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Applying multiple indices to monitor bullying longitudinally: A case of a Japanese junior high school

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Abstract

This article aimed to demonstrate the multiple ways to monitor the condition of bullying in a whole school level as well as year group and class levels by using traditional index of the change in number of reported bullying / victimization, in conjunction with new indices of the bully / victim ratio and the number of helpless victims. The study showed that along with the traditional index, by applying these new indices to monitor the prevalence and severity of bullying in different levels, we managed to have alternative views for the interpretation of the condition which enable schools and teachers to detect certain units of students that might face with a more serious situation than others, and this in turn enables them to detect and to intervene those silent helpless victims. Along with the monitoring of the condition of bullying in different levels, antibullying activities were implemented by the student committee to raise antibullying attitudes among students as well as teachers and other school staffs, and it was also examined how this affects the condition of bullying. Although the antibullying activities were conducted on a whole-school basis, there were considerable differences in its effects between classes and year groups , which may due to the time and effort students put into the activities. Some limitations and implications of the study are also discussed.

Keywords: monitoring, bully/victim ratio (BVR), number of helpless victims (NHV)

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Introduction

Bullying is generally defined as an intentional aggressive act characterized by repetition of actions and asymmetric power relationships (Olweus, 1999). Three decades of research on bullying around the world, including research on *ijime* in Japan, considered the most similar concept to bullying in the West and confirmed the extensiveness and diversity of the problem (Smith, Morita, Junger-Tas, Olweus, Catalano, & Slee, 1999). Many studies identified the serious negative consequences of being victimized, of bullying others, and of being a bystander, not only for individuals but also for the climate of classes, year groups and schools in general (Boulton, Trueman, & Murray, 2008; Obermann, 2011; Rivers, Poteat, Noret, & Ashurst, 2009; Sweeting, Young, West, & Der, 2006; Ttofi, Farrington, & Lösel, 2011). Whether a child becomes a stable victim may depend on the child's ability to use internal resources to respond to the victimization. Sometimes external assistance is available, though victims often tolerate the mistreatment because of the fear of bullying getting worse or of not having enough support from others (Kanetsuna & Smith, 2002). Recently, attentions of researchers and practitioners have been directed towards bystanders for bullying prevention and intervention, as bullying mostly takes place in the playground, classrooms, or corridors, where other children are likely to be present (Whitney & Smith, 1993; Wiens & Dempsey, 2009). However, Pergolizzi, Richmond, Macario, Gan, Richmond, and Macario (2009) revealed high level of apathy among bystanders, claiming that half of their participating students did nothing when they witnessed others being bullied, and 40 % of them considered the bullying as none of their business.

Indices to evaluate antibullying interventions

In light of these issues, a wide variety of antibullying intervention projects has been developed and implemented worldwide, and a number of meta-analyses have been carried out on the effectiveness of such projects. The outcomes of some earlier meta-analyses suggested that overall effects were minimal. For example, Smith, Schneider, Smith, and Ananiadou (2004) reviewed 14 antibullying intervention studies implemented in 11 different countries, and re-evaluated the intervention effects of each study by using the change on outcome measures between pretest and posttest. They found that the effects of intervention projects fell almost exclusively into the categories of small, negligible, and negative for both victimization and bullying outcomes. Only one condition in one study was categorized as having a medium effect, and none was categorized as large. More recently, Ttofi and Farrington (2011) reviewed 53 different school-based intervention projects and meta-analyzed 44 of these, and revealed more positive outcomes. They found that, on average, the projects reduced bullying by around 20-23 % and victimization by around 17-20 %. They also reported that some individual projects, such as KiVa in Finland, have yielded reductions of around 40-50 %, at least in some age groups.

These evaluation studies and meta-analyses are certainly an important source of information for developing future successful bullying prevention and intervention programs. However, it has also been noted that we should not rely too much on a single source of

data for outcome measures (Smith et al., 2004), and should consider how to interpret the evaluation data very carefully (Toda, Strohmeier, & Spiel, 2008). Most of these evaluations expect reductions of the number of reported bullying and victimization incidents within the school as a whole. Although the goals of such prevention and interventions are to reduce as much bullying as possible, results can be statistically significant even when the size of the reduction is a few percentage points. Others would regard a project as successful if there is a 50 % reduction, as was reported in the Bergen project in Norway or KiVa in Finland, for instance (Olweus, 1999; Salmivalli, Kärnä, & Poskiparta, 2011). However, the practical consequence of even a 50 % reduction means that a considerable number of victims still remain. Therefore, in order for schools and teachers to provide children a safe and secure school and class environment, it is not only crucial to evaluate the effectiveness of any antibullying activities, but it is also important to monitor the prevalence and severity of bullying at school on a regular basis even after the project is finished, on the level of a whole school as well as on year-group and class levels so as to detect those students who may be victimized continuously or severely.

New indices to monitor bullying

Regarding these issues of assessment measures for regular monitoring and evaluation of antibullying activities, and the way to interpret the results of such monitoring and evaluation, Toda et al. (2008) raised some important points. Firstly, it is important to monitor bullying not only on a whole-school basis but also on a year group and a class basis. This is because bullying most often happens within a group interaction process where certain relationships between students are already formed, mostly within school classes or at least within the same year group to which students belong (Morita, 2006; Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996; Kanetsuna, 2009). Secondly, they argued for the importance of detecting 'the number of helpless victims (NHV)' who cannot fight back against bullies or seek any social help from others, as these helpless victims are likely to be harmed most severely in bullying situations. Although it is very difficult to make the overall number of reported victimization to zero, we at least should try to make the NHV to zero so as to prevent the worst scenario of suicide of victimized children. Finally, they argued for the importance of focusing on the process of collectivization of bullies and disempowerment of victims. Toda et al. (2008) argued that victimization can be understood as a process whereby, at the level of individuals, it is a function of frequency and the number of perpetrators, while on the level of groups, the process can be described in terms of 'bully / victim ratio (BVR)'. They further argued that bullying among stable groups would be predicted to start at low frequency, with less harmful negative behaviors carried out with many victims involved, and with the BVR therefore likely to be 1.0 or below. However, after a certain period of time, a particular pupil would be singled out as a stable victim and the aggressive acts would be repeated towards the same target, and at the same time, more aggressors would join in. In this case, the BVR would be above 1.0. These alternative indices of the BVR and the NHV may reveal the seriousness of the situation, which highlights the cases that are a priority for intervention. Indeed, the cross-cultural study done by Toda et al. (2008) revealed that

this group nature of victimization can be seen in both Eastern and Western cultures, and that the BVR varies between classes and year groups. This suggest that even if the reported bullying and victimization overall decreased, there could be a class that needs more support than other classes. They further argued that it is quite likely that this BVR could be increased rather than decreased over a certain period of time, though this has not yet been investigated.

