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Social-Emotional Learning Program to Reduce Bullying, Fighting, and Victimization Among Middle School Students With Disabilities

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Abstract

Results of a 3-year randomized clinical trial of Second Step: Student Success Through Prevention (SS-SSTP) Middle School Program on reducing bullying, physical aggression, and peer victimization among students with disabilities are presented. Teachers implemented 41 lessons of a sixth- to eighth-grade curriculum that focused on social-emotional learning (SEL) skills, including empathy, bully prevention, communication skills, and emotion regulation. Two school districts in a larger clinical trial provided disability information. All sixth-grade students (N = 123) with a disability were included in these analyses, including intervention (n = 47) and control (n = 76) conditions. Linear growth models indicated a significant intervention effect for bully perpetration; compared with students in the control condition, intervention students' bullying perpetration scale scores significantly decreased across the 3-year study (δ = −.20, 95% confidence interval = [−.38, −.03]). SEL offers promise in reducing bully perpetration among students with disabilities.

Keywords

management, behavior, life skills, curriculum, evidence-based practice

Bullying is regarded as a significant problem in the United States among school-aged youth. Between 15% and 23% of elementary students and 20% and 28% of secondary school students report being bullied within a 6-month to 1-year period (Carlyle & Steinman, 2007; National Center for Education Statistics, 2011; Turner, Finkelhor, Hamby, Shattuck, & Ormrod, 2011). In a recent study of bully victimization among students with disabilities using the Special Education Elementary Longitudinal Study and the National Longitudinal Transition Study–2 data sets revealed a prevalence rate of 24.5% in elementary school, 34.1% in middle school, and 26.6% in high school (Blake, Lund, Zhou, Kwok, & Benz, 2012). Studies have documented that victims often experience depression, social anxiety, and low self-esteem, which could then contribute to academic challenges, with bullies and bully-victims reporting similar academic, interpersonal, and intrapersonal challenges (Cook, Williams, Guerra, Kim, & Sadek, 2010).

Bullying, Aggression, and Victimization Among Students With Disabilities

Students with disabilities are not immune to being involved in bullying incidents, with many studies suggesting that they are actually overrepresented within the bullying dynamic (see Rose, Monda-Amaya, & Espelage, 2011, for review). In a regional study of middle and high school youth (n = 21,646), students with disabilities were twice as likely to be identified as proactive (bully) and reactive (fighting) perpetrators and victims than students without disabilities (Rose, Espelage, & Monda-Amaya, 2009). In a similar study, Rose, Espelage, Aragon, and Elliott (2011) determined that students with high incidence disabilities engaged in significantly higher rates of reactive perpetration and experienced higher levels of victimization than their same-aged peers without disabilities. Although few scholars have examined the differences in bullying involvement among students with disabilities, the preliminary findings suggest that students with disabilities may be at higher risk of involvement than their counterparts without disabilities.

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To examine subgroup differences, Rose and Espelage (2012) explored perpetration rates between students with emotional and behavioral disorders (EBD) and their peers without disabilities and other disability labels (i.e., other health impairment, learning disability [LD], and speech and language impairment). Results indicated that the students with EBD engaged in higher rates of proactive and reactive aggression perpetration than any other subgroup of students. However, when reactive emotion (i.e., anger) was included in the model, bully perpetration increased significantly more for students with EBD than students with other disability labels. These findings are consistent with Swearer, Wang, Maag, Siebecker, and Frerichs's (2012) findings that students with behavior-oriented disabilities (e.g., EBD, attention-deficit/hyperactivity disorder [ADHD]) engaged in higher levels of perpetration and received more behavioral referrals than any other subgroup of student. Therefore, it has been argued that these behaviors may be a manifestation of the students' disability, which may constitute further or more intensive special education programming (Rose & Espelage, 2012).

In separate systematic reviews, Rose, Monda-Amaya, and Espelage (2011) and McLaughlin, Byers, and Vaughn (2010) determined that two of the most common predictive factors for involvement of students with disabilities are low social and communication skills. Therefore, for students with disabilities who are characterized by or have diagnostic criteria associated with low social skills and low communication skills, there is a higher likelihood of involvement in bullying incidents (Rose, Espelage, et al., 2011). For example, autism spectrum disorder (ASD) is characterized by deficits in social and/or communication skills (American Psychiatric Association, 2013), where existing research suggests that students diagnosed with ASD experience high rates of victimization (L. Little, 2002), and experience higher levels of repeated victimization than students with other types of disabilities (Blake et al., 2012). To compound this issue, students with ASD may struggle with emotional dysregulation, where increased levels of anger are associated with increased levels of victimization when compared with individuals without disabilities (Rieffe, Camodeca, Pouw, Lange, & Stockman, 2012). As previously stated, this emotional dysregulation may also hold for individuals with EBD (Rose & Espelage, 2012) or behavioral-oriented disabilities (Swearer et al., 2012) and bully perpetration, where deficits in communication or social skills may manifest in peer-level aggression. Unfortunately, social and communication skills are necessary to successfully navigate the social landscape in today's educational environments, and students with disabilities are often characterized as having lower interpersonal competence (Farmer et al., 2011), and being ostracized more than their peers without disabilities (Symes & Humphrey, 2010; Twyman et al., 2010). For example, a meta-analysis of 152 studies found that 8 of 10 children with a LD were peer-rated as rejected, that 8 of 10 were rated as deficient in social competence and social problem solving, and that students with LD were less often selected as friends by their peers (Baumeister, Storch, & Geffken, 2008). Therefore, programs that support the social and emotional learning (SEL) of individuals with disabilities may increase their social competence and lead to lower levels of involvement within the bullying dynamic (Farmer, Lane, Lee, Hamm, & Lambert, 2012; Rose & Monda-Amaya, 2012).

