (only in the model with self-reports) than primary school students; but they were less physically victimized (in the model with self-reports) and overall less victimized on all the forms of victimization (in the model with peer-reports) than primary school students; boys were victimized more on verbal and physical, but less on cyberbullying than girls. Fourthly, KiVa is effective in reducing the prevalence of pure bullies, pure victims, and bully-victims.

Our findings suggested that when multiple methods were used to identify the bullying/victimization status, the profile method based on the latent class analysis (regarding the specific forms of bullying and victimization) seemed to have a more stringent criterion than Olweus' global measures and peer-reports. It showed much smaller prevalence of bully-victims, as well as pure bullies and pure victims. The intervention on bully-victims might not be more difficult than that

on pure bullies and pure victims. However, teachers should be trained to recognize bully-victims.

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