Journal of Early Adolescence
2015, Vol. 35(3) 403–434

DOI: 10.1177/0272431614535090
jea.sagepub.com
SAGE

Evaluation of a Youth-Led Program for Preventing Bullying, Sexual Harassment, and Dating Aggression in Middle Schools

Jennifer Connolly[1], Wendy Josephson[2], Jessica Schnoll[1], Emily Simkins-Strong[1], Debra Pepler[1], Alison MacPherson[1], Jessica Weiser[3], Michelle Moran[3], and Depeng Jiang[4]

Abstract

Although youth-led programs (YLP) have been successful in many areas of public health, youth leadership is rarely used in the prevention of peer aggression. A YLP to reduce bullying, sexual harassment, and dating aggression was compared experimentally with the board-mandated usual practice (UP). Four middle schools in an urban Canadian school division were randomly assigned to a YLP or to UP programs led by adults. Knowledge, attitudes, victimization, and emotional school adjustment (anxiety and school connectedness) were assessed in the fall (pretest) and spring (posttest) among 509 Grades 7 and 8 students (51.4% female, $\bar{X}$ age = 12.37). Significant improvements were found in knowledge and attitudes in both programs. Students receiving the YLP showed significant reductions in

[1]York University, Toronto, Ontario, Canada
[2]University of Winnipeg, Winnipeg, Manitoba, Canada
[3]East Metro Youth Services, Toronto, Ontario, Canada
[4]University of Manitoba, Winnipeg, Manitoba, Canada

Corresponding Author:
Jennifer Connolly, York University, 217D York Lanes, 4700 Keele Street, Toronto, Ontario, Canada M3J 1P3.
Email: connolly@yorku.ca

anxiety and maintained their school connectedness (all *p*s < .05). The results suggest that youth-led prevention is an effective approach for tackling peer aggression in school settings.

Keywords
aggression, school context, bullying, youth programs/camps, dating/dating violence

Aggression between peers is a significant problem in schools, posing a threat to student health and reducing positive adjustment (Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 2010). In the middle school years, victimization by peers diversifies to include sexual harassment and dating aggression alongside bullying (Holt & Espelage, 2003; McMaster, Connolly, Pepler, & Craig, 2002; Pepler & Craig, 2000). Bullying refers to repeated physical or verbal actions that have hostile intent and involve a power differential between the bully and victim (Olweus, 1993). A recent World Health Organization (WHO) survey of 35 countries revealed a worldwide victimization rate of 11% among schoolchildren (Craig & Harel, 2004), a value consistent with nationally representative North American rates (Nansel, Overpeck, Pilla, Ruan, & Simons-Morton, 2001). Sexual harassment refers to unwanted verbal or behavioral gestures of a sexual nature (American Association of University Women [AAUW], 2001). This behavior emerges in the middle school years (McMaster et al., 2002), and recent research in Canadian and American urban areas suggests that between 59% and 90% of students in Grades 6 through 9 report being the target of at least one act of harassment (Chiodo, Wolfe, Crooks, Hughes, & Jaffe, 2009; Lichty & Campbell, 2012). Dating aggression refers to physical, psychological, or sexual abuse directed toward a dating partner with the intent of harming him or her (Capaldi, Knoble, Shortt, & Kim, 2012). Nationally representative U.S. data indicate that victimization is reported by 30% of adolescents, including those 12 to 14 years of age (Halpern, Oslak, Young, Martin, & Kupper, 2001).

Regardless of type, being victimized by a peer is a significant risk factor for poor school adjustment. Victimized adolescents report numerous symptoms of emotional distress, including depression, anxiety, and low self-esteem (Card & Hodges, 2008; Espelage & Holt, 2007; Gruber & Fineran, 2007). They also report feeling fearful in school, and they do not feel valued by their teachers (Chiodo et al., 2009; Lichty & Campbell, 2012; Nansel, Haynie, & Simons-Morton, 2003; Shute, Owens, & Slee, 2008). There is as

well an increased risk of problematic social behavior including the early use of alcohol (Peleg-Oren, Cardenas, Comerford, & Galea, 2012). The implications for achievement can likewise be severe as students bullied throughout middle school suffer significant declines in school performance (Juvonen, Wang, & Espinoza, 2011). Given its frequency as well as negative personal outcomes, researchers have focused attention on developing school-based programs to prevent the occurrence of peer aggression and victimization. The present study is an evaluation of a youth-led violence prevention program that targets bullying, sexual harassment, and dating aggression during the middle school years.

The Developmental Context of Peer Aggression

Aggressive behaviors toward peers do not occur in isolation (Holt & Espelage, 2012; Pepler et al., 2006). Childhood bullying is a risk factor for sexual harassment and dating aggression in early adolescence, when youth become sensitized to sexual and romantic dimensions of relationships. Indeed, youth who bully are also more likely to sexually harass their peers and to perpetrate aggression toward a dating partner (Connolly, Pepler, Craig, & Taradash, 2000; McMaster et al., 2002). The middle school years are a transition point for this developmental continuum as bullying rates peak around Grade 9 while these gendered forms are on the ascent (Espelage & Holt, 2007; Pepler & Craig, 2003). Compounding the problem for middle school youth, bullying, sexual harassment, and dating violence often co-occur: Students who experience one form of aggression are at increased risk for victimization by the other types of aggression (Finkelhor, Ormrod, & Turner, 2007; Holt & Espelage, 2005). Intervention at this point can alter the pathway for further aggression in the high school years, so the middle school years are a critical time for prevention programs.

School-Based Aggression Prevention Programs

School-based aggression prevention programs have grown exponentially in recent years (see Ferguson, Miguel, Kilburn, & Sanchez, 2007; Ttofi & Farrington, 2011; Wilson, Lipsey, & Derzon, 2003, for meta-analytic reviews). Program evaluations have generally found significant intervention effects on outcomes that include increased knowledge, attitude changes such as decreased acceptance of aggression, and improvements in interpersonal skills that foster healthy peer relationships (Farrell, Meyer, Sullivan, & Kung, 2003; Flannery et al., 2003; Regan, 2009; Shapiro, Burgoon, Welker, & Clough, 2002). School prevention programs most often target only one form

of aggression, be it bullying, harassment, or dating aggression. Given their co-occurrence in the middle school years, it would seem wise to target all three forms of aggression affecting students at this age.

In addition to changing knowledge, attitudes, and behavior, advocates of aggression prevention programs often speak about the importance of improving students' adjustment in school (Flannery et al., 2003; Olweus & Limber, 1999). School adjustment is a broad concept with many components, including emotional, social, and academic well-being. In applying this concept to victimization, emotional well-being and positive engagement with school have been emphasized as alienation, anxiety, and negative school experiences are associated with high levels of peer aggression (Carney, Hazler, Oh, Hibel, & Granger, 2010; Holt & Espelage, 2003; Nansel et al., 2003; Salmivalli, Garandeau, & Veenstra, 2012). Nonetheless, to date, emotional school adjustment has received less attention than other program outcomes. In advocating for inclusion of emotional school adjustment in evaluation studies, it has been argued that students in schools with effective aggression prevention programs might experience less anxiety because of the reduced risk of being a target of aggression or of witnessing episodes of aggression (Salmivalli et al., 2012). They may also feel greater connection to their school because teachers and administrators are providing a visible expression of respect and concern for students' safety and providing tangible support to those experiencing peer aggression. The importance of focusing on emotional school adjustment when evaluating middle school prevention programs is reinforced by the fact that students' sense of connectedness with their school very often declines during the middle school years, with deleterious effects on academic achievement (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Shochet, Dadds, Ham, & Montague, 2006). Prevention programs that improve emotional school adjustment alongside reductions in peer aggression would be particularly appealing to administrators and increase their uptake in schools (Salmivalli et al., 2012).

Youth-Led Aggression Prevention Programs

Libby, Rosen, and Sedonaen (2005) have argued that young people often find their peers more engaging and credible than adults in education and skills training. Peer-led prevention programs have been successful in a number of public health domains such as smoking or sexual assault (Maticka-Tyndale & Barnett, 2010; Mellanby, Rees, & Tripp, 2000; Simoni, Nelson, Franks, Yard, & Lehavot, 2011). In fact, Cheon's (2008) systematic review identified peer leadership as a best practice in community-based youth substance reduction programs.

Peers have a substantial influence on aggressive behavior (Farrell & Flannery, 2006), and so program delivery by peer leaders would seem to be an obvious format for prevention programs. To date, this has rarely occurred. Recently, Weisz and Black (2010) argued that peer leadership should be encouraged because it shows promise of being an effective means of preventing peer aggression. In advocating for peer-led programming, it is important to distinguish peer leadership from other forms of peer participation. In a recent meta-analysis of school-based prevention programs, Ttofi and Farrington (2011) found that antibullying programs with peer mediation, peer mentoring, or encouragement of peers in bystander involvement were not effective in reducing victimization. These forms of peer engagement may not be effective because they do not correspond to the peer-educator models espoused by Libby et al. (2005) or Weisz and Black. In these models, which we follow in the current study, youth are provided with extensive training in the delivery of the program content and their program delivery is closely monitored by adult program advisors.