Efficacy of Bully Prevention Efforts

Despite the number of school-based bully prevention programs in use, bullying prevention programs in the United States are producing modest effects (Ttofi & Farrington, 2011). Thus, there remains a troubling chasm between the scope of the problem, the scale of bullying prevention efforts and scientifically rigorous research in the United States that allows for the elucidation of best bullying prevention practices. Furthermore, even less is known about what are the best bully prevention efforts to reduce bully perpetration and peer victimization among students with disabilities (Rose, Monda-Amaya, & Espelage, 2011). To address this gap, the current study evaluated the impact of the Second Step SEL program (Committee for Children, 2008) on bullying perpetration, physical aggression, and peer victimization utilizing a subsample from a large-scale randomized clinical trial (RCT; Espelage, Low, Polanin, & Brown, 2013).

SEL Programs to Prevent Bullying, Aggression, and Victimization

School-based SEL programs developed to prevent school violence, including bullying, are predicated on the belief that academic skills are intrinsically linked to youth's ability to manage emotions, regulate emotions, and to communicate and problem-solve challenges and interpersonal conflicts (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Within the SEL framework, there are five interrelated skill areas: self-awareness, social awareness, self-management and organization, responsible problem solving, and relationship management. Self-regulated learning is both directly and indirectly targeted in these programs, with the use of social skill instruction to address behavior, discipline, safety, and academics and to help youth become self-aware, manage their emotions, build social skills (empathy, perspective-taking, respect for diversity), build friendship skills, and make positive decisions (Zins, Bloodworth, Weissberg, & Walberg, 2004). School-based violence prevention programs that facilitate SEL skills, address interpersonal conflict, and teach emotion management have shown promise in reducing youth

violence and disruptive behaviors in classrooms (Wilson & Lipsey, 2007). Many of these social-emotional and social-cognitive intervention programs target risk and protective factors that have consistently been associated with aggression, bullying, and victimization in cross-sectional and longitudinal studies (Espelage, Basile, & Hamburger, 2012; Espelage, Holt, & Henkel, 2003). Given that these risk factors are particularly relevant to students with disabilities (Elias, 2004; Rose & Monda-Amaya, 2012), there is reason to believe that SEL programs hold promise for reducing bullying and peer victimization for this population.

Research support for SEL programs is growing. A meta-analysis including 213 SEL-based programs found that if a school implements a quality SEL curriculum, they can expect more socially appropriate student behavior and an 11 percentile increase in academic test scores in comparison with schools without SEL programming (Durlak et al., 2011). Studies demonstrate that students exposed to SEL activities feel safer and more connected to school and academics, build work habits in addition to social skills, and build stronger relationships with peers and teachers (Zins et al., 2004). Several RCTs of bullying prevention programs (based on the SEL framework) have found significant reductions in teacher-reported physical bullying (Brown, Low, Smith, & Haggerty, 2011) and self-reported physical aggression (Espelage et al., 2013); however, no RCT has been conducted with students with disabilities. Thus, this study addresses a major failure of prevention science to attend to the potential impact of SEL programs on aggression and victimization experienced by students with disabilities.

Second Step: Student Success Through Prevention (SS-SSTP) Middle School Program

The SS-SSTP program (Committee for Children, 2008) includes direct instruction in risk and protective factors linked to aggression and violence, including empathy training, emotion regulation, communication skills, and problem-solving strategies. There exists a large research base supporting the inclusion of these risk and protective factors targeted through the social-emotional framework to reduce aggression (for a review, see Espelage, Low, Polanin, & Brown, in press).

Bullying Prevention

The SS-SSTP curriculum includes two lessons focused specifically on bullying, and these lessons are not introduced until youth are exposed to empathy and communication training. This allows youth to learn how to work with each other in dyads and groups to maximize the impact of the lessons that focus on recognizing and responding to bullying and creating class rules. Of note, classroom rules around bullying were a component of programs in the Ttofi and Farrington (2011) meta-analysis that produced significant effect sizes. In the seventh- and eighth-grade curriculum, youth not only review the components of bullying and how to respond but are also encouraged to learn ways by which to intervene to help others as "allies." Again, a recent meta-analysis supports this practice of using a direct approach to address barriers to helping others and then teaching and role-playing strategies of effective bystander intervention (Polanin, Espelage, & Pigott, 2012).

Instructional Practices

Successful prevention curricula include a wide range of instructional practices, from direct instruction, group discussions, reflection opportunities, and role-plays (Evans & Bosworth, 1997; Tobler & Stratton, 1997). Thus, the SS-SSTP lessons are scripted and highly interactive, incorporating small group discussions and activities, class discussions, dyadic exercises, whole class instruction, and individual work. Lessons are supported through an accompanying DVD that contains media-rich content including topic-focused interviews with students and video demonstrations of skills. Indeed, video has been found to be one element of efficacious programs (Ttofi & Farrington, 2011). Drawing on Bandura's (1977) social learning theory, lessons are skills-based and students receive cueing, coaching, and suggestions for improvement on their performance. Lessons are supplemented by homework that reinforces the instruction, extension activities, academic integration lessons, and videos, which are practices that are associated with greater skill acquisition (Bosworth & Sailes, 1993; Dusenbury & Weissberg, 1998). The use of group and collaborative work also leads to increased skill acquisition by allowing students to practice new skills in an environment of positive peer support (Hansen, Nangle, & Kathryn, 1998). Optional "transfer of training" events in which the teacher connects the lessons to events of the day, reinforces students for displaying the skills acquired, identifies natural reinforcement when it occurs, and asks students whether they used specific skills during the day's events.