Study aim

The current paper therefore aimed to demonstrate the multiple ways to monitor the prevalence and severity of bullying at whole school as well as year-group and class levels, and to examine how the prevalence and severity might change longitudinally including ongoing periods of the antibullying activities conducted by student committees using both traditional index of the change in reported bullying/victimization, in conjunction with new indices of the BVR and the NHV. These traditional and new indices can be applied in a mutually complementary manner to monitor the overall prevalence and severity and effects of the antibullying activities, and to gain the insights into the risk level of a particular class or year group. Along with the traditional index, by applying BVR, we can identify high risk classes, and by applying NHV, we can see how close we would be to the goal to reduce high risk victims to zero. We believe this in turn helps us to know where further intervention might be needed. Although this paper describes antibullying activities conducted in one school without any control groups, the main aim is to illustrate the importance of applying a number of different indices for monitoring bullying by presenting the diversity of the results obtained by those multiple indices.

Method

Participants

A junior high school in an urban district in the west part of Japan has participated in this study. The participating school was state funded and located in a newly developed residential area. All the students there participated and their age range was 12-15 years. Each year group consisted of two classes. The students were generally from middle class families.

The study was longitudinal, lasting two academic years with four survey points, two per year. At the end of the first academic year, all participants advanced to the next grade and the original third year students moved to new schools and new first years entered the school. The total number of participants at each wave of data collection is as follows: the first survey point: 193 students; the second survey point: 191 students; the third survey point: 195 students; and the forth survey point: 185 students. The distribution of participants is shown in Table 1. At each survey point, the proportions of males and females were between 40 to 60 % in each class of each year group, and schoolwide percentage of males was 52 % and females 48 %.

Table 1:
Number of participants in each time of survey point

			T1	T2	T3	T4
3rd Years	Class 1	Male	12	12	-	-
		Female	17	17	-	-
		Unknown	0	0	-	-
	Class 2	Male	11	11	-	-
		Female	14	11	-	-
		Unknown	2	0	-	-
		Total	56	51	-	-
2nd Years	Class 1	Male	17	16	18	13
		Female	14	15	15	19
		Unknown	0	0	1	1
	Class 2	Male	18	19	17	18
		Female	14	15	15	12
		Unknown	0	0	0	2
		Total	63	65	66	65
1st Years	Class 1	Male	23	22	14	17
		Female	14	16	13	18
		Unknown	1	0	3	0
	Class 2	Male	19	19	20	17
		Female	17	17	20	14
		Unknown	0	1	2	1
		Total	74	75	72	67
New 1st Years	Class 1	Male	-	-	16	16
		Female	-	-	13	10
		Unknown	-	-	0	0
	Class 2	Male	-	-	13	14
		Female	-	-	15	13
		Unknown	-	-	0	0
		Total	-	-	57	53
Total			193	191	195	185

As one of the characteristics of the area, private-funded schools are considered better for children's life course; some children who failed to pass the exam to qualify for private funded schools reluctantly enter the state funded school. As a result, such students tend to lack self-confidence, motivation and leadership. Thus, the school expected students to behave more positively and to become more self-confident through school activities, and the antibullying activities are one of them, and the student committee created for such activities was expected to become a leader of the student body that would actively work for various social events in the school.

The antibullying activities

The antibullying activities were conducted between 2007 and 2008, funded by the local board of education. The activities had three essential principles. Firstly, it was a whole-school approach in which students in every class of every year group were targeted for raising the awareness of antibullying. Secondly, it was a student-centered approach in which besides the training sessions for teachers and parents, actual activities within the school were conducted by the members of student committee who were selected from every class, mostly by confidence vote of their classmates. All other students who were not members of the committee participated as targets for the awareness-raising. Finally, we used a multi-purpose approach, in which while the core aim was to tackle bullying, it also aimed for career education for students.

The activities started by building a project team within the school whose members included teachers, parents, students, and local representatives. The team then set a goal of the project of raising awareness of and changing attitudes towards the problem of bullying at school. The project sought to impact teachers and parents, as well as students. In order to achieve this goal, and particularly to tell them a need and an importance of psychoeducational approaches, teachers took a series of training sessions on stress management conducted by a university professor. Parents received a series of newsletters which explained bullying, had information about how parents can detect whether their children might be involved in any bullying situation, and how they should deal with it at home, and to collaborate with teachers. The student committee that led various activities within the school first collected opinions on bullying from students in order to understand the general perceptions against bullying. They then made a slogan for prevention which was written on a banner and presented so that everyone at the school can recognize it, and designed a stop-bullying hand signal. Finally, as a capstone for the two-years of efforts on the antibullying activities, they produced a drama for awareness-raising of antibullying with English and Japanese subtitles so that it could be distributed around the world (http://www.youtube.com/watch?v=ZW92_9SYb-0). The project was continued for the following years. In 2009, the drama produced by student committee was revised and distributed in neighboring schools around the city, and in 2010, members of the student committee presented their antibullying activities and its outcome at an academic conference. Except for the drama-making activity in which 23 students were involved, all other antibullying activities were conducted by the members of student committee.

This project received support from a number of professionals from various fields including academic researchers from both in and outside Japan, as well as experts of film production and theater arts. This component was designed to address the third principle, the multi-purpose aspect of the project as a career education component. Aiming for a student-centered approach, it was considered important for students that various activities on this project would provide meaningful encounters for them and so students would still receive significant benefits. These professionals therefore not only gave advice to students and support for their antibullying activities, but they also provided excitement for joining in the project. The other students were expected to show positive attitudes to the antibullying work, and in addition to that it has an important pedagogical implication for the students. During the two-year antibullying activities, a whole-school survey was conducted four times using anonymous self-report questionnaires developed by the local board of education under their ethical guidelines. We analyzed and presented the data by obtaining the permission of the local boards of education.