Refining the discussion of the importance of youth leadership, Mellanby, Newcombe, Rees, and Tripp (2001) have suggested that peer-led forms of program delivery, when compared with adult-led programs, might be differentially successful in specific domains. They argue that adult-led programs might be very effective at transferring factual knowledge but that peer-led programs might be better at modifying social norms. If so, we would expect that peer leaders might be comparable with adults in changing knowledge and behavior in the areas of bullying, dating aggression, and sexual harassment but would be especially influential in the broader personal domains including attitudes and emotional school adjustment.

Research Context of School-Based Evaluations

Given the prevalence and negative outcomes associated with peer aggression, school boards in Canada legally mandate prevention initiatives in all schools. Such actions are to be strongly applauded as they reflect the important policy changes that are occurring in schools as bullying, harassment, and dating aggression become recognized as threats to public health. Reinforcing the importance of such initiatives, a recent social policy report from the Society for Research on Child Development advocated for this type of action, saying that "school-driven" prevention programs should become a part of everyday life in our schools (Jones & Bouffard, 2012).

Alongside the obvious value of such policy shifts are significant implications for applied research on prevention in schools. No longer is it possible in most jurisdictions, ethically or practically, to compare a prevention program

with a no-treatment control. Instead, the most typically available comparison group is one that would continue with its usual practices (UPs) as determined by the school board. In this context, the research question shifts from an evaluation of whether the program under investigation is of benefit compared with no program at all to a consideration of the trial program in comparison with what is currently being offered to students in their everyday student lives. Such a restriction is not uncommon in medical or psychiatric research wherein the everyday intervention is often referred to as UP (see, for example, Deans, Minneci, Danner, Eichacker, & Natanson, 2010; Thompson & Schoenfeld, 2007). Although less common in prevention research, some recent studies have successfully used a UP comparison group (see Multisite Violence Prevention Project, 2004). Inferences drawn from such comparisons are challenging because UP schools typically have some flexibility in programming within their board, and so intervention is not standardized and may include some variation in content. Nonetheless the value of such comparisons lies in the fact that they can demonstrate whether a new program has potential benefits to students within a real-world setting.

Current Study

The present study reports an evaluation of a school-based youth-led program (YLP) implemented in a school board that mandated the provision of peer violence prevention programs in all of its schools, and so the challenges described above were pertinent to the current evaluation. The YLP was developed by a community agency, under contract to the school board. Prior to the current study, a pilot evaluation was undertaken of the program when it was offered in a different school. Students who were recipients of the pilot program rated it very positively, indicating that they liked the youth-led sessions and that they learned something new about peer aggression (Josephson, Connolly, Simkins-Strong, & Weiser, 2009). Focus groups conducted with students and teachers in the pilot evaluation revealed consistent endorsement of the value of peer leadership and the positive influence of the program on school climate (Weiser et al., 2011). Reinforcing these findings, interviews with the youth leaders indicated that they viewed their involvement in the program very positively, citing increases in competence and confidence in their abilities as well as making many personal changes in their daily lives (Weiser et al., 2011).

In the current study, we evaluated the YLP by comparing it with the school board's UP of mandating individual schools to provide antiviolence programming. Varying somewhat in format from one school to another, the UP shared the common feature of being led by teachers or other adults. Our

evaluation was consistent with the framework provided by Kirkpatrick and Hawk (2006) in which four evaluation factors are outlined: reaction, learning, behavior, and results. Our pilot evaluation assessed the reactions of multiple stakeholders to the program and showed that they were very positive (Josephson et al., 2009; Weiser et al., 2011). Our current evaluation focused on: students' learning about bullying, harassment, and dating aggression; behavior and attitude change; and the results of the program on emotional school adjustment. We expected the YLP to be as effective as the UP at transferring knowledge and reducing victimization. We expected the YLP to be more effective than the UP at improving students' attitudes and their emotional school adjustment, manifested by reduced anxiety levels and a stronger sense of school connection.

Method

School Selection

In consultation with the director of the school board's Safe Schools initiative, two high schools were randomly selected from a pool of 12 high schools that were determined to be similar to each other in size (enrollment between 900 and 1,200 students), student needs, and ethno-cultural diversity. Each of the two high schools was associated with two "feeder" middle schools located in close geographic proximity and from which came the majority of their students. The two high schools, with their two middle schools, were randomly assigned to either the YLP or the board-mandated UP. Prior to treatment assignment, the school principals had agreed to accept either condition for their school.

The YLP and UP schools had two common programs. First, the participating school board mandated that all schools participate in an initiative to reinforce positive character traits, in addition to elective programming related to aggression prevention. Hence both YLP and UP participated in the character traits program in which one character attribute (e.g., respect, responsibility) was discussed each month. Also common to both YLP and UP groups, all students are provided access to guidance counselors, with whom they can discuss personal issues, including peer aggression.

Participants

Study participants were 509 middle school students who completed surveys in the fall and the spring of one academic year. They were enrolled in 42 Grade 7 and 8 classrooms, located across the four middle schools. The two

schools which received the YLP included 209 students assigned to 16 classrooms. The two schools which received the UP included 300 students assigned to 26 classrooms. Participants' age range was 11 to 14 years ($\bar{X}$ = 12.37, *SD* = .63) and gender was evenly distributed (51.4% female). The sample was ethnically diverse: Students described their backgrounds as being South Asian (34.7%), Asian (20.0%), European (12.5%), Middle Eastern (12.5%), African/Caribbean (12.5%), or Other (mixed heritage, Latino, First Nations; 7.7%).

Procedure

In each middle school, the violence prevention programs were provided to all of the enrolled students. However, participation in the research evaluation required written informed consent from the students and their parent. While all students in the middle schools were invited to participate, not all did so. In the two YLP middle schools' participation rates at pretest were 58% and 73%. In the UP schools, the rates were 42% and 55%. Sample attrition from pretest to posttest was 12% and did not differ between UP and YLP. To evaluate whether attrition from pretest to posttest might bias the study results, we compared two groups of students: those who completed pretesting only and those who completed both pretest and posttest questionnaires. The *t*-test comparisons of the outcome variables were uniformly nonsignificant as were chi-square tests for gender and ethnicity. Overall, these findings suggest that attrition was not biased toward any subgroup of the participants. Following the CONSORT GROUP guidelines (Altman et al., 2001) a flowchart of the participation rates in the schools from initial invitation to posttest is provided in Figure 1.

Pretest questionnaires were administered at the beginning of October and posttest questionnaires at the end of May of the same academic year. Depending on the wishes of the school principal, administration took place in students' classrooms, the school cafeteria, or gymnasium. The survey was designed to be completed within a regular classroom period and took approximately 45 minutes to complete. Research assistants, but not teachers, were present at each administration session and were available to answer questions regarding item comprehension.

Usual practice. The programs implemented by the UP schools were selected by the school principals from several board options and included: presentations from the police about gangs and peer aggression; antibullying presentations by internal staff or external personnel (e.g., a drama company); antibullying discussions facilitated by the guidance counselor; and group discussions of personal safety issues specific to girls. While the UP programs

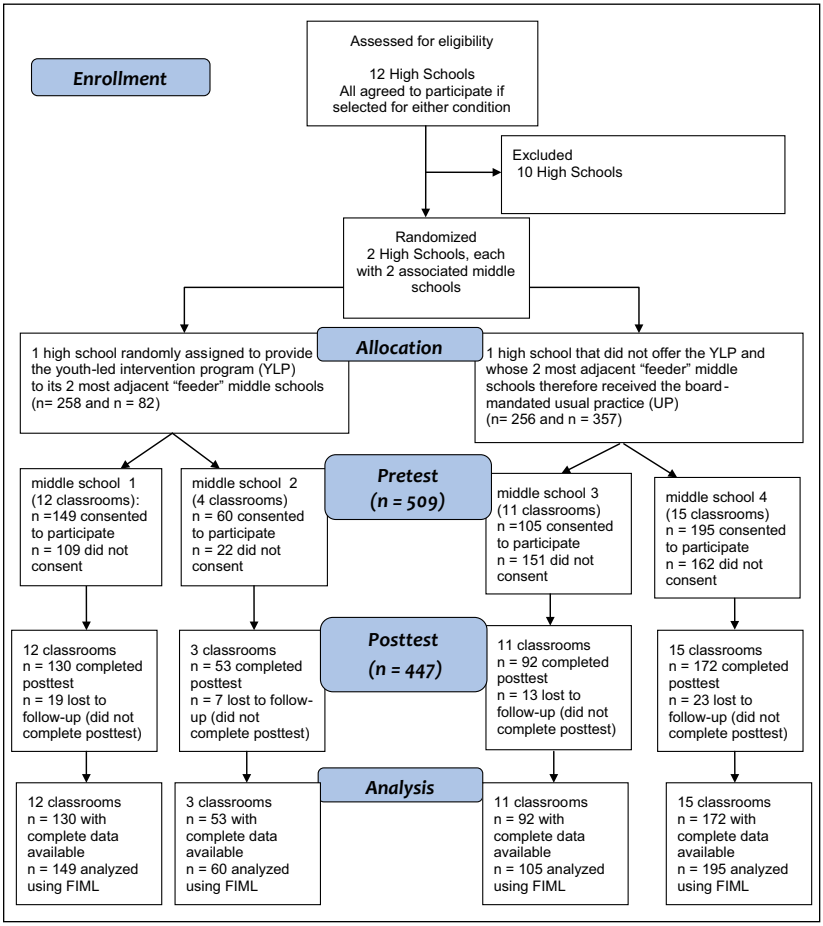

Figure 1. Flow of participants through each stage of the study.
Note: Flowchart is adapted from the flowchart offered by the CONSORT Group (Altman et al., 2001).

differed somewhat in format or content, all programs were implemented by adults: teachers, guidance counselors, or adults from the community. Each of the UP schools conducted three adult-led programs delivered in the classroom or in an assembly, for an estimated time of 90 minutes.