Current Study

Given the lack of systematic evaluations of SEL programs to address aggression and victimization among students with disabilities, and the overlap with disability status and identified risk factors, this study sought to evaluate the effectiveness of an evidence-based SEL program for reducing bullying, physical aggression, and victimization among this population of students. Based on foundational literature and potential effectiveness of SEL programs, the following hypotheses were tested:

Hypothesis 1: Students with disabilities who receive SEL programming will report lower levels of bullying over time in comparison with their peers in the control condition.

Hypothesis 2: Students with disabilities who receive SEL programming will report lower levels of victimization over time in comparison with their peers in the control condition.

Hypothesis 3: Students with disabilities who receive SEL programming will report lower levels of physical fighting over time in comparison with their peers in the control condition.

Method

Participants

The sample for this study consisted of sixth-grade students (at baseline) with disabilities in two of five school districts that were participating in a large-scale RCT of a middle school SEL curriculum (see Espelage et al., 2013, for more information). The larger project used a nested longitudinal cohort design (only sixth-graders enrolled prior to intervention), randomly assigning schools to condition (i.e., intervention or control). The schools were matched on a number of covariates prior to random assignment (e.g., student enrollment, percentage of eligible free/reduced lunch, percentage of students whose primary language was not English); we used a random number table to assign schools to conditions.

Disability data were available for a total of 123 students across 12 schools in two school districts in the Midwest United States (see Table 1). Any student labeled with a disability was selected for inclusion, regardless of disability type; 47 students were in intervention schools, and 76 were in control schools. Fifty-three percent of the sample were female; 65% were 11 years of age, and 35% were 12 years of age; 31% of sample identified as White, 53% identified as African American, 6% Hispanic, and 10% as biracial. No significant differences were found between students in the intervention versus control conditions on demographic variables (see Table 1).

Thus, we concluded that the two conditions' participants were equivalent prior to the start of the intervention.

Intervention Condition: Second Step Curriculum

The program is composed of 15 lessons at Grade 6 and 13 lessons at Grades 7 and 8. In Grade 6, five lessons focus on empathy and communication (e.g., working in groups, disagreeing respectfully, being assertive), 2 lessons on bullying, 3 lessons on emotion regulation (e.g., coping with stress), 2 lessons on problem solving, and 4 lessons on substance abuse prevention. In Grades 7 and 8, four lessons focus on empathy and communication, 3 lessons on bullying (e.g., cyberbullying, sexual harassment), 2 lessons on emotion regulation, 2 lessons on problem solving or goal setting, and 2 lessons on substance abuse prevention. Lessons are delivered in one 50-min or two 25-min classroom sessions, taught weekly or semi-weekly throughout the school year. Teachers implemented the lessons in this study. Teachers completed a 4-hr training session that covered not only the curriculum and its delivery but also an introduction to child developmental stages as related to targeted skills and a background on bullying research.

Control Condition: Stories of Us Curriculum

Control schools were provided with one copy of the *P3: Stories of Us—Bullying program* (Faull, Swearer, Jimerson, & Espelage, 2008). P3 is composed of two films and educational resources for supporting students, educators, and the broader community in addressing the problem of bullying in schools. We selected this program for the control schools to offer them something as they waited for 3 years to receive the Second Step curriculum. This middle school classroom resource is designed to help students and teachers develop effective strategies to enhance awareness, understanding, and reduce bullying behaviors among students. None of the control schools in the subsample analyzed here adopted the P3R curriculum.

Procedure

Parental consent. A waiver of active (passive) parental consent was approved by the university institutional review board for the 12 schools. Parents of all sixth grade students enrolled in all participating schools were sent letters informing them about the purpose of the study. Several meetings were held to inform parents of the study in each community. In the early fall 2009, investigators attended Parent–Teacher conference meetings and staff meetings, and the study was announced in school newsletters and emails from the principals. Parents were asked to sign the form and return it only if they were unwilling to have their child participate in the investigation. At the beginning of each survey administration, teachers removed students from the room if they were not allowed to participate, and researchers also reminded students that they should not complete the survey if their parents had returned the form. An 86% participation rate was achieved in schools in the analyses reported here. Students were asked to consent to participate in the study through an assent procedure included on the coversheet of the survey.

Survey administration. At each wave of data collection, six trained research assistants, the primary researcher, and a faculty member collected the data. At least two of these

Table 1. Descriptive Statistics (Percentages).

Variable	Intervention	Control	χ^2(*p* value)
n	47	76	
Gender			0.71 (.39)
Male	61.7	53.9	
Female	38.3	46.1	
Age			0.04 (.95)
11	65.2	65.8	
12	34.8	34.2	
Race			7.78 (.10)
African American	53.2	52.6	
Asian	4.3	0	
Biracial	2.1	14.5	
Hispanic	2.1	6.6	
White	38.3	26.3	
Mother's education			3.84 (.57)
Less than high school	14.6	9.5	
High school graduate	31.7	39.2	
Some college	19.5	20.3	
College graduate	17.1	20.3	
Graduate school+	17.1	10.9	
Type of disability			9.43 (.09)
Cognitive disability	15.6	6.6	
Emotional disability	6.2	2.6	
Health impairment	12.5	6.6	
Multiple disabilities	3.1	0	
Specific learning disability	46.9	47.4	
Speech/language impairment	15.6	36.8	
Grades			2.50 (.87)
Mostly As	31.3	21.0	
Most As and Bs	34.4	48.4	
Most Bs	3.1	3.2	
Most Bs and Cs	15.6	14.5	
Mostly Cs	3.1	4.8	
Mostly Cs and Ds	9.4	6.5	
Mostly Ds and Fs	3.1	1.6	

individuals administered surveys to classes ranging in size from 10 to 25 students. The research assistants first informed students about the general nature of the investigation. Students were then given survey packets and the survey was read aloud to them. It took students approximately 40 min to complete the survey: Fall 2010 (T1), Spring 2011 (T2), Spring 2012 (T3), and Spring 2013 (T4). T1 represented the baseline survey prior to implementation of the program.