The second author was involved in this project as an adviser from the beginning when the school was officially designated as a model school by the local board of education. The first author, on the other hand, was not involved in the project development and implementation, but he supported students making English subtitles to the drama, and he conducted the analysis for the project.

Measures

The questionnaire used in this study was designed to examine students' experiences of, and attitudes towards bullying. At first, the questionnaire prepared by the local board of education only consisted of questions regarding students' experiences of bullying/ victimization. However, as asking questions about past experiences might cause some children to relive the negative experience of bullying, new questions were added by the researchers regarding the coping strategies they tried, re-evaluation of the experiences, and their prospective actions against bullying in order to give them a clue to cope with bullying, and a chance to attach a positive meaning to past negative experiences. The final questionnaire contained four different parts: 'being a victim' (5 items); 'being an aggressor' (3 items); 'seeing or hearing about someone else being bullied' (4 items); and 'attitude to bullying incidents' (3 items). This paper focuses only on three kinds of items: 'being an aggressor'; 'being a victim'; and 'whether they could do something about it when they were victimized'. The questions about experience of being victimized and bullying others were asked on a "yes / no" basis together with a behavioral check list (see table 3), while response to victimization was addressed with 10 response options: "do nothing and just put up with it"; "make jokes about it"; "take action against bullies"; "ask friends for help"; "runaway"; "ask teachers for help"; "ask school counselors for help"; "ask family members for help"; "ask telephone counseling for help"; and "others". The survey was conducted at four different time points: July, 2007; January, 2008; July, 2008; and January 2009.

Ethical conduct

Although this was a longitudinal study, questions that could identify an individual student were not included; instead we gave feedback to each class so that the teacher knew whether there was any victimized student in their class. Furthermore, as the project itself aimed to raise awareness of everyone in the school, the bullying related information was actively gathered from parents and school counselors, and there were actually several cases that required intervention. For those cases, all teachers including administrators supported the class teacher to solve the problem, and later reported to the advisor.

Data analysis

This study aimed to demonstrate the importance of applying alternative assessment indices for monitoring the prevalence and severity of bullying at school and at each class of each year group, and to examine how such conditions of bullying change along with the antibullying activities conducted by the student committee to detect the high risk classes and year groups within the school. The purpose was not to validate the generalizability of specific indices used because the sample size was too small for conducting statistical tests, and thus, the data presented here are largely descriptive in nature. In addition, as the number of participating students in each year group and each survey point varies, percentages instead of actual number of reported bullying/victimization within each class of each year group were calculated. In order to examine the differences between each year group in relation to their participation of the project longitudinally, we treated each year group as a cohort. The “cohort JH3” represents the third year students who only participated in the first half of the project and finished the school before the second half of the project began. The “cohort JH2” represents the second year students who advanced to the third year at the second half of the project. The “cohort JH1” represents the first year students who advanced to the second year at the second half of the project. Finally, the “cohort E6” represents the sixth graders of primary school who entered into the junior high school and participated in only the second half of the project. As for the two-year antibullying activities, the core members of the student committee who play the central role for the project were mainly from the cohort JH2 and a few from the cohort JH1.

Results

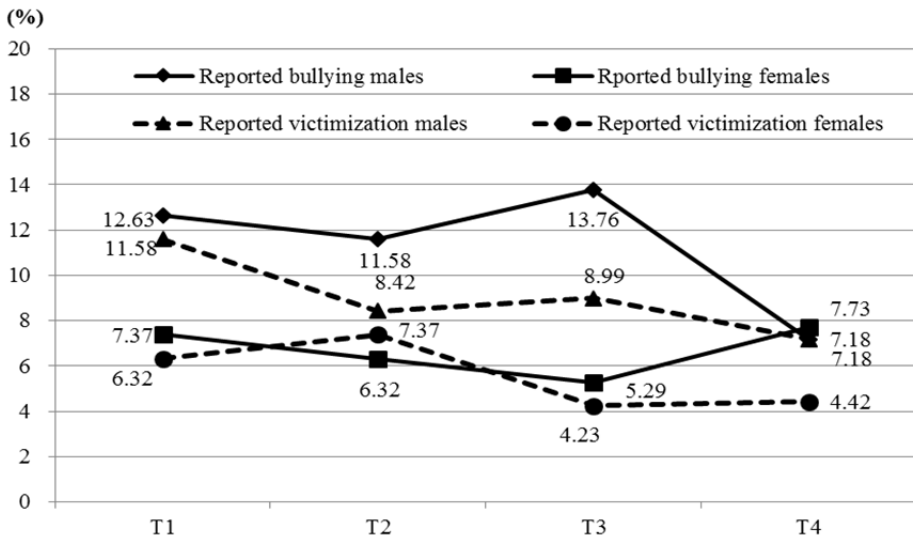
We first present the results applying the traditional index of change in the number of reported bullying/victimization on the whole school basis, and then by a cohort of year group. We then present the results applying the alternative assessment indices (BVR and NHV). As both the BVR and the NHV were applied aiming to detect the high risk classes within a cohort at each survey point, we reported the results by gender and classes of each cohort of year group.

Traditional evaluation index of increase/decrease of reported bullying/ victimization

Students were asked whether they had ever been an aggressor, or a victim of bullying in last three months (since April) for the first and the third survey points, and since October for the second and the fourth survey points.

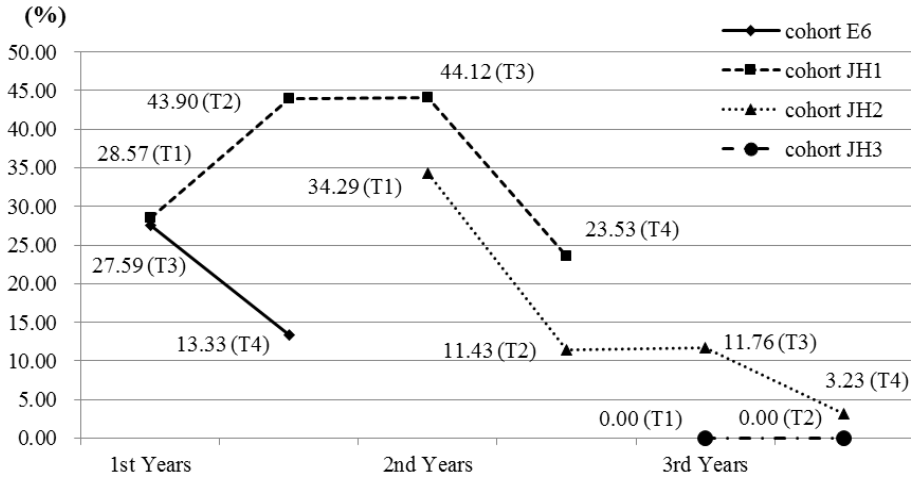
Figure 1 below shows the overall percentages of reported bullying and victimization among male and female students at four survey points. In terms of the number of reported bullying, through four survey points, males showed a slight decrease of 5 points while females showed no difference, and around 7 % of both males and females reported bullying at the last survey point. In terms of reported victimization, both males and females showed a downward trend, though its degree was not the same (males by 4 % cf. females by 2 %). For the number of reported incidents of bullying and victimization, males showed higher percentages than females at all four survey points, except the last survey point.

In order to monitor the condition of the bullying by the traditional index in more detail, the numbers of reported bullying and victimization were calculated by gender and by cohorts of year groups. Figure 2a shows the percentages of reported bullying of male students by cohorts and Figure 2b shows the females.



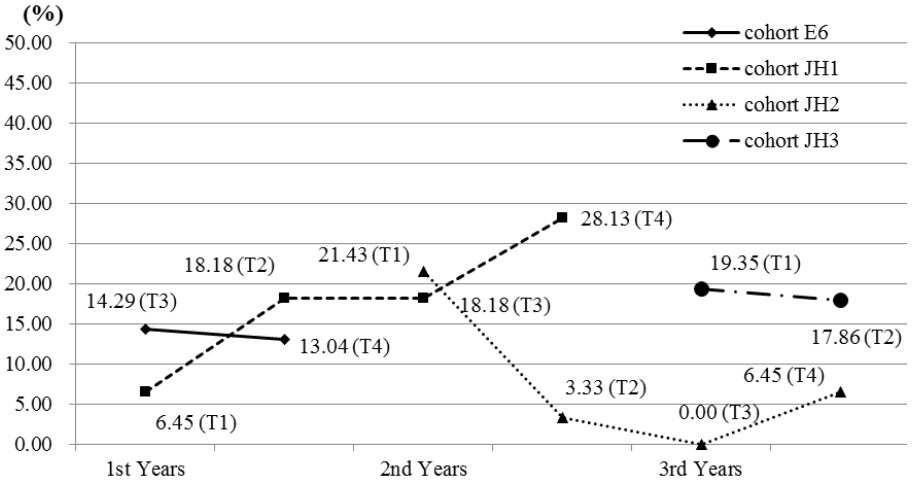
* T1: the first survey point; T2: the second survey point; T3: the third survey point; T4: the fourth survey point.

Figure 1:
Overall percentage of reported bullying and victimization



* T1: the first survey point; T2: the second survey point; T3: the third survey point; T4: the fourth survey point.

Figure 2a:
Percentages of reported bullying of male students by cohorts of year groups



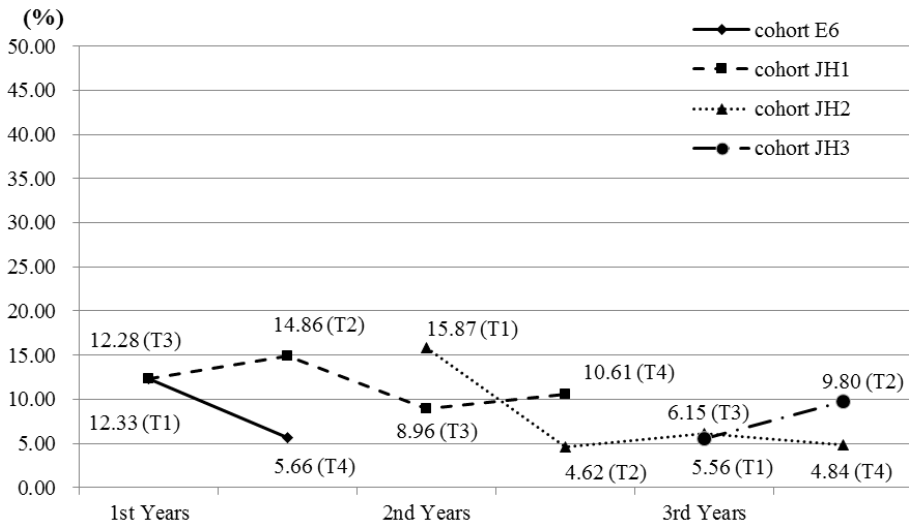
* T1: the first survey point; T2: the second survey point; T3: the third survey point; T4: the fourth survey point.

Figure 2b:
Percentages of reported bullying of female students by cohorts of year groups

Regarding the cohort E6, while males showed a 14 % decrease, females showed a 1 % decrease. Thus, though males showed much higher rates at the initial time point, there was no difference between them at the second survey point. Regarding the cohort JH1, females showed a steady increase by 11 % between the first and the second survey point, and by 10 % between the third and the fourth, which resulted in the total of 21 % increase overall. Males showed similar pattern until the third survey point where they showed 15 % increase, but then the rate decreased by 20 % at the last survey point, which yields a 5 % decrease overall. As for the cohort JH2, both males and females again showed a fairly similar pattern of decrease from the first to the third survey point, by more than 20 %. However, at the last survey point, while males showed further 8 % decrease, females showed 6 % increase. Finally, for the cohort JH3, while males reported no bullying at both survey points, females showed 2 % decrease overall.

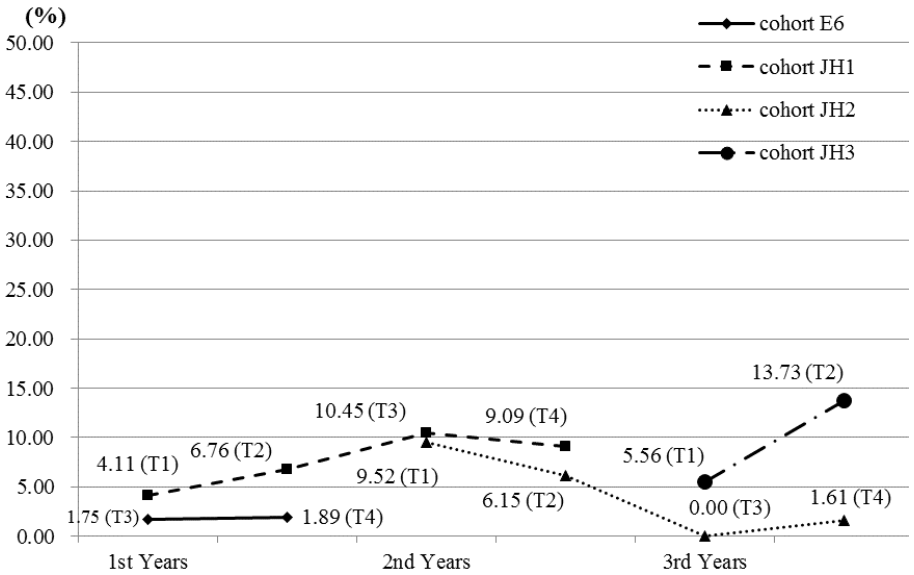
As for the number of reported victimization experiences, a similar pattern to that of reported bullying was found. Figure 3a shows the result of males by cohorts and Figure 3b shows the females.

Regarding cohort E6, males showed a decrease of 6 %, while females showed no difference. In cohort JH1, males fluctuated between 2 to 6 % and they showed overall 1.5 % decrease at the last survey point. Females, in contrast, showed steady increase of 6 % until the third survey point and then showed 1 % decrease at the last survey point. Regarding cohort JH2, males showed a decrease of 11 % between the first and the second



* T1: the first survey point; T2: the second survey point; T3: the third survey point; T4: the fourth survey point.

Figure 3a:
Percentages of reported victimization of male students by cohorts of year groups



* T1: the first survey point; T2: the second survey point; T3: the third survey point; T4: the fourth survey point.

Figure 3b:
Percentages of reported victimization of female students by cohorts of year groups

survey points, and then sustained a level of reported victimization of about 5 %. Females also showed a decrease of 9 % and rates were stable until the final data collection. Finally regarding the cohort JH3, both males and females showed clear increase by 3 to 8 %.

New monitoring indices of bully/victim ratio and the number of helpless victims

In order to reflect the seriousness of the bullying situation within each class of each cohort, the results were re-analyzed using the new indices of bully/victim ratio (BVR) and the number of helpless victim (NHV). It should be noted that the 'victim' in this context means the students who reported being a victim and who did not report being an aggressor at the same time. The class which has the higher BVR and NHV could be at higher risk of having stable victims with dominant aggressors.

In contrast to the traditional index of percentages of reported bullying/victimization, we look at BVR and NHV by class and gender so that we can detect which classes and gender groups have a higher risk of serious bully/victim incidents at each four survey point (see table 2 and 3).

Table 2:
Bully/victim ratio by gender and classes of each cohort of year group

			T1	T2	T3	T4
cohort E6	class 1	males	-	-	2.50	0.00
		females	-	-	0.00	0.00
	class 2	males	-	-	1.50	1.00
		females	-	-	0.00	0.00
cohort JH1	class 1	males	2.67	3.67	5.00	2.00
		females	1.00	4.00	0.00	1.67
	class 2	males	1.33	3.50	10.00	1.00
		females	0.50	1.00	1.50	4.00
cohort JH2	class 1	males	5.00	0.00	1.00	0.00
		females	1.00	0.00	0.00	1.00
	class 2	males	3.50	1.00	0.00	0.33
		females	1.50	1.00	0.00	0.00
cohort JH3	class 1	males	0.00	0.00	-	-
		females	0.00	0.67	-	-
	class 2	males	0.00	0.00	-	-
		females	0.00	0.00	-	-

Table 3:
Number of helpless victims by gender and classes of each cohort of year group

			T1	T2	T3	T4
cohort E6	class 1	males	-	-	0	0
		females	-	-	0	0
	class 2	males	-	-	0	1
		females	-	-	0	0
cohort JH1	class 1	males	1	0	1	1
		females	0	1	0	2
	class 2	males	1	1	0	1
		females	0	0	1	0
cohort JH2	class 1	males	1	0	0	0
		females	0	0	0	0
	class 2	males	1	1	0	2
		females	0	1	0	0
cohort JH3	class 1	males	0	1	-	-
		females	0	1	-	-
	class 2	males	0	0	-	-
		females	0	0	-	-

In the remainder of this section, we call each gender group in a class a 'unit'. At the first survey point, class1-male unit (male students in class 1) of the cohort JH2 showed the highest BVR of 5.00 followed by class2-male unit of the cohort JH2 (3.50) and class1-male unit of the cohort JH1 (2.67). Looking at the NHV, there was one helpless victim each in these classes. As for the second survey point, class1-female unit of the cohort JH1 marked the highest BVR of 4.00, which was 3 points increase from the first survey point, followed by class1-male unit (3.67) and class2-male unit of the same cohort JH1 (3.50). The BVR of the classes in the cohort JH2 who marked high levels of BVR at the first survey point decreased by 1.0 to zero. In terms of the NHV at the second survey point, there was one helpless victim among class1-female unit of the cohort JH1, yet no helpless victim among males. There was also one helpless victim among class2-male unit of the same cohort. Furthermore, there were one helpless victim each among both class2-male and -female units of the cohort JH2 and also class1-male and -female units of the cohort JH3, though the BVR of these classes were 1.0 or below. Regarding the third survey point, class2-male unit of the cohort JH1 marked the highest BVR of 10.00, followed by class1-male unit of the cohort JH1 (5.00). Class1-male unit of the cohort E6, who just entered into the junior high school and started to participate the study at this survey point, also marked high levels of BVR of 2.50. In terms of the NHV, there was one helpless victim among class1-male unit of the cohort JH1 and among class2-female unit of the cohort JH1. There was, however, no helpless victim among class2-male unit of the cohort JH2 who marked the highest BVR at the third survey point. Finally, for the last survey point, class2-female unit of the cohort JH1 marked the highest BVR of 4.00, followed by class1-male unit of the cohort JH1 (2.00) and class1-female unit of the same cohort (1.67). As for the NHV, there were two helpless victims among class1-female unit of the cohort JH1 and one helpless victim among class1-male unit of the same cohort. There were also two helpless victims among class2-male unit of cohort JH2, and one helpless victim among class2-male unit of cohort E6 as well as class2-male unit of the cohort JH1, though the BVR of all these classes were 1.0 or below.

On the whole, according to the BVR, both class1- and class2-male units of the cohort JH1 seems to be at the highest risk for serious bully/victim incidents since they marked the BVR of above 1.0 throughout four survey points during two-year antibullying activities. This means that in these units, the bullies always outnumbered the victims and this could in turn suggest the possibility of existence of long-suffering fixed victims. This inference was also supported by the NHV. At least one helpless victim among either males or females in both classes appeared throughout four survey points.

In order to detect the seriousness of the situation among helpless victims, we examined the forms of bullying that helpless victims reported (see table 4). The data suggest that verbal abuse was the most frequent form of bullying that helpless victims received, followed by mild and hard physical attacks, and ignoring/social exclusion. It also suggests the possibility that many of those helpless victims received a number of different forms of bullying simultaneously.

Table 4:
Forms of bullying helpless victims received

Cohort	Class	Sex	V.A	M.P	H.P	I.S	H.S	E.H	Cd	C.A	Others
First Survey Point											
JH1	1	Unknown	✓		✓	✓					
JH1	2	Male									✓
JH2	1	Male			✓	✓					
JH2	2	Male	✓	✓				✓	✓		
Second Survey Point											
JH1	1	Female	✓	✓							
JH1	2	Male	✓	✓	✓						
JH2	2	Male									
JH2	2	Female	✓								✓
JH3	1	Male		✓							
JH3	1	Female		✓	✓		✓		✓		
Third Survey Point											
JH1	1	Male	✓	✓	✓	✓	✓	✓		✓	✓
JH1	2	Female	✓								
Fourth Survey Point											
E6	2	Male				✓					
JH1	1	Male			✓						
JH1	1	Female		✓							
JH1	1	Female						✓			
JH1	2	Male	✓								
JH2	2	Male					✓				
JH2	2	Male									

* V.A: Verbal Abuse; M.P: Mild Physical Attack; H.P: Hard Physical Attack;
I.S: Ignoring/Social Exclusion; H.S: Hiding/Stealing/Breaking/Chucking;
E.H: Enforcing/Humiliating; Cd: Cadger; C.A: Cyber Attack.

Discussion

Given the contradictory results obtained by antibullying projects worldwide using overall measures of bullying and victimization (Smith et al., 2004; Ttofi & Farrington, 2011), careful evaluation of the projects and proper interpretation of such evaluation would be indispensable for future successful prevention and intervention. However, it should also be remembered that even those so-called most effective projects would not be sufficient

as there is always a victim who remains suffering after the project is completed. Although we all know that it is very difficult to detect and eliminate every single case of bullying at school, we should always try for this challenge so that children feel totally safe and secure at school. One of the ways we can try is the regular monitoring of the condition of classes with no regard for the implementation of particular antibullying activities. By adopting the perspective that greater insight might be gained by applying a wider range of indices (Toda et al., 2008), this study aimed to demonstrate multiple ways to monitor the prevalence and severity of bullying along with the antibullying activities and to examine the change in the condition on the whole school and on the class and year group levels to detect the high-risk classes and gender groups to which the interventional resources should be given on a priority basis. In addition to the traditional evaluation index (the increase/decrease of reported bullying/victimization) to monitor the overall and longitudinal condition of the bullying by the cohort of year groups, new evaluation indices (the bully/victim ratio (BVR) and the number of helpless victims (NHV)) were applied to gain the insights into the risk situation of each unit of students by class and gender at each survey point. These analyses were essential because bullying in Japan is often found to be conducted as a group act within the same social group based on gender, class or year groups. It is also because the effects of antibullying activities are often not equal across classes or year groups even though the project was implemented on a whole school basis. We will first discuss the implication of applying new indices (BVR and NHV), along with the traditional index for the monitoring of the condition of bullying and for the evaluation of the antibullying activities. We will then discuss the reason why the change in condition of bullying differed by gender and the year group, and possible effects of antibullying activities for such changes.

Application of the BVR and NHV along with the traditional index

Looking at the prevalence of bullying by the traditional index, the overall outcome can be considered positive. The overall percentages of both reported bullying and victimization showed decreasing trends among both males and females, though the degree of such change is somewhat moderate. When we see the results by gender and by the cohorts, we found some mixture of positive and negative outcomes. First, we focus on those who participated in the whole two-year project, the cohort JH1 and JH2. While males of the cohort JH1 showed very minor decrease in both the reported number of perpetration and victimization, females showed clear increase of 5 to 20 % in perpetration and victimization. This suggests that the condition of bullying in the cohort JH1 seemed to get worse, especially among females. As for the cohort JH2, on the other hand, there were marked decreasing trends of 15 to 31 % in perpetration and 8 to 11 % in victimization, among both males and females. This suggests the condition of bullying in the cohort JH2 seemed to get better during two year antibullying activities. This opposite condition of two cohorts seems important as both cohorts participated in the antibullying activities in full, yet showed the opposite outcomes. In terms of the cohort E6 and JH3, both participated only the half of the project, again showed the opposite outcomes. As for the cohort E6, while males showed marked decrease in both perpetration and victimization, females

showed no differences. In terms of the cohort JH3, on the other hand, both males and females showed no difference in perpetration, but clear increasing trends in victimization. This again suggests that the condition of bullying seems to be different depending on their year groups as well as their gender. The positive change in condition of bullying among the cohort JH2 as well as the cohort E6 could partly be concluded as an indication of positive effects of the two-year antibullying activities.

However, when we see the results from different perspectives (BVR and NHV), such positive outcomes are somewhat questioned. The aim of any antibullying activities should be to eliminate any ongoing bully-victim incidents completely and to prevent any new incidents to be conducted. In other words, although some marked decreasing trends of reported perpetration and victimization were found in some cohorts, it should not be considered sufficient. Looking at the BVR and NHV at each survey point, we can find the high-risk unit of gender and classes which we should put more interventional resources to terminate ongoing incidents. At the first survey point, male students of the cohort JH2, both class 1 and class 2 showed the marked BVR. The male students of the cohort JH1, again both class 1 and class 2, also showed high levels of BVR. Regarding the NHV, supporting the speculation revealed by the BVR, one helpless victim was found in each unit of students. These units of students were therefore considered to be at the highest risk. Looking at the second survey point, while the BVR of the male students of the cohort JH2 decreased to 1.00 to 0.00 which make us speculate that the situation became somewhat calmer. However, in terms of the NHV, there was a helpless victim at class2, both among males and females, and therefore we should not speculate that the incident got resolved. The cohort JH1, both males and females in class 1 and males in class 2 continued to show high levels of BVR, and there was, indeed, a helpless victim in both classes. This suggests the need of urgent interventional actions for both classes. In terms of the third survey point, looking at the BVR, the bully-victim situation among male students, both class 1 and class 2 in the cohort JH1 seems to get even worse. However, while there was a helpless victim among males in class 1, there was no helpless victim among males but there was a helpless victim among females in class 2. This suggests the importance of evaluating the situation by using both the BVR and NHV indices. Finally, at the last survey point, although the situation among male students in the cohort JH1 appears to be slightly better, it did not quite so as there was a helpless victim. However, although the level of BVR was lower than males, the NHV suggested the seriousness of the situation among females in class 1. As for the females of class 2 of the cohort JH1, the level of BVR was again quite high but there was no helpless victim. Furthermore, although the level of BVR was below 1.00, the NHV suggests the existence of helpless victims among males in the cohort JH2. These mixed results obtained by the new evaluation indices suggest the possibility of bullying being continued even among the classes or the cohorts whose overall percentages of reported perpetration and victimization decreased, and thus the importance of using multiple indices for further examination of the situation to detect high risk children. As Toda et al. (2008) argued, even if the overall percentage of reported bullying/victimization was low, it does not directly mean the situation is calm, and there is always a risk that few stable victims were bullied by a dominant large group of perpetrators. In such a case, the damage that the victims receive would be much more serious than the situation where many single cases of bullying are

going on with many bullies and victims. When we try to prevent such serious cases of bullying, it is necessary to determine the priority for teachers so they know where to intervene first, and these new indices can be useful measures for detecting high-risk classes and year groups.

Differences between genders and the cohort of grades

As discussed so far, the overall percentages of both reported bullying and victimization showed downward trends over the duration of the study, but there were marked differences in results by gender and by cohort. For example, although the cohorts E6 and JH3 both participated in half of the project, cohort E6 showed more positive outcome than cohort JH3. Similarly, both cohorts JH1 and JH2 participated in the project in full, but again showed rather opposite outcomes. While cohort JH2 showed some significant decrease in the number of reported bullying and victimization among both males and females, cohort JH1 revealed very minor decrease among boys and marked increase among girls.

These results surely demonstrate how overall measures may disguise individual differences between males and females as well as between each class and cohort of year group. There are numbers of possible explanations for these differences.

One explanation can be the reflection of a common pattern of bullying among different graders in general. The latest national survey of children's problematic behavior conducted by the Ministry of Education, Culture, Sports, Science and Technology (2014) revealed that the rate of reported bullying is highest among the first-year students in junior high school, and it gradually decreases as pupils get older. Rigby (1997) reported that while pro-victim attitudes peak between the ages of 17 and 18, pro-bully attitudes reach a peak at around the ages of 13-14, which is the first years of junior high school in Japan. These findings may partly explain why the condition of bullying among the cohort JH1 seems worse than the cohort JH2. However, since the greatest numbers of both perpetration and victimization reported at the first survey point were those in the cohort JH2 but not in the cohort JH1, the differences obtained in this study cannot be fully explained merely by an age trend.

Another explanation could be related to the way the antibullying activities were implemented in the school. There are differences in the period of time students in each year group participated in the project. Students in the cohort JH3 and the E6 both participated in half of the project, and therefore, the effects may be moderate, especially for those in the cohort JH3, who participated in the first half, where the focus was more on the raising awareness of teachers and parents rather than students themselves. The students in cohort JH2 and JH1, on the other hand, participated in the project in full and therefore, we would expect that the project would produce stronger results. However, there were also considerable differences between cohort JH2 and JH1 as discussed above. This may partly be due to the effort the students in each cohort group put into the project. As the core members of the student committee who directly worked on this project were mainly from cohort JH2, students in this year group must have received stronger influence by

those members of student committee. The students in cohort JH1, on the other hand, may have been less aware of the project itself or had less understanding of antibullying attitudes, and thus, the change in condition of bullying during the two-year project was moderate. This suggests the importance of actively encouraging project ownership by students in every year group.

Finally, there is another possibility related to specific peer group norms within the year groups. Previous research suggested that group norms may regulate bullying behaviors through social processes such as conformity to peer group pressure (Espelage, Holt, & Henkel, 2003; Salmivalli & Voeten, 2004). The effect of such group norms will depend on the strength of the cohesiveness of the class or year group, and students in highly cohesive classes or year groups may follow their own rules regardless of its correctness in terms of public antibullying rules. The results of this study may reflect such a pro-bully normative view held by students in certain classes of cohorts JH3 and JH1 which showed less positive outcomes.

Study limitations

There were numbers of limitations to this study. The most obvious limitation is the sample size. Although this study aimed to demonstrate the importance of using multiple indices to monitor the prevalence and severity of bullying on the whole school level as well as on class and year group levels during the two-year antibullying activities, the sample size was still considerably small and limited the statistical analyses that were possible. However, in future research, we should consider statistical analyses to make the findings more reliable and variable. In relation to this, we should make clear criteria of BVR and NHV for interventional actions. In other words, we should not only know which unit of the cohort was in serious situation, but we should also know when we start intervening such cases. By making the criteria of BVR and NHV for intervention, we could make an action against ongoing incidents more quickly.

Another limitation is that although the study was conducted longitudinally with four different survey points within a two-year period, there was no follow-up of individual students. This means that we could not identify whether the individuals who reported being victimized at one time were the same individuals reported at the other times. Although it is rather difficult in school settings both ethically and practically, it would need a coded identification on the questionnaires so as to keep track of the individuals, which would enable us to build a more concrete picture of the process of collectivisation of bullies and disempowerment of victims.

Thirdly, although we monitor the condition of bullying during two-year antibullying activities, we cannot be fully assured whether the positive or negative changes between each survey point were due to the effect of the antibullying activities since there was no control group such as a similar school with no antibullying project implemented or some uninvolved classes or year groups within the participating school.

Finally, this study only used a self-report questionnaire for monitoring and evaluation. This is firstly because the data of this study was originally gathered by the local board of

education, and secondly because it is very difficult to use alternative measures such as peer-nomination or network analysis in Japanese schools mostly for the ethical reasons. While these points ideally need to be considered in future research, the present design is straightforward enough to be realistically employed by schools wanting to monitor bullying over time.

Conclusion and implications

To conclude, it is clear that along with the traditional measures of mere increase or decrease of the number of reported bullying and victimization, the new indices (BVR and NHV) we applied for monitoring the condition of the bullying could give alternative views of the condition of individual classes or year groups and this enable schools and teachers to detect certain unit of students that might have more serious problems than others, and to detect, help and support those silent helpless victims more quickly and appropriately. In addition, although the antibullying activities were implemented on a whole-school basis, there were considerable differences in condition depending on gender, class and year group. This seems to be partly because of the duration of participation in the project, and because of the energy and effort the students themselves put into the project. Therefore, it is very important to carefully monitor and evaluate any antibullying projects, not only by the school as a whole, but also by individual year groups or ideally by individual classes of each year group which again make schools and teachers to detect helpless victims more quickly and to give them appropriate support and care.

References

Boulton, M. J., Trueman, M., & Murray, L. (2008). Associations between peer victimization, fear of future victimization and disrupted concentration on class work among junior school pupils. *British Journal of Educational Psychology*, 78(3), 473-489. doi: 10.1348/000709908X320471.

Espelage, D. L., Holt, M. K., & Henkel, R. R. (2003). Examination of peer-group contextual effects on aggression during early adolescence. *Child Development*, 74(1), 205–220. doi: 10.1111/1467-8624.00531.

Japanese Ministry of Education, Culture, Sports, Science and Technology. (2011). *Annual fact-finding survey on problematic behavior in school*. Tokyo: Ministry of Education, Culture, Sports, Science & Technology.

Kanetsuna, T., & Smith, P. K. (2002). Pupil Insights into bullying, and coping with bullying: A bi-national study in Japan and England. *Journal of School Violence*, 1, 5-29. doi: 10.1300/J202v01n03_02.

Kanetsuna, T. (2009). Cross-national study of the nature of ijime in Japan and bullying in England in relation to the tendency of friends' group formation in school. *Bulletin of Koshien University*, 37, 161-171.

Morita, Y. (2006). *What is bullying – the problem of classroom, the problem of society*. Chuoukoronshinsha: Tokyo.

Obermann, M. L. (2011). Moral disengagement among bystanders to school bullying. *Journal of School Violence*, 10(3), 239-257. doi: 10.1080/15388220.2011.578276.

Olweus, D. (1999). Norway. In P. K. Smith, Y. Morita, J. Junger-Tas, D. Olweus, R. Catalano, & P. Slee (Eds.) *The Nature of School Bullying: A Cross-National Perspective*. London & New York: Routledge.

Pergolizzi, F., Richmod, D., Macario, S., Gan, Z., Richmond, C., & Macario, E. (2009). Bullying in middle schools: Results from a four-school survey. *Journal of School Violence*, 8(3), 264-279. doi: 10.1080/15388220902910839.

Rigby, K. (1997). Attitudes and beliefs about bullying among Australian school children. *Irish Journal of Psychology*, 18, 202–220.

Rivers, I., Poteat, V. P., Noret, N., & Ashurst, N. (2009). Observing bullying at school: The mental health implications of witness status. *School Psychology Quarterly*, 24(4), 211-223. doi: 10.1037/a0018164.

Salmivalli, C., Lagerspetz, K. M. J., Björkqvist, K., Österman, K., & Kaukiainen, A. (1996). Bullying as a group process: participant roles and their relations to social status within the class. *Aggressive Behavior*, 22(1), 1-15. doi: 10.1002/(SICI)1098-2337(1996)22:1<1::AID-AB1>3.0.CO;2-T.

Salmivalli, C., Kärnä, A., & Poskiparta, E. (2011). Counteracting bullying in Finland: The KiVa program and its effects on different forms of being bullied. *International Journal of Behavioral Development*, 35 (5), 405-411. doi: 10.1177/0165025411407457.

Salmivalli, C., & Voeten, M. (2004). Connections between attitudes, group norms, and behavior in bullying situations. *International Journal of Behavioral Development*, 28(3), 246–258. doi: 10.1080/01650250344000488.

Smith, J. D., Schneider, B. H., Smith, P. K., & Ananiadou, K. (2004). The effectiveness of whole-school antibullying programs: A synthesis of evaluation research. *School Psychology Review*, 33, 4, 547-560.

Smith, P. K., Morita, Y., Junger-Tas, J., Olweus, D., Catalano, R., & Slee, P. (1999). *The Nature of School Bullying: A Cross-National Perspective*. London & New York: Routledge.

Sweeting, H., Young, R., West, P., & Der, G. (2006). Peer victimization and depression in early–mid adolescence: A longitudinal study. *British Journal of Educational Psychology*, 76(3), 577-594. doi: 10.1348/000709905X49890.

Toda, Y., Strohmeier, D., & Spiel. (2008). Process Model of Bullying. In T. Katoh & H. Taniguchi (Eds.), *Darkside of Interpersonal Relationships* (S.117-131). Kyoto: Kitaohji-Shobo.

Ttofi, M. M., & Farrington, D. P. (2011). Effectiveness of school-based programs to reduce bullying: a systematic and meta-analytic review. *Journal of Experimental Criminology*, 7(1), 27–56. doi: 10.1007/s11292-010-9109-1.

Ttofi, M.M., Farrington, D.P., & Lösel, F. (2011). Editorial: Health consequences of school bullying. *Journal of Aggression, Conflict and Peace Research*, 3(2), 60-62.

Whitney, I., & Smith, P. K. (1993). A survey of the nature and extent of bullying in junior/middle and secondary schools. *Educational Research*, 35(1), 3-25. doi: 10.1080/0013188930350101.

Wiens, B. A., & Dempsey, A. (2009). Bystander involvement in peer victimization: The value of looking beyond aggressors and victims. *Journal of School Violence*, 8(3), 206-215. doi: 10.1080/15388220902910599.