Youth-led aggression prevention program. The YLP (Respect in Schools Everywhere; RISE) is a manualized program in which middle school students

receive two classroom presentations led by youth leaders from the local high school (see Josephson et al., 2009, for a full description). In the RISE Program, experienced mental health workers recruit and train 25 students from Grades 11 and 12 to be peer leaders. They provide these students with the skills and knowledge they need to understand peer aggression and to lead aggression prevention classroom workshops. The youth leaders may include any interested student from the target high school. In the fall term, they participate in 16 afterschool sessions led by the mental health worker during which they are provided with education and training in aggression prevention and leadership skills. During the final sessions, the youth leaders plan two aggression prevention presentations (one on bullying and the other on gender-based aggression, including sexual harassment and dating aggression). While the youth have some flexibility in the format of the presentation, adult directors ensure that they comply with the general instructions and guidelines provided in the manual. This approach increases engagement of the youth leaders by allowing them to personalize the presentations while still maintaining consistency with the manualized program. During the winter term, these presentations are conducted in Grade 7 and 8 classrooms in the middle schools. Two YLP leaders, a young man and a young woman, conduct the classroom sessions. The classroom teacher is not present during the presentations, which are instead tactfully monitored by the mental health worker for consistency with the manual. Each class is 45 minutes in duration, for an approximate total of 90 minutes.

Ethics

Prior to the start of the intervention, the study protocol was reviewed and approved by the Ethics Review Panels (ERPs) of the investigators' respective institutions as well as by the host Board of Education. All ERPs confirmed that ethical standards for research with youth were met.

Measures

Knowledge. Knowledge about peer aggression was measured with the RISE Knowledge Questionnaire (Moran & Weiser, 2004). It includes 30 true–false items that assess three domains: bullying (15 items, for example, "Most bullying incidents have people watching them"), sexual harassment (3 items, for example, "Calling someone a 'fag' or a 'dyke' is a form of sexual harassment"), and dating aggression (12 items, for example, "Violence in relationships happens more often to teenagers than to adults"). The proportion of correct answers was computed, with higher scores indicative of greater knowledge.

Attitudes. Three measures of attitudes were completed. Pro-bullying attitudes were assessed using the Provictim Scale (Rigby & Slee, 1991), which includes 12 items rated on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is "It makes me angry when a teenager is picked on without reason." Items were reverse scored and then averaged so that higher scores indicated a more approving attitude toward bullying. Previous research on the scale has reported strong internal consistency (Cronbach's $\alpha = .78$) and demonstrated construct validity (Rigby, 2000; Rigby & Slee, 1991). Cronbach's alpha for the current sample was .60 on the pretest and .68 on the posttest. Pro-sexual harassment attitudes were assessed with the Adolescent Sexual Harassment Attitudes Scale. This scale was developed for the current study and is derived from the American Association of University Women Scale of Sexual Harassment (2001). Because our scale was unique to the current study, we conducted an exploratory factor analysis to determine whether the items formed a single factor. The analysis provided support for an eight-item scale with a Cronbach's alpha of .72 in the fall pretest and .73 in the spring posttest (sample items include "It is acceptable for someone to pull at another person's clothing in a sexual way" "It is OK to make sexual comments, jokes about a teen"). The items were rated on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) and ratings were averaged to yield a summary score in which higher values were indicative of greater tolerance of sexual harassment. Pro-dating violence attitudes were assessed with the Attitudes Towards Dating Violence Scale (Price & Byers, 1999), which includes 18 items measuring psychological, physical, and sexual dating aggression (e.g., "It is OK for a guy to badmouth his girlfriend"; "It is OK for a girl to slap her boyfriend if he deserves it"; and "When a guy pays on a date, it is OK for him to pressure his girlfriend for sex," respectively). The items were rated on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) and ratings were averaged to yield a summary score in which higher values were indicative of greater tolerance of sexual harassment. Previous research demonstrated good internal consistency (Cronbach's $\alpha = .72$-$.88$). The present study showed similar consistency ($\alpha = .74$ at pretest, .80 at posttest).

Victimization. Bullying victimization was assessed using the Canadian Public Health Association Safe School Survey for Grades 4-7 (Totten, Quigley, & Morgan, 2004). This 4-item questionnaire measures physical, verbal, social, and electronic victimization with the following items: "Have you been physically bullied at school"; "Have you been verbally bullied by insults, put-downs, or threats at school"; "Have you been left out by rumors, or by someone making you look bad"; and "Have you been bullied using the Internet, email,

phone, or cellular phone text messages." Students rated the frequency with which they had experienced each type of bullying in the past 2 months on a 4-point Likert-type scale, ranging from 0 (*never*) to 3 (*many times a week*). Scores on the 4 items were averaged to yield a summary score with higher values indicative of more victimization. Cronbach's alpha was .62 for both the pretest and posttest. Sexual harassment victimization was assessed using the Sexual Harassment Questionnaire (McMaster et al., 2002), which includes 14 items of same- and cross-gender victimization. For example, the items "How often has a teen touched, grabbed, or pinched you in a sexual way?" and "How often has a teen made sexual comments, jokes, movements, or looks" were followed by two ratings, one for "a girl (or group of girls)" and a second for "a boy (or group of boys)." The response scale ranged from 1 (*never*) to 5 (*daily*), and the items were averaged to yield a summary score with higher scores indicative of more victimization. McMaster et al. reported strong internal consistency of the scale ($\alpha = .91$). In the present study, Cronbach's alpha was .83 for the pretest and .82 for the posttest. Dating aggression victimization was assessed using the Conflict in Adolescent Dating Relationships Inventory (CADRI; Wolfe et al., 2001) in which participants rated how often they had been subjected by their dating partner to 21 acts of physical, emotional, or verbal abuse. A response scale from 1 (*never*) to 4 (*often*) was used, and items were averaged to obtain a summary score in which higher values indicate more dating aggression. Sample items include "During a conflict or argument I was kicked, hit, or punched by my boy/girlfriend"; "He or she tried to turn my friends against me"; and "He or she made fun of me in front of others." Cronbach's alpha of .68 has previously been reported (Wolfe et al., 2001). In the present study, only participants who were in a current relationship or had been in a relationship within the past 2 months completed the measure ($n = 48$; $\alpha = .88$ on the pretest, .85 on the posttest).

Emotional school adjustment. Two measures were used. Connectedness to school was measured with the Psychological Sense of School Membership Scale (PSSM; Goodenow, 1993). The PPSM includes 10 items that probe students' feelings of being respected and valued within their school (e.g., "This school listens to and values students' ideas"; "The teachers here respect me"). The items are rated on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Items were averaged to obtain a summary score with higher scores indicative of greater school connectedness. Internal consistency of .88 has previously been reported alongside evidence of construct validity (Goodenow, 1993). Comparable reliability was obtained in the current study ($\alpha = .86$ at both the pretest and posttest). Anxiety was assessed using the Shortened Screen for Child-Related Anxiety Disorders (Birmaher,

Khetarpal, Brent, Cully, Balach, Kaufman & Neer, 1997). The scale includes 20 items of symptomatic anxiety (e.g., "I get stomach aches in school" and "I worry about how well I do things"), which are rated on a Likert-type scale ranging from 0 (*not at all*) to 3 (*a lot*). Items are averaged to obtain a summary score with higher scores indicative of more anxiety. Acceptable internal consistency (Cronbach's $\alpha = .84$) and construct validity have previously been reported (Birmaher et al., 1997). Internal consistency in the current study was .89 on both the pretest and posttest.

Missing data. Where data were missing for individual items on scales, they were replaced with students' mean score on other items of that scale. If more than 30% of items were missing, mean substitution was not used, and the scale score was treated as missing. Ninety-seven participants (18.9%) had missing data for a scale. Only 48 participants (9%) reported being in dating relationships at both the pretest and the posttest, and so the measure of dating aggression victimization was missing for the majority of the sample.

Statistical Design

Multilevel linear models (MLMs; Raudenbush & Bryk, 2002; Snijders & Bosker, 1999) using Full Information Maximum Likelihood (FIML) were fitted to the data to determine the program effects on knowledge, attitudes, victimization, and emotional school adjustment. This method was selected in view of three factors: the cluster sampling used in the study, the nonindependence of students within classroom, and the repeated measurement (fall pretest and spring posttest) within students. A basic characteristic of MLM is the capacity to include random subject and classroom effects into a regression model in order to control for the influence of subjects on their repeated observations as well as nonindependence of students within the same classroom. A second important characteristic of MLM using FIML is that it uses all the available participant information for the analysis, even those with missing data at one of the assessments. This use of all data when conducting inference tests on groups with small sample size makes the inference more efficient and also increases accuracy of the standard error (Laird, 1988).

In the current study, design randomization into UP or YLP conditions occurred at the school level, while the intervention took place at the classroom level. However, school was not introduced as a level in our MLM analyses because the small number of schools in our sample precludes an accurate estimation of between-school variance (Heck, 2001). This situation is not uncommon in evaluations of school-based interventions (e.g., Salmivalli, Kaukiainen, & Voeten, 2005). Thus, in our three-level multilevel model,

Level 1 represents repeated outcome measures from pretest to posttest within individuals, Level 2 represents individuals within classrooms, and Level 3 represents classrooms.

We performed a multilevel regression analysis for each outcome variable separately using SAS Version 9.2 (SAS Institute, Cary, North Carolina; Singer, 1998). Four outcome variables had skewness values greater than 1: attitudes toward sexual harassment and the three victimization variables. Because the bullying victimization measure included scores of 0, a constant of .001 was first added to that score, to permit transformation. Log transformations were successful in reducing skewness of these measures. The predictors in the MLM regression analyses included time (pretest, posttest) at Level 1 and prevention program (YLP, UP) at Level 3. To address the key question of this evaluation, namely, a difference in changes from pretest to posttest between programs, the interaction between time, and prevention program was included in the regression. The basic description of the regression equations is reported in Appendix A. To adjust for possible gender and ethnicity effects, these variables were included as covariates in all MLM regression analyses. To examine whether gender or ethnicity moderated program outcomes, we conducted additional MLM regression analyses by including the three-way interactions of gender and ethnicity with time and prevention program as well as all two-way interactions and main effects of these variables. Interactions with gender were uniformly nonsignificant. Significant three-way interactions with ethnicity were obtained for bullying knowledge and pro-dating aggression attitudes. These are reported in subsequent sections.

Results

Descriptive Analyses

Descriptive statistics for all outcome variables are reported in Table 1. Overall, students demonstrated high levels of knowledge and moderate tolerance of bullying, sexual harassment, and dating violence. Overall, low rates of victimization were reported for all three types of peer aggression. Emotional school adjustment was generally good, with students reporting moderately high levels of school connectedness and lower levels of anxiety. The correlations among outcome variables are shown in Table 2. Knowledge and attitude variables were negatively correlated such that having greater knowledge of peer aggression was associated with less tolerant attitudes toward victimizing behaviors. Also, measures of school adjustment showed predicted trends: Students who reported higher rates of victimization reported less school connectedness and more anxiety.

Table 1. Outcome Measures for Youth-Led Program and Usual Practice.

	Youth-led program		Usual practice program	
	Pretest	Posttest	Pretest	Posttest
	$\bar{X}$ (*SD*)	$\bar{X}$ (*SD*)	$\bar{X}$ (*SD*)	$\bar{X}$ (*SD*)
Knowledge				
Bullying	0.78 (.15)	0.82 (.13)	0.77 (.15)	0.82 (.13)
Sexual harassment	0.69 (.28)	0.83 (.23)	0.62 (.29)	0.71 (.28)
Dating aggression	0.66 (.16)	0.73 (.14)	0.66 (.15)	0.69 (.15)
Attitudes				
Pro-bullying	1.89 (.44)	1.86 (.49)	1.98 (.49)	1.89 (.49)
Pro-sexual harassment	1.34 (.43)	1.29 (.41)	1.37 (.51)	1.39 (.46)
Pro-dating aggression	1.92 (.51)	1.82 (.50)	2.01 (.51)	1.89 (.52)
Victimization				
Bullying	0.32 (.42)	0.33 (.38)	0.37 (.42)	0.36 (.43)
Sexual harassment	1.17 (.34)	1.20 (.33)	1.18 (.32)	1.21 (.34)
Dating aggression	1.21 (.24)	1.21 (.24)	1.16 (.19)	1.30 (.36)
School connectedness	4.07 (.64)	4.09 (.63)	3.86 (.71)	3.73 (.70)
Anxiety	0.57 (.38)	0.52 (.36)	0.58 (.37)	0.60 (.37)

Preliminary Analyses

Prior to computing the MLM, variances within and between classrooms as well as the intraclass correlations were computed for all pretest variables. Between classroom variances were significant for knowledge of bullying, knowledge of dating violence, and bullying victimization. Within classroom variances were significant for all outcomes. Intraclass correlations with values of .03 or higher were found for bullying knowledge, dating violence knowledge, sexual harassment victimization, and school connectedness. The intraclass correlations and the variances between and within classroom were also computed for changes in the outcome variables at posttest. A similar pattern to the pretest findings was observed: Significant within classroom variance across all outcomes, modest between classroom variance (significant for bullying knowledge), and intraclass correlation values of .03 or higher for the three knowledge outcomes, pro-bullying and pro-sexual harassment attitudes, and school connectedness. The individual values are reported in Appendix B. Taken together, these findings confirm the use of MLM for our investigation of comparative changes in UP and YLP over time, given the hierarchically structured nature of our data, namely, students nested within classrooms, and repeated observations within student.

Table 2. Intercorrelations of Study Construct and Outcomes.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Bullying knowledge	—										
2. Sexual harassment knowledge	.05	—									
3. Dating aggression knowledge	.25**	.01	—								
4. Pro-bullying attitudes	−.29**	−.06	−.09**	—							
5. Pro-sexual harassment attitudes	−.19**	−.09*	−.12**	.48**	—						
6. Pro-dating aggression attitudes	−.29**	.004	−.22**	.37**	.30**	—					
7. Bullying victimization	.03	−.02	.01	.01	.03	.06	—				
8. Sexual harassment victimization	−.01	−.05	−.004	.16**	.23**	.13**	.36**	—			
9. Dating aggression victimization	.000	.02	.03	.06	.36**	.33**	.01	.45**	—		
10. School connectedness	.03	.08	−.02	−.13**	−.24**	−.06**	−.27**	−.22**	−.05	—	
11. Anxiety	−.01	.02	−.01	−.07	.08	.11*	.33**	.34**	.26*	−.25**	—

Note. Values are taken from fall data.
*$p < .05$. **$p < .01$.

Multilevel Linear Model Results: Changes in Outcomes From Pretest to Posttest

To provide the background for interpreting the Program × Time interactions, we first examine the effects of YLP and UP on the outcome variables, as revealed through the main effects of each program. Following this, we examine the comparison of the magnitude of change produced by YLP and UP on the outcome variables, as revealed through the Time × Program interaction effects. Finally, we consider whether gender or ethnicity moderated the program effects, as evidenced by significant three-way interactions. Tests of significance were conducted with alpha set at .05. Table 3 presents the estimated changes from fall to spring for all outcome variables for the UP and YLP intervention. The differences in the magnitudes of the estimated changes between the intervention groups for each outcome variable are also shown.

Knowledge. Students in both the UP and YLP schools had a significant increase in knowledge about bullying, sexual harassment, and dating aggression from fall to spring. Comparing the magnitude of the changes in the two groups demonstrated a greater gain in dating aggression knowledge for the YLP group than for the UP group. The Time × Program × Ethnicity interaction revealed two moderating effects for bullying knowledge: Middle Eastern youth learned significantly more in the YLP program than the UP program, estimate (*SE*) = −.11(0.04), $p = .02$, whereas South Asian youth benefitted more from the UP program, estimate (*SE*) = 0.07(0.02), $p = .002$.

Attitudes. Significant attitudinal changes were noted for both interventions. Less accepting attitudes toward dating aggression were obtained for both YLP and UP students. The magnitude of change in the two groups did not differ overall. However, a moderating effect of ethnicity was obtained such that the African/Caribbean youth showed significantly more change in the YLP program than the UP program, estimate (*SE*) = − 0.34 (0.12), $p = .005$. Attitudes toward bullying for students in the UP group became significantly less tolerant in the spring, although a comparison of this change to that of the YLP group was not significant. No significant changes in attitudes toward sexual harassment were detected.

Victimization. Reports of bullying and sexual harassment victimization did not change for students in either of the intervention groups. Reports of dating aggression among students in the UP program increased over time, however, the comparison with changes in the YLP group was not significant.

Table 3. Multilevel Regression Analyses Assessing Program Effects on Outcome Variables.

	Measure										
	Knowledge			Attitudes			Victimization			Emotional school adjustment	
Program	Bullying	Sexual harassment	Dating aggression	Pro-bullying	Pro-sexual harassment	Pro-dating aggression	Bullying	Sexual harassment	Dating aggression[a]	Anxiety	School connectedness
Youth led											
Change (*SE*)	0.052 (0.011)	0.061 (0.018)	0.073 (0.012)	− 0.026 (0.035)	− 0.033 (0.022)	− 0.104 (0.034)	0.194 (0.239)	0.024 (0.015)	0.011 (0.040)	− 0.079 (0.026)	0.016 (0.044)
p	**<.001**	**<.001**	**<.001**	.47	.15	**.002**	.42	.11	.78	**.003**	.72
Usual practice											
Change (*SE*)	0.048 (0.009)	0.039 (0.015)	0.027 (0.010)	− 0.089 (0.029)	0.023 (0.019)	− 0.116 (0.028)	− 0.362 (0.198)	0.018 (0.012)	0.087 (0.044)	− 0.012 (0.022)	− 0.117 (0.037)
p	**<.001**	**.009**	**.006**	**.003**	.23	**<.001**	.069	.15	**.05**	.59	**.002**
Youth led vs. usual practice											
Difference (*SE*)	0.003 (0.014)	0.022 (0.024)	0.046 (0.016)	0.063 (0.046)	−0.055 (0.029)	0.012 (0.044)	0.556 (0.310)	0.006 (0.019)	−0.076 (0.059)	− 0.067 (0.034)	0.133 (0.058)
p	.81	.36	**.003**	.17	.06	.79	.074	.74	.20	**.049**	**.022**
Effect size (Cohen's *d*)	0.001	0.02	0.30	0.13	0.19	0.02	0.19	0.03	0.32	0.18	0.19

Note. Estimated changes, group differences in change, *SE*, and *p* were based on a three-level multilevel model analysis in which Level 1 represents repeated outcome measures from fall (Pre) to spring (Post) within individuals, Level 2 represents individuals within classrooms, and Level 3 represents classrooms. Analyses of attitudes toward sexual harassment and the three victimization variables used log transformed data.

[a]Analyses of dating aggression victimization were based on the small portion of the sample (n = 48) who were dating in both the spring and fall data collection periods.

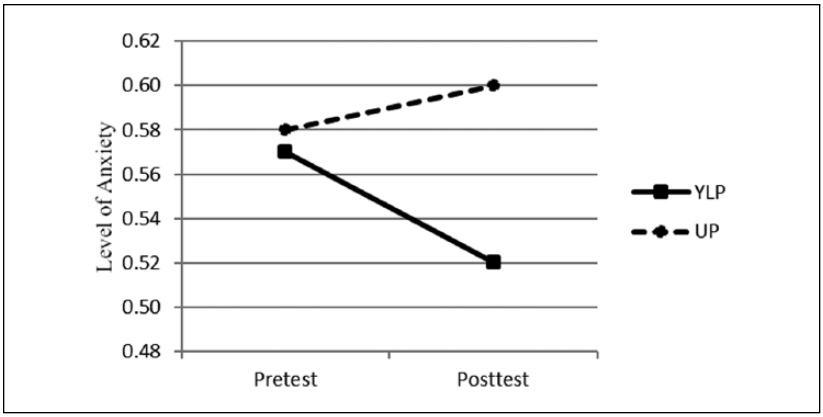

Figure 2. Anxiety scores at pretest and posttest for YLP and UP.
Note. YLP = youth-led program; UP = usual practice.

Emotional school adjustment. Significant differences favoring the YLP were noted for both indices of emotional school adjustment. YLP students reported a significant reduction in anxiety from fall to spring, whereas the UP group did not show any decline. Students in the YLP intervention maintained a high level of school connectedness from fall to spring, whereas those in the UP group showed a significant decline in this outcome variable. These patterns of change in school connectedness and anxiety are shown graphically in Figures 2 and 3.

Effect Sizes of Changes in Outcome Variables

To enhance comparability across outcomes, Cohen's *d* (Cohen, 1988) was computed for the difference between the UP and YLP in the amount of change generated by the two groups. As shown in Table 3, the obtained values, ranging from 0.02 to 0.32, were indicative of small effect sizes.

Discussion

The present study evaluated a prevention program that used youth leaders to inform middle school students about bullying, sexual harassment, and dating aggression. As such, this study is one of the first that we know of to extend the use of youth leaders from the public health domain to violence prevention. Our research also extends prior studies by evaluating the impact of the program on students' emotional school adjustment and comparing the YLP with UPs in the school board, which were adult-led programs. The results

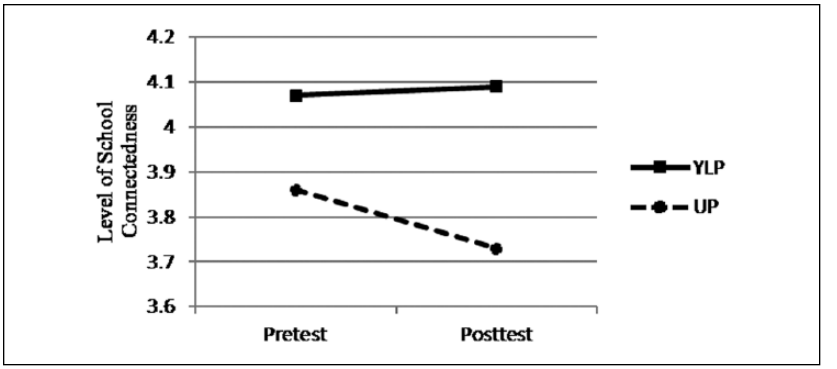

Figure 3. School connectedness scores at pretest and posttest for YLP and UP.
Note. YLP = youth-led program; UP = usual practice.

revealed common changes associated with both of the intervention programs and unique changes associated with the YLP. Overall, the results suggest that youth leadership is a viable model for aggression prevention in schools, and integration of this approach in current prevention strategies using adult leaders would be of benefit to students.

Most school-based aggression prevention programs target knowledge and attitude change as key mechanisms for reducing aggressive behavior (Whitaker et al., 2006) because research demonstrates a link from knowledge to attitudes and from attitudes to peer victimization (Josephson & Proulx, 2008; Williams, Connolly, Pepler, & Craig, 2005). Increasing youth's knowledge about bullying, sexual harassment, and dating aggression as well as encouraging less accepting attitudes toward these behaviors are, therefore, essential components for achieving a decrease in multiple forms of peer victimization. In our study, students in both the YLP and UP intervention programs experienced learning changes that could set the framework for future behavior change. These findings are consistent with Mellanby and colleagues' (2001) conclusions that adults are effective in transmitting information to students. They extend prior research in showing that youth leaders can also be effective in producing knowledge gains, and in the case of dating aggression, perhaps even more effective than adults. Students in both interventions also reported attitudinal changes although the findings were less conclusive than those for knowledge gains. While we had expected that youth leaders would be more effective than teachers in shifting attitudes, we found that both leadership forms produced quite similar changes in attitudes toward dating violence and adult-led programming produced some change in bullying

attitudes. Neither intervention in our study was able to produce significant improvements in attitudes toward sexual harassment. It is not immediately clear why the programs did not yield consistent attitudinal changes. One possibility is a ceiling effect. Overall, the youths' attitudes were already highly intolerant of aggression, especially sexual harassment, thus making further reductions very difficult to produce. It is also possible that the content of the programs was not effective for this domain of peer aggression. Lastly, we note that the interventions were very brief, and it may take more intense efforts to create consistent changes in attitudes. Whatever the reason, attitudes toward peer aggression should continue to be addressed in future research with youth in this age group, given that middle school is a critical time for the emergence of diverse forms of peer aggression (Guerra, Williams, & Sadek, 2011; McMaster et al., 2002).

Changes in these contributing factors, however, were not sufficient to reduce rates of victimization in our study, and in fact, dating violence victimization showed a slight increase in the UP group across time. This outcome is unfortunately consistent with the evaluations of many other programs, demonstrating that reducing aggressive peer behavior is difficult to do, especially with limited programming (e.g., Ferguson et al., 2007; Multisite Violence Prevention Project, 2008; Whitaker et al., 2006), and certainly that was the case in the current study. Research is beginning to converge on the idea that greater exposure to a program results in stronger outcomes (Ttofi & Farrington, 2011). Future work with youth leaders should extend the treatment to determine if this maximizes effectiveness (Charlebois, Brendgen, Vitaro, Normandeau, & Boudreau, 2004; Farrington & Ttofi, 2009; Flannery et al., 2003; Hahn et al., 2007; Lassen, Steele, & Sailor, 2006; Ttofi & Farrington, 2011; Wolfe et al., 2003). Researchers should also consider longer term outcomes in keeping with a model such as Kirkpatrick's (Kirkpatrick & Hawk, 2006), in which the stages of change can be evaluated as they unfold in sequence over time. This longer term focus might be particularly important for detecting reductions in victimization from dating aggression. Romantic relationships are emergent in the middle school years and few youth report dating at this time (Connolly et al., 2000). In our study, for example, less than 10% of the youths were in a romantic relationship. While an intervention in the middle school may change dating patterns, this effect may be detected only later on when sufficient numbers of students are actively dating.

Mellanby et al. (2001) found evidence that youth and adult leaders had strengths in specific domains, with youth being better than adults at changing social norms. Our findings provide empirical support for this premise as they revealed unique gains of youth leadership in the domain of emotional school adjustment. Indeed, the YLP produced its greatest effects on students'

emotional adjustment, significantly better than the UP. Anxiety levels declined and school connectedness remained high in the YLP, while students in the UP persisted in their initial level of anxiety and decreased in school connectedness over the course of the year. Previous research has demonstrated that students' connection to school typically decreases as they progress through middle school (e.g., Durlak et al., 2011), and so our findings of maintenance over time are encouraging. In general, these findings support our expectation that a YLP to prevent peer aggression can have a positive influence on the emotional climate of a school by reducing anxiety and supporting a sense of acceptance and respect among students and teachers. In view of the modest effect sizes found for these outcomes, our findings should be viewed as preliminary, and further work with more intensive programming is needed to substantiate them.

Although not central issues in our study, we did consider whether participants' gender and ethnicity might moderate program effects. The absence of gender effects in our study is in line with much previous research in which inconsistent or nonsignificant moderator effects have been reported (e.g., Garaigordobil, Maganto, Pérez, & Sansinenea, 2009; Taylor, Stein, & Burden, 2010; Wilson et al., 2003). Our findings that certain ethnic groups benefitted more from youth leadership whereas another group gained in the adult-led program raise some intriguing questions. While a meta-analysis of aggression prevention studies did not find that ethnicity was a significant moderator (Wilson et al., 2003), a recent clinical trial reported that the Olweus antibullying program was most effective for White youth, compared with Hispanic or Black youth (Bauer, Lozano, & Rivara, 2007). The diverse ethnic groupings of our research differ from those typically reported in U.S. samples, and so our findings add to emergent data that ethnicity may be an important demographic feature to consider when planning prevention programs. We note, however, that our findings lack a theoretical premise, and the numbers of youth in each ethnic group were small. Hence the ethnicity findings should be interpreted cautiously. Nonetheless it is reasonable to conclude that there is a need for a more nuanced investigation of how the demographic characteristics of the target youth might influence the effectiveness of an intervention program, including one that uses youth leaders.

Several limitations must be considered when interpreting the results of the current study. The absence of a no-treatment control is problematic, especially given that "usual practice" was not a homogeneous set of interventions, except in the sense of being offered by adults. This leaves open the possibility that the changes noted in the study were due to something other than the prevention programs, such as maturational changes or increased interest in the topics stimulated by the pretest questionnaires. This problem could be addressed in

future research by adding a control group in which the YLP is delayed to a later part of the school year. We also note that our design assessed posttest changes in the spring and compared them with pretest scores collected in the fall. Because of this, we cannot be certain that the timing of assessment did not influence the results. Research designs that control for time of year in collecting pre- and posttest data, such as an age-cohort design, would be important to implement in future research (Ttofi & Farrington, 2011). Third, although schools were randomly assigned to treatment groups, our findings are based on only four middle schools. While these findings demonstrate promise for the effectiveness of youth leaders, they should be replicated with a larger sample of schools. Measurement issues represent another limitation of the present study. The measure of bullying victimization proved to be relatively less reliable, and this may have reduced power to detect small changes in the behavioral domain. The small size of the effects obtained for the outcome variables, which did show significant change is also an issue to be addressed in future research. Evaluating interventions in which the intensity of the YLP is increased would help to clarify whether such programs can produce more substantive effects or if small effect sizes are to be expected. Finally, the mechanisms of change related to youth-led programming are not addressed by this study. It remains unclear what it is about youth leadership that results in greater improvement in emotional school adjustment. We speculate that students' identification with the youth leaders is a key ingredient. It would be fruitful to investigate this possibility, along with other mechanisms of successful youth leadership, in future research.

In conclusion, we have demonstrated that a brief YLP to prevent peer aggression can bring about changes in knowledge, attitudes, and emotional school adjustment. Multipronged programs that take the best of adult-led interventions and also harness the power of youth for positive change are a critical direction for future programs to prevent aggression and improve school safety.

Appendix A

General Multilevel Model Equation

The three-level model in terms of repeated observations (Level 1) nested within subjects (Level 2) who are nested within classrooms (Level 3) is given by the following:

Level 1: Individual changes over time (from pretest to posttest):

$$y_{tik} = \pi_{0ik} + \pi_{1ik} \cdot \text{time} + \varepsilon_{tik},$$

where y_{tik} is the outcome (e.g., bullying attitudes) of student i in classroom k at time t ($t = 0$ for pretest and $t = 1$ for posttest); π_{0ik} is the outcome (e.g., bullying attitudes) of student i in classroom k at time 0 (i.e., pretest); π_{1ik} is the change from pretest to posttest in outcome (e.g., bullying attitudes) of student i in classroom k; ε_{tik} is the residual.

Level 2: Variability among individuals in the level of outcome (random intercept only: initial level of outcome varying randomly among students in each classroom)

$$\pi_{0ik} = \beta_{00k} + r_{0ik}$$
$$\pi_{1ik} = \beta_{10k},$$

where β_{00k} is the mean initial level in classroom k; and r_{0ik} is a random individual effect; β_{10k} is the mean change from pretest to posttest in classroom k;

Level 3: Variability among classrooms (random intercept only: classroom mean initial level of outcome varying randomly around a grand mean)

$$\beta_{00k} = \gamma_{000} + \gamma_{001} \times \text{group} + u_{00k}$$
$$\beta_{10k} = \gamma_{100} + \gamma_{101} \times \text{group},$$

where γ_{000} is the mean outcome for those in the UP program at pretest; γ_{001} is the mean difference between the UP program and YLP in the outcome at pretest; and u_{00k} is a random classroom effect. γ_{100} is the mean change from pretest to posttest for those in the UP program; γ_{101} is the mean difference between the UP program and YLP in the change of outcome from pretest to posttest.

Appendix B

Table B1. Classroom Variances and Intraclass Correlations for Outcome Variables at Pretest.

Variable	Variance		Intraclass correlation
	Between classrooms	Within classrooms	
Bullying knowledge	0.0027**	0.022**	.11
Sexual harassment knowledge	0.0008	0.0515**	.02
Dating violence knowledge	0.0022**	0.022**	.09
Pro-bullying attitudes	0.00001	0.2227**	.0001
Pro-sexual harassment attitudes	0.0001	0.087**	.001
Pro-dating violence attitudes	0.00001	0.25**	.0001
Bullying victimization	0.16**	8.62**	.02

(continued)

Table B1 (continued)

Variable	Variance: Between classrooms	Variance: Within classrooms	Intraclass correlation
Sexual harassment victimization	0.0012	0.037**	.03
Dating violence victimization	0.00001	0.051**	.0001
Anxiety	0.00015	0.144**	.001
School connectedness	0.018*	0.454**	.04

Note. Attitudes toward sexual harassment and all victimization variables were log transformed to reduce skewness.
*$p < .10$. **$p < .05$.

Table B2. Classroom Variances and Intraclass Correlations for Change From Pretest to Posttest.

Variable	Variance: Between classrooms	Variance: Within classrooms	Intraclass correlation
Bullying knowledge	0.0015**	0.019**	.07
Sexual harassment knowledge	0.0016	0.06**	.03
Dating violence knowledge	0.0013*	0.025**	.05
Pro-bullying attitudes	0.0058	0.228**	.025
Pro-sexual harassment attitudes	0.0036	0.089**	.04
Pro-dating violence attitudes	0.00001	0.21**	.0001
Bullying victimization	0.00001	10.85**	.0001
Sexual harassment victimization	0.0001	0.04**	.001
Dating violence victimization	0.00001	0.04**	.0001
Anxiety	0.0023	0.125**	.02
School connectedness	0.018*	0.358**	.05

Note. Attitudes toward sexual harassment and all victimization variables were log transformed to reduce skewness.
*$p < .10$. **$p < .05$.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received financial support for the research from the Ontario Centre of Excellence for Child and Youth Mental Health.

References

Altman, D.G., Schultz, K. F., Moher, D., Egger, M., Davidoff, F., Elbourne, D., Gotzsche, P. C., & Lang, T. (2001). The revised CONSORT statement for reporting randomized trials: Explanation and elaboration. *Journal of Internal Medicine*, *134*(8), 663-694. Available at http://www.consort-statement.org.

American Association of University Women. (2001). *Hostile hallways: Bullying, teasing, and sexual harassment in school*. Washington, DC: American Association of University Women and Educational Foundation.

Bauer, N. S., Lozano, P., & Rivara, F. P. (2007). The effectiveness of the Olweus Bullying Prevention Program in public middle schools: A controlled trial. *Journal of Adolescent Health*, *40*, 266-274.

Birmaher, B., Khetarpal, S., Brent, D., Cully, M., Balach, L., Kaufman, J., & Neer, S. M. (1997). The Screen for Child Anxiety Related Emotional Disorders (SCARED): Scale construction and psychometric characteristics. *Journal of the American Academy of Child & Adolescent Psychiatry*, *36*, 545-553.

Capaldi, D. M., Knoble, N. B., Shortt, J. W., & Kim, H. K. (2012). A systematic review of risk factors for intimate partner violence. *Partner Abuse*, *3*, 231-280.

Card, N. A., & Hodges, E. V. E. (2008). Peer victimization among schoolchildren: Correlations, causes, consequences, and considerations in assessment and intervention. *School Psychology Quarterly*, *23*, 451-461. doi:10.1037/a0012769

Carney, J. V., Hazler, R. J., Oh, I., Hibel, L. C., & Granger, D. A. (2010). The relations between bullying exposures in middle childhood, anxiety, and adrenocortical activity. *Journal of School Violence*, *9*, 194-211.

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2010). *Web-Based Injury Statistics Query and Reporting System (WISQARS)*. Retrieved from www.cdc.gov/ViolencePrevention/pdf/YV-DataSheet-a.pdf

Charlebois, P., Brendgen, M., Vitaro, F., Normandeau, S., & Boudreau, J. F. (2004). Examining dosage effects on prevention outcomes: Results from a multi-modal longitudinal preventive intervention for young disruptive boys. *Journal of School Psychology*, *42*, 201-220. doi:10.1016/j/jsp/2003.12.003

Cheon, J. W. (2008). Best practices in community-based prevention for youth substance-reduction: Towards strengths-based positive development policy. *Journal of Community Psychology*, *36*, 761-779.

Chiodo, D., Wolfe, D. A., Crooks, C., Hughes, R., & Jaffe, P. (2009). Impact of sexual harassment victimization by peers on subsequent adolescent victimization and adjustment: A longitudinal study. *Journal of Adolescent Health*, *45*, 246-252. doi:10.1016/j.adohealth.2009.01.006

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Connolly, J., Pepler, D., Craig, W., & Taradash, A. (2000). Dating experiences of bullies in early adolescence. *Child Maltreatment*, *5*, 299-310.

Craig, W., & Harel, Y. (2004). Bullying, physical fighting, and victimization. In C. Currie, C. Roberts, A. Morgan, R. Smith, W. Setterobulte, O. Samdel & V. Rasmussen (Eds.), *Young people's health in context: International report from the HBSC 29 2001/02 survey* (WHO Policy Series: Health policy for children and adolescents Issue 4). Copenhagen, Denmark: WHO Regional Office for Europe.

Deans, K. J., Minneci, P. C., Danner, R. L., Eichacker, P. O., & Natanson, C. (2010). Practice misalignments in randomized controlled trials: Identification, impact, and potential solutions. *Anesthesia & Analgesia*, *11*, 444-450.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, *82*, 405-432.

Espelage, D. L., & Holt, M. K. (2007). Dating violence and sexual harassment across the bully-victim continuum among middle and high school students. *Journal of Youth and Adolescence*, *36*, 799-811.

Farrell, A. D., & Flannery, D. J. (2006). Youth violence prevention: Are we there yet? *Aggression and Violent Behavior*, *11*, 138-150. doi:10.1016/j.avb.2005.07.008

Farrell, A. D., Meyer, A. L., Sullivan, T. N., & Kung, E. M. (2003). Evaluation of the Responding in Peaceful and Positive Ways (RIPP) seventh grade violence prevention curriculum. *Journal of Child and Family Studies*, *12*, 101-120.

Farrington, D. P., & Ttofi, M. M. (2009). *School based programs to reduce bullying and victimization*. (Campbell Systematic Reviews, 2009:6). Oslo, Norway: The Campbell Collaboration. Retrieved from http://www.campbellcollaboration.org/lib/download/718/

Ferguson, C. J., Miguel, C. S., Kilburn, J. C., Jr., & Sanchez, P. (2007). The effectiveness of school-based anti-bullying programs: A meta-analytic review. *Criminal Justice Review*, *32*, 401-414.

Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007). Poly-victimization: A neglected component in child victimization. *Child Abuse & Neglect*, *31*, 7-26. doi:10.1016/j.chiabu.2006.06.008

Flannery, D. J., Vazsonyi, A. T., Liau, A. K., Guo, S., Powell, K. E., Atha, H., & Embry, D. (2003). Initial behavior outcomes for the peacebuilders universal school-based violence prevention program. *Developmental Psychology*, *39*, 292-308. doi:10.1037/0012-1649.39.2.292

Garaigordobil, M., Maganto, C., Pérez, J., & Sansinenea, E. (2009). Gender differences in socioemotional factors during adolescence and effects of a violence prevention program. *Journal of Adolescent Health*, *44*, 468-477. doi:10.1016/j.jadohealth.2008.09.014

Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, *30*, 79-90.

Gruber, J. E., & Fineran, S. (2007). The impact of bullying and sexual harassment on middle and high school girls. *Violence Against Women*, *13*, 627-643.

Guerra, N., Williams, K., & Sadek, S. (2011). Understanding bullying and victimization during childhood and adolescence: A mixed methods study. *Child Development*, *82*, 295-310.

Hahn, R., Fuqua-Whitley, D., Wethington, H., Lowy, J., Crosby, A., Fullilove, M., & Dahlberg, L. (2007). Effectiveness of universal school-based programs to prevent violence and aggressive behavior: A systematic review. *American Journal of Preventive Medicine*, *33*, 114-129. doi:10.1016/j.amepre.2007.04.012

Halpern, C. T., Oslak, S. G., Young, M. L., Martin, S. L., & Kupper, L. L. (2001). Partner violence among adolescents in opposite-sex romantic relationships: Findings from the national longitudinal study of adolescent health. *American Journal of Public Health*, *91*, 169-1685.

Heck, R. H. (2001). Multilevel modeling with SEM. In G. A. Marcoulides & R. E. Schumacker (Eds.), *New developments and techniques in structural equation modeling* (pp. 89-127). Mahwah, NJ: Lawrence Erlbaum.

Holt, M. K., & Espelage, D. L. (2003). A cluster analytic investigation of victimization among high school students: Are profiles differentially associated with psychological symptoms and school belonging? *Journal of Applied School Psychology*, *19*, 81-98. doi:10.1300/J008v19n02_06

Holt, M. K., & Espelage, D. L. (2005). Peer victimization among adolescents: A preliminary perspective on the co-occurrence of sexual harassment, dating violence, and bullying victimization. In K. Kendall Tackett & S. Giacomoni (Eds.), *Victimization of children and youth: Patterns of abuse, response strategies* (pp. 13.11-13.16). Kingston, NJ: Civic Research Institute.

Holt, M. K., & Espelage, D. L. (2012). A cluster analytic investigation of victimization among high school students. *Journal of Applied School Psychology*, *19*, 81-98.

Jones, S. M., & Bouffard, S. M. (2012). Social and emotional learning in schools: From programs to strategies. *Social Policy Report*, *26*, 3-22.

Josephson, W. L., Connolly, J. C., Simkins-Strong, E., & Weiser, J. (2009). Preventing adolescent dating aggression: Why it's an issue and what to do about it. In W. M. Craig, D. J. Pepler, & J. Cummings (Eds.), *PREVNet Series: Vol. 2. Rise up for respectful relationships: Prevent bullying* (pp. 125-138). Ottawa, Ontario, Canada: National Printers.

Josephson, W. L., & Proulx, J. B. (2008). Violence in young adolescents' relationships: A path model. *Journal of Interpersonal Violence*, *23*, 189-208.

Juvonen, J., Wang, Y., & Espinoza, G. (2011). Bullying experiences and compromised academic performance across middle school grades. *Journal of Early Adolescence*, *31*, 152-173. doi:10.1177/0272431610379415

Kirkpatrick, J., & Hawk, L. (2006). Curricula and evaluation: Maximizing results. *Training and Development*, *60*, 61-62.

Laird, N. M. (1988). Missing data in longitudinal studies. *Statistics in Medicine*, *7*, 305-315.

Lassen, S. R., Steele, M. M., & Sailor, W. (2006). The relationship of school-wide positive behavior support to academic achievement in an urban middle school. *Psychology in the Schools*, *43*, 701-712.

Libby, M., Rosen, M., & Sedonaen, M. (2005). Building youth-adult partnerships for community change: Lessons from the Youth Leadership Institute. *Journal of Community Psychology*, *33*, 111-120. doi:10.1002/jcop.20037

Lichty, L., & Campbell, R. (2012). Targets and witnesses: Middle school students' sexual harassment experiences. *Journal of Early Adolescence*, *32*, 414-430.

Maticka-Tyndale, E., & Barnett, J. (2010). Peer-led interventions to reduce HIV risk of youth: A review. *Evaluation and Program Planning*, *33*, 98-112. doi:10.1016/j.evalprogplan.2009.07.001

McMaster, L., Connolly, J., Pepler, D., & Craig, W. (2002). Peer to peer sexual harassment in early adolescence: A developmental perspective. *Development and Psychopathology*, *14*, 91-105.

Mellanby, A. R., Newcombe, R. G., Rees, J. J., & Tripp, J. H. (2001). A comparative study of peer-led and adult-led school sex education. *Health Education Research: Theory & Practice*, *16*, 481-492. doi:10.1093/her/16.4.481

Mellanby, A. R., Rees, J. B., & Tripp, J. H. (2000). Peer-led and adult-led school health education: A critical review of available comparative research. *Health Education Research: Theory & Practice*, *15*, 533-545.

Moran, M., & Weiser, J. (2004). *RISE Knowledge Questionnaire*. Unpublished Measure.

Multisite Violence Prevention Project. (2004). The Multisite Violence Prevention Project: Background and overview. *American Journal of Preventive Medicine*, *26*, 3-11.

Multisite Violence Prevention Project. (2008). The Multisite Violence Prevention Project: Impact of a universal school-based violence prevention program on social-cognitive outcomes. *Prevention Science*, *9*, 231-244. doi:10.1007/s11121-008-0101-1

Nansel, T. R., Haynie, D. L., & Simons-Morton, B. (2003). The association of bullying and victimization with middle school adjustment. *Journal of Applied School Psychology*, *19*, 45-61.

Nansel, T. R., Overpeck, M., Pilla, R. S., Ruan, W. J., & Simons-Morton, B. G. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *Journal of the American Medical Association*, *285*, 2094-2100.

Olweus, D. (1993). *Bullying at school: What we know and what we can do*. Malden, MA: Blackwell.

Olweus, D., & Limber, S. (1999). *Bullying Prevention Program*. Boulder, CO: Center for the Study and Prevention of Violence.

Peleg-Oren, N., Cardenas, G. A., Comerford, M., & Galea, S. (2012). An association between bullying behaviors and alcohol use among middle school students. *Journal of Early Adolescence*, *32*, 761-775. doi:10.1177/0272431610387144

Pepler, D. J., & Craig, W. M. (2000). *Making a difference in bullying*. Retrieved from http://www.yorku.ca/lamarsh

Pepler, D. J., & Craig, W. M. (2003). Identifying and targeting risk for involvement in bullying and victimization. *The Canadian Journal of Psychiatry*, *48*, 577-582.

Pepler, D. J., Craig, W. M., Connolly, J. A., Yuile, A., McMaster, L., & Jiang, D. (2006). A developmental perspective on bullying. *Aggressive Behavior*, *32*, 376-384.

Price, E., & Byers, E. (1999). The Attitudes Towards Dating Violence Scales: Development and initial validation. *Journal of Family Violence*, *14*, 351-375. doi:10.1023/A:1022830114772

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models* (2nd ed.). Thousand Oaks, CA: SAGE.

Regan, M. E. (2009). Implementation and evaluation of a youth violence prevention program for adolescents. *Journal of School Nursing*, *25*, 27-33.

Rigby, K. (2000). Effects of peer victimization in schools and perceived social support on adolescent well-being. *Journal of Adolescence*, *23*, 57-68. doi:10.1006/jado.1999.0289

Rigby, K., & Slee, P. T. (1991). Bullying among Australian school children: Reported behavior and attitudes toward victims. *The Journal of Social Psychology*, *131*, 615-627.

Salmivalli, C., Garandeau, C., & Veenstra, R. (2012). KiVa anti-bullying program: Implications for school adjustment. In A. M. Ryan & G. W. Ladd (Eds.), *Peer relationships and adjustment at school* (pp. 279-307). Charlotte, NC: Information Age Publishing.

Salmivalli, C., Kaukiainen, A., & Voeten, M. (2005). Anti-bullying intervention: Implementation and outcome. *British Journal of Educational Psychology*, *75*, 465-487. doi:10.1348/000709905X26011

Shapiro, J. P., Burgoon, J. D., Welker, C. J., & Clough, J. B. (2002). Evaluation of the Peacemaker Program: School-based violence prevention for students in grades four through eight. *Psychology in the Schools*, *39*, 87-100.

Shochet, I. M., Dadds, M. R., Ham, D., & Montague, R. (2006). School connectedness is an underemphasized parameter in adolescent health: Results of a community prediction study. *Journal of Clinical Child & Adolescent Psychology*, *35*, 170-179.

Shute, R., Owens, L., & Slee, P. (2008). Everyday victimization of adolescent girls by boys: Sexual harassment, bullying or aggression? *Sex Roles*, *58*, 477-489. doi:10.1007/s11199-007-9363-5

Simoni, J. M., Nelson, K. M., Franks, J. C., Yard, S. S., & Lehavot, K. (2011). Are peer interventions for HIV efficacious? A systematic review. *Aids and Behavior*, *15*, 1589-1595.

Singer, J. D. (1998). Using SAS PROC MIXED to fit multilevel models, hierarchical models, and individual growth models. *Journal of Educational and Behavioral Statistics*, *24*, 323-355.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. London, England: SAGE.

Taylor, B. G., Stein, N., & Burden, F. F. (2010). Exploring gender differences in dating violence/harassment prevention programming in middle schools: Results

from a randomized experiment. *Journal of Experimental Criminology*, *6*, 419-445. doi:10.1007/s11292-010-9103-7

Thompson, B. T., & Schoenfeld, D. (2007). Usual care as the control group in clinical trials of nonpharmacologic interventions. *Proceedings of the American Thoracic Society*, *4*, 577-582.

Totten, M., Quigley, P., & Morgan, M. (2004). *CPHA 2004 Safe School*Survey for students in grades 4-7. Ottawa, Ontario: Canadian Public Health Association and Department of Justice Canada.

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*, 27-56.

Weiser, J., Simkins-Strong, E., Josephson, W., Moran, M., Moore, L., & Connolly, J. (2011). Using the youth engagement model to RISE above violence: Applying the model and evaluating the program. In D. Pepler, J. Cummings, & W. Craig (Eds.), *PREVNet Series: Vol. 3. Creating a world without bullying* (pp. 161-174). Ottawa, Ontario, Canada: National Printers.

Weisz, A. N., & Black, B. M. (2010). Peer education and leadership in dating violence prevention: Strengths and challenges. *Journal of Aggression, Maltreatment & Trauma*, *19*, 641-660.

Whitaker, D. J., Morrison, S., Lindquist, C., Hawkins, S. R., O'Neil, J. A., Nesius, A. M., & Reese, L. (2006). A critical review of interventions for the primary prevention of perpetration of partner violence. *Aggression and Violent Behavior*, *11*, 151-166. doi:10.1016/j.avb.2005.07.007

Williams, T., Connolly, J., Pepler, D., & Craig, W. (2005). Peer victimization, social support and psychosocial adjustment of sexual minority adolescents. *Journal of Youth and Adolescence*, *34*, 471-482.

Wilson, S. J., Lipsey, M. W., & Derzon, J. H. (2003). The effects of school-based intervention programs on aggressive behavior: A meta-analysis. *Journal of Consulting and Clinical Psychology*, *71*, 136-149.

Wolfe, D. A., Scott, K., Reitzel-Jaffe, D., Wekerle, C., Grasley, C., & Straatman, A. (2001). Development and validation of the Conflict in Adolescent Dating Relationships Inventory. *Psychological Assessment*, *13*, 277-293.

Wolfe, D. A., Wekerle, C., Scott, K., Straatman, A. L., Grasley, C., & Reitzel-Jaffe, D. (2003). Dating violence prevention with at-risk youth: A controlled outcome evaluation. *Journal of Consulting and Clinical Psychology*, *71*, 279-291.

Author Biographies

Jennifer Connolly is a professor of psychology at York University in Toronto, Canada. She is affiliated with the LaMarsh Centre for Child and Youth Research. Her research examines development in adolescence, with a particular interest in promoting positive peer and romantic relationships.

Wendy Josephson is a professor of psychology at the University of Winnipeg in Manitoba. Her research concerns prevention of bullying, sexual harassment, and dating violence in schools and in the workplace.

Jessica Schnoll is a graduate student in the Clinical-Developmental Psychology Program at York University. She studies youth engagement and the use of youth-led programming to enhance public health and prevent violence.

Emily Simkins-Strong is a clinical psychologist practicing in Toronto, Canada. She studies positive youth development and programs to enhance youth engagement.

Debra Pepler is a professor of psychology at York University in Toronto, Canada. She is affiliated with the LaMarsh Centre for Child and Youth Research. Her research examines bullying and victimization in childhood and adolescence, with a particular focus on prevention.

Alison MacPherson is a professor of kinesiology at York University in Toronto, Canada. She is affiliated with the LaMarsh Centre for Child and Youth Research. Her research examines the epidemiology of childhood injury and prevention.

Jessica Weiser conducts research and evaluation directed at translating research into practice to enhance the well-being of children and youth.

Michelle Moran is the director of school programs at East Metro Youth Services in Toronto, Canada. She supervises school-based programs to prevent violence and promote student engagement in high-needs communities.

Depeng Jiang is an assistant professor in the Department of Public Health at the University of Manitoba. He studies the application of statistical methods to applied research questions in the fields of clinical psychology and public health.