Measures

The survey included four pertinent sections to this project: demographics, verbal/relational bullying perpetration, peer victimization, and physical aggression. The demographic section collected student information on age, gender, ethnicity, grades, and mother's education. Disability data were obtained from the school districts, where the diagnoses were based on the legally identified disability category in accordance to the Individuals With Disabilities Education Improvement Act (2004) and state regulations, and, therefore, was not assessed on the student surveys.

Bullying perpetration. The nine-item *Illinois Bully Scale* (Espelage & Holt, 2001) assesses the frequency of bullying at school. Students are asked how often in the past 30 days they did the following to other students at school: teased other students, upset other students for the fun of it, excluded others from their group of friends, helped harass other students, and threatened to hit or hurt another student. Response options include "Never," "1 or 2 times," "3 or 4 times," "5 or 6 times," and "7 or more times." The construct validity of this scale has been supported via exploratory and confirmatory

Table 2. Means and Standard Deviations of Outcomes for Intervention and Control Conditions.

	Intervention				Control			
Variable	T1	T2	T3	T4	T1	T2	T3	T4
Bully perpetration	0.45 (0.60)	0.32 (0.54)	0.20 (0.64)	0.36 (0.62)	0.59 (0.70)	0.42 (0.62)	0.63 (0.81)	0.81 (0.96)
Bully victimization	1.08 (1.13)	1.19 (1.27)	0.92 (1.53)	1.02 (1.46)	1.15 (1.26)	1.06 (1.23)	1.14 (1.53)	1.29 (1.64)
Physical aggression	0.69 (0.82)	0.40 (0.69)	0.54 (0.77)	0.54 (0.80)	0.97 (1.05)	0.91 (0.94)	1.06 (1.12)	1.10 (1.20)

Note. Intervention n = 32, Control n = 76; T1–T4 = Time 1–Time 4; Number in parentheses is the standard deviation.

factor analysis (Espelage & Holt, 2001). Factor loadings in the development sample for these items ranged from .52 to .75, and this factor accounted for 31% of the variance in the factor analysis (Espelage & Holt, 2001). Higher scores indicated more self-reported bullying behaviors. The scale correlated moderately with the *Youth Self-Report Aggression Scale* (r = .65; Achenbach, 1991), suggesting that it was somewhat unique from general aggression. Concurrent validity of this scale was established with significant correlations with peer nominations of bullying (Espelage et al., 2003). More specifically, students who reported the highest level of bully perpetration on the scale received significantly more bullying nominations (M = 3.50, SD = 6.50) from their peers than students who did not self-report high levels of bullying perpetration (M = .98; SD = 1.10; Espelage et al., 2003). This scale was not significantly correlated with the *Illinois Victimization Scale* (r = .12), and thus provided evidence of discriminant validity (Espelage et al., 2003). Cronbach's alpha coefficients were .76, .77, .78, and .84 for each of the four waves of data collection in this study.

Peer victimization. The four-item *University of Illinois Victimization Scale* (Espelage & Holt, 2001) assesses victimization from peers. Students are asked how often the following have happened to them in the past 30 days: "Other students called me names"; "Other students made fun of me"; "Other students picked on me"; and "I got hit and pushed by other students." Response options are "Never," "1 or 2 times," "3 or 4 times," "5 or 6 times," and "7 or more times." The construct validity of this scale has been supported and scores have converged with peer nominations of victimization (Espelage & Holt, 2001). Higher scores indicate more self-reported victimization. Cronbach's alpha coefficients were .87, .92, .93, and .91 for each of the four waves of data collection in this study.

Fighting perpetration. The four-item, *University of Illinois Fighting Scale* (UIFS; Espelage & Holt, 2001) assesses physical fighting behavior (e.g., I got in a physical fight; I fought students I could easily beat) the respondent engaged in over the past 30 days. Response options include "Never," "1 or 2 times," "3 or 4 times," "5 or 6 times," and "7 or more times." The Fighting Scale had a low correlation with the Victimization Scale (r = .21) and was only moderately correlated with the Bullying Scale (r = .58), providing evidence of discriminant validity (Espelage & Holt, 2001). Cronbach's alpha coefficients were .81, .75, .74, and .71 for each of the four waves of data collection in this study.

Analysis

Missing data analysis. We used a multiple imputation procedure to avoid biases from missing data. Any student with a survey completed at T1 was eligible for analysis. The imputation procedures were completed using SPSS Version 21 (IBM Corp., 2013), using the fully conditional specification Markov chain Monte Carlo (MCMC) maximum likelihood procedure. Enders (2010) recommended the replication and use of 10 complete data sets. The average, imputed means and standard deviations for each time point were provided in Table 2. In addition, we followed an intent-to-treat design where students were analyzed by their condition assignment instead of treatment actually received (R. J. A. Little & Rubin, 1987). This procedure provides "practical utility" of the intervention (R. J. A. Little & Yau, 1996, p. 1324) while allowing for the use of all individuals included in the intervention, so long as they are measured at T1.

Statistical analysis. We estimated a linear mixed growth model where students' survey scores were nested within the individual students. Due to sample size restrictions, we were unable to fit the original, three-level analytical model and, instead, estimated a two-level model. Following the logic described by Raudenbush and Bryk (2002), we estimate the Level-1 model:

$$Y_{ti} = \pi_{0i} + \pi_{1i} \times \text{Time}_{ti} + e_{ti},$$

where Y_{ti} represented the outcome scale score at time t for person i, π_{0i} represented the intercept of person i, $\pi_{1i} \times \text{Time}_{ti}$ was the relationship of the time variable (coded 0–3) to the outcome, and e_{ti} was the independent and normally distributed error term. Both the intercept and time variables were allowed to vary across individuals as a function of the Level-2 model, namely,

Table 3. Multilevel Modeling Results for Outcomes (N = 123).

	Bully perpetration		Bully victimization		Physical aggression	
Fixed effects	β (*SE*)	95% CI	β (*SE*)	95% CI	β (*SE*)	95% CI
Intercept	−0.42 (0.76)	[−1.92, 1.08]	−0.61 (1.39)	[−3.33, 2.10]	−1.75 (1.10)	[−3.9, 0.41]
Time	0.17 (0.37)	[−0.58, 0.92]	0.72 (0.75)	[−0.79, 2.23]	0.59 (0.52)	[−0.46, 1.64]
Gender	−0.02 (0.12)	[−0.26, 0.22]	−0.03 (0.22)	[−0.45, 0.39]	0.17 (0.18)	[−0.19, 0.53]
White	0.33 (0.13)*	[0.07, 0.59]	0.10 (0.24)	[−0.37, 0.57]	0.79 (.19)*	[0.42, 1.15]
Hispanic	0.22 (0.26)	[−0.29, 0.74]	0.97 (0.46)*	[0.05, 1.88]	0.52 (0.36)	[−0.19, 1.23]
Asian	0.46 (0.66)	[−0.84, 1.76]	0.71 (1.19)	[−1.63, 3.05]	1.36 (0.94)	[−0.50, 3.21]
Biracial	0.05 (0.21)	[−0.37, 0.47]	0.14 (0.38)	[−0.61, 0.88]	0.35 (0.31)	[−0.26, 0.95]
Age	−0.06 (0.13)	[−0.31, 0.19]	−0.09 (0.23)	[−0.54, 0.36]	−0.20 (0.18)	[−0.55, 0.15]
Condition	0.02 (0.13)	[−0.22, 0.27]	0.05 (0.22)	[−0.39, 0.49]	−0.14 (0.18)	[−0.49, 0.21]
Time × Male	0.02 (0.05)	[−0.09, 0.13]	−0.17 (0.11)	[−0.40, 0.06]	−0.03 (0.07)	[−0.17, 0.12]
Time × White	0.02 (0.06)	[−0.11, 0.14]	−0.07 (0.12)	[−0.30, 0.17]	−0.01 (0.07)	[−0.14, 0.13]
Time × Hispanic	−0.02 (0.13)	[−0.26, 0.26]	−0.39 (0.23)	[−0.84, 0.06]	−0.07 (.17)	[−0.40, 0.27]
Time × Asian	−0.09 (0.3)	[−0.69, 0.5]	−0.08 (0.57)	[−1.21, 1.04]	−0.38 (0.39)	[−1.17, 0.41]
Time × Biracial	−0.01 (0.14)	[−0.29, 0.28]	−0.06 (0.25)	[−0.58, 0.46]	−0.09 (0.18)	[−0.47, 0.29]
Time × Age	−0.02 (0.05)	[−0.12, 0.09]	−0.08 (0.10)	[−0.28, 0.11]	0.02 (0.07)	[−0.12, 0.16]
Time × Condition	−0.15 (0.07)*	[−0.28, −0.02]	−0.04 (0.11)	[−0.27, 0.18]	−0.13 (0.07)	[−0.28, 0.02]
Random effects	Variance (*SE*)	95% CI	Variance (*SE*)	95% CI	Variance (*SE*)	95% CI
Time 1	0.27 (0.08)	[0.11, 0.42]	0.62 (0.17)	[0.27, 0.97]	0.47 (0.12)	[0.22, 0.73]
Time 2	0.28 (0.08)	[0.11, 0.44]	0.92 (0.26)	[0.39, 1.45]	0.41 (0.09)	[0.24, 0.58]
Time 3	0.35 (0.14)	[0.06, 0.64]	1.66 (0.49)	[0.62, 2.70]	0.32 (0.10)	[0.12, 0.53]
Time 4	0.40 (0.15)	[0.09, 0.72]	1.81 (0.70)	[0.30, 3.32]	0.45 (0.14)	[0.15, 0.74]
Intercept	0.27 (0.08)	[0.07, 0.36]	0.83 (0.19)	[0.45, 1.20]	0.47 (0.11)	[0.26, 0.70]

Note. Time (0 = Time 1, 1 = Time 2, 2 = Time 3, 3 = Time 4); Gender (0 = Female, 1 = Male); Race, African American is reference group; Age (0 = 12, 1 = 11); Condition (0 = Control, 1 = Intervention). CI = confidence interval.
*p < .05.

$$\pi_{0i} = \beta_{00} + \beta_{01} \times \text{Male} + \beta_{02} \times \text{White} + \beta_{03} \times \text{Hispanic} + \beta_{04} \times \text{Asian} + \beta_{05} \times \text{Biracial} + \beta_{06} \times \text{Age} + \beta_{07} \times \text{Intervention} + r_{0i},$$

$$\pi_{1i} = \beta_{10} + \beta_{11} \times \text{Male} + \beta_{12} \times \text{White} + \beta_{13} \times \text{Hispanic} + \beta_{14} \times \text{Asian} + \beta_{15} \times \text{Biracial} + \beta_{16} \times \text{Age} + \beta_{17} \times \text{Intervention} + r_{1i},$$

where female, African American, and control condition represented the reference groups. Age was grand mean-centered. The error term r_{1i} was allowed to be estimated at each time point, whereas a common variance was assumed for r_{0i}. The β_{17} × Intervention coefficient was our primary interest, testing the difference between the intervention and control group slopes. To test for appropriate model fit, we estimated the deviance statistic across an alternative random effects covariance structures, the identity structure. A likelihood-ratio test was used for the comparison procedure. A measure of the R^2 was also provided (Snijders & Bosker, 2012). We calculated an effect size for the difference in linear growth slopes (i.e., δ) following Raudenbush and Xiao-Feng (2001). All analyses were conducted using SPSS Version 21 (IBM Corp., 2013). The plot was created using the R package ggplot2 (Wickham, 2009).

Results

Bully Perpetration

The results of the linear growth model indicated a significant intervention effect (β_{17} = −.15, SE = .07, p < .05; see Table 3). Compared with students in the control condition, intervention students' bullying perpetration scale scores significantly decreased across the four waves (δ = −.20, 95% confidence interval [CI] = [−.38, −.03]). To visualize this trend, a line plot depicting the conditions is shown in Figure 1. None of the other Time × Student characteristic interactions were significant. One other significant variable was found for this outcome: Compared with African American students, White students were significantly more likely to endorse bullying perpetration (β_{02} = .33, SE = .13, p < .01).

To test model fit, we estimated the model using an alternative random effects covariance structure. The hypothesized model allowed for a variance component to be

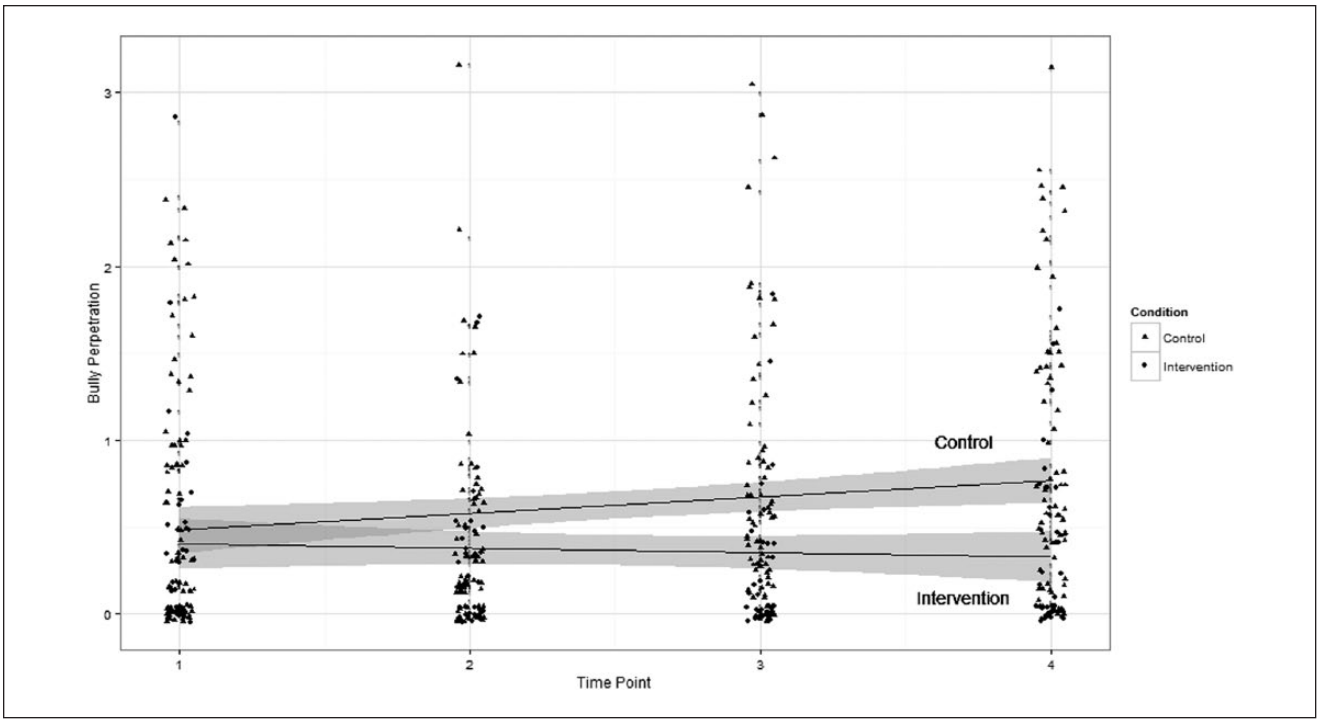

Figure 1. Bully perpetration across time points for intervention and control conditions.
Note. Shaded lines represent the 95% confidence interval.

estimated at each time point. The constrained model, where the variance component was equivalent at each time point, yielded significantly worse model fit ($\chi^2 = 23.43$, $df = 3$, $p < .01$). The final model accounted for 9.5% of the variance at Level 2.

Bully Victimization

The results of the model revealed a non-significant intervention effect ($\beta_{17} = -.04$, SE = .11, $p > .05$; see Table 3). The intervention and control students failed to show significant differences in slopes ($\delta = -.03$, 95% CI = [−.19, .13]). The results revealed only one other significant effect for this model. Hispanic students, relative to African American students, endorsed bullying victimization at a significantly greater rate ($\beta_{03} = 1.04$, $SE = .45$, $p < .05$). None of the other variables were statistically significant.

We again tested model fit by imposing an alternative random effects covariance structure. The results of this test revealed a significantly worse fitting model ($\chi^2 = 33.35$, $df = 3$, $p < .01$). This model explained, not surprisingly, only 1.4% of the variance in the outcome at Level 2.

Physical Aggression

A non-significant intervention effect was found for the physical aggression outcome ($\beta_{17} = -.13$, $SE = .07$, $p > .05$). Students in the intervention condition did not differ from students in the control condition with regard to slope value ($\delta = -.13$, 95% CI = [−.29, .03]). Again, only one other significant variable was yielded from the model. White students were significantly more likely to endorse physical aggression compared with African American students ($\beta_{02} = .79$, $SE = .18$, $p < .01$). The other variables in the model failed to indicate statistical significance. Finally, model fit was tested by imposing an alternative covariance structure. The likelihood-ratio test results yielded a significantly worse fitting model ($\chi^2 = 9.25$, $df = 3$, $p < .05$). The model accounted for 16.1% of the total variance in the outcome at Level 2.

Discussion

Bullying involvement has become a notable concern for American youth. However, research suggests that students with disabilities are overrepresented within the bullying dynamic (Rose, Monda-Amaya, & Espelage, 2011). Evidence suggests that this overrepresentation may be attributed to social and communication skills deficits (McLaughlin et al., 2010), which are foundational skills taught in SEL program. Therefore, in this study, it was hypothesized that direct instruction in the areas of self-awareness, social awareness, self-management, problem solving, and relationship management would serve as a vehicle to reduce bullying, victimization, and fighting over time for students with disabilities.

Although no RCT has been conducted to assess the impact of SEL on bullying involvement for students with disabilities, existing literature in the area of social competence development supports the promise of SEL programs in reducing bullying among this population. For example, in the self-determination literature, students with disabilities who receive direct and systematic instruction in goal setting, self-advocacy, and responsible decision making report higher levels of self-determination than students with disabilities who do not receive direct instruction (Wehmeyer, Palmer, Shogren, Williams-Diehm, & Soukup, 2013). These findings extend to decades of research on self-management and students with disabilities (McDougall, 1998), where it has been established that the ability to effectively manage one's own behavior has been linked to increased academic completion and achievement (Falkenberg & Barbetta, 2013; Joseph et al., 2012), decreased behavioral problems (Briesch & Chafouleas, 2009), and increased social interactions (Koegel, Park, & Koegel, 2014). Therefore, our hypotheses that a SEL program would reduce bullying and aggression were grounded in the social foundation of bullying involvement, and decades of research on social development of students with disabilities.

Bullying

The significant reduction in bullying perpetration among students with disabilities over this 3-year study is a notable finding because much of the existing literature suggests that students with disabilities are overrepresented as perpetrators within the bullying dynamic (McLaughlin et al., 2010; Rose, Espelage, et al., 2011). For example, Estell and colleagues (2009) determined that students with mild disabilities were more likely to be identified as perpetrators by their peers and teachers when compared with students without disabilities and students classified as academically gifted. However, perpetration is often separated by disability identification, where students with behavioral-oriented disabilities tend to engage in higher levels of peer aggression, or bullying, than their classmates without disabilities or other disability diagnoses (Rose & Espelage, 2012).

Although assessing the predictive and protective factors associated with bullying involvement among students with disabilities were beyond the scope of this study, it is conceivable that an interaction between disability identification and placement of services exists. More specifically, and as previously stated, students with behavioral-oriented disabilities (e.g., EBD, ADHD) engage in significantly more perpetration than their peers (Rose & Espelage, 2012). Rose and Espelage (2012) also argued that the proactive aggression may be a function or manifestation of the students' disabilities because higher levels of reactive emotion (i.e., anger) predicted higher levels of proactive aggression (i.e., bullying) for students with EBD. Therefore, the bullying may be an aggressive reaction to social stimuli, where students with behavioral-oriented disabilities must be provided with skills to effectively regulate these emotions (Ho, Carter, & Stephenson, 2010; Kim & Deater-Deckard, 2011).

Unfortunately, the simple manifestation of behaviors may not encompass the entire explanation. More specifically, Rose and colleagues (2009) determined that students with disabilities who receive a majority of their educational services in a self-contained environment are twice as likely to engage in bullying behaviors when compared with their peers without disabilities and 1.3 times as likely to engage in bullying behaviors when compared with their peers in more inclusive environments. Consequently, this is a notable issue for students with behavioral-oriented disabilities, where 39.3% of students with behavioral disorders receive their educational services in restrictive environments (U.S. Department of Education, 2012). Although the function of restrictive environments is to allow for an intensive approach to providing academic and/or behavioral accommodations (Maggin, Wehby, Partin, Robertson, & Oliver, 2009), it is conceivable that a systematized homopholic structure (i.e., homophily hypothesis) is being established, where peer groups are constructed based on similarities, and these peer group structures play an integral role within the bullying dynamic (Hong & Espelage, 2012). For example, Estell and colleagues (2009) determined that student associations were important to the perception of roles, where students who associate with other students who are perceived as bullies, are also perceived as bullies. Given the potential interaction between disability label and placement of educational services, it is important to provide explicit instruction regarding SEL to reduce bullying among students with disabilities.

Victimization

In contrast to our original hypothesis, the intervention group did not report lower levels of victimization when compared with their peers in the control condition. Although this finding was unexpected, the explanation may be grounded in the inclusive practice literature. The majority of special education literature suggests that students with disabilities are overrepresented as victims (McLaughlin et al., 2010; Rose, Monda-Amaya, & Espelage, 2011). The prevalence rates range depending on measurement, identification of disability status, and definition of bullying (Blake et al., 2012); however, many studies report prevalence rates of victimization in excess of 50% for students with disabilities (Rose, Monda-Amaya, & Espelage, 2011). To compound this issue, there is a national push for inclusive practices, where more students are being educated in the general education environment, which may pose a risk for students who are not skilled in avoiding victimization (Rose & Monda-Amaya, 2012). Although inclusive practices are, in part,

designed to increase socialization between students with and without disabilities, if students are not fully integrated into a peer group, inclusive settings may exacerbate the victimization (Martlew & Hodson, 1991). In other words, even if bullying behaviors were reduced among this population of students, the reciprocal relationship between bullies and victims is not exclusive to students with disabilities, where this population may be reporting victimization from individuals without disabilities.

Fighting

Similar to victimization, fighting was also found to be nonsignificant between the intervention and control groups. This finding was unexpected given that significant reductions in fighting behaviors for the treatment group were found for fighting in the larger RCT from which this sample was drawn (Espelage et al., 2013). However, the differential treatment effect for bullying and fighting represents the difference between proactive and reactive aggression. More specifically, SEL programming allowed students with disabilities to be more reflective on proactive types of behaviors, while actively managing their own behaviors. This is consistent with previous research that suggests that with direct instruction, students with disabilities can successfully manage their own behaviors (Briesch & Chafouleas, 2009). However, fighting is typically a reactive behavior, where individuals may not have the immediate cognitive processing to avoid the immediate reaction without direct instruction (Rose, Espelage, Monda-Amaya, Shogren, & Aragon, 2013). More specifically, the reactive aggression, or fighting, may be a result of social information processing deficits, where students with disabilities may act too aggressively to non-threatening or non-aggressive stimuli (Burks, Laird, & Dodge, 1999; Sabornie, 1994), and may have greater difficulty with intrapersonal factors such as impulsivity, assertion, and self-control (Mayer & Leone, 2007). Therefore, the reactive physical aggression may be a manifestation of the individual's disability, which requires specific individualization on the students' Individualized Education Program (IEP; Rose & Espelage, 2012) to develop specific, function-based interventions through the use of a functional analyses (Rose & Monda-Amaya, 2012). For example, high levels of reactive aggression may be maintained by external reinforcers that extend beyond a universal SEL program. More specifically, aggressive behaviors for individuals with disabilities may serve as a positive reinforcer if used to gain access to attention, activities, or tangibles; or as a negative reinforcer if used to escape or avoid attention, activities, or tangibles (May, 2011). In a systematic review of functional analyses, Beavers, Iwata, and Lerman (2013) determined that a majority of the studies that used functional analyses for aggressive behaviors found that aggression is maintained by social consequences. Therefore, to address high levels of aggressive behaviors among individuals with disabilities, function-based interventions, above and beyond the universal SEL programming, should be implemented to address the antecedent events, removal of reinforcement, and/or differential reinforcement (Iwata & Worsdell, 2005).

Limitations and Future Directions

This study is not without limitations. First, the study sample of students with disabilities was relatively small and was drawn from a much larger RCT; however, securing disability data from the school districts was particularly challenging. Thus, the findings generalize to mid-sized urban districts in the Midwest. Second, the district did not provide data indicating the extent to which the students with disabilities received the SEL curriculum in self-contained classrooms or were exposed to the curriculum with other students without disabilities. It would be important in future clinical trials to assess where the students are provided the SEL instruction. Third, only self-report student data were collected given that the larger RCT was conducted with 36 middle schools comprising over 3,600 students. Budget constraints precluded the use of teacher report or the collection of observational data. Future research should develop unobtrusive, efficient, and cost-effective methods of collecting data beyond self-report. Peer nominations are often proposed as an additional form of data to track changes in bullying and aggression, however, the middle schools in this study were very large and peer nominations become a less viable option as the peer networks extend beyond an individual classroom. Finally, because of the small sample size, analyses were not conducted at the school level. It should be noted, however, that this study did demonstrate a reduction in bully perpetration through the use of SEL programming, which is extremely promising, and should prompt future clinical trials to be replicated and extend the findings.

Authors' Note

Opinions expressed herein do not necessarily reflect those of the Centers for Disease Control and Prevention, or related offices within.

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References

Achenbach, T. (1991). *Child Behavior Checklist/4–18*. Burlington: University of Vermont.

American Psychiatric Association. (2013). *Diagnostic and statistics manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Publishing.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*, 191–215.

Baumeister, A. L., Storch, E. A., & Geffken, G. R. (2008). Peer victimization in children with learning disabilities. *Child & Adolescent Social Work Journal*, *25*, 11–23. doi:10.1007/s10560-007-0109-6

Beavers, G. A., Iwata, B. A., & Lerman, D. C. (2013). Thirty years of research on the functional analysis of problem behavior. *Journal of Applied Behavior Analysis*, *46*, 1–21.

Blake, J. J., Lund, E. M., Zhou, Q., Kwok, O., & Benz, M. R. (2012). National prevalence rates of bully victimization among students with disabilities in the United States. *School Psychology Quarterly*, *27*, 210–222.

Bosworth, K., & Sailes, J. (1993). Content and teaching strategies in 10 selected drug abuse prevention curricula. *Journal of School Health*, *63*, 247–253.

Briesch, A. M., & Chafouleas, S. M. (2009). Review and analysis of literature on self-management interventions to promote appropriate classroom behaviors (1988-2008). *School Psychology Quarterly*, *24*, 106–118.

Brown, E. C., Low, S., Smith, B. H., & Haggerty, K. P. (2011). Outcomes from a school-randomized controlled trial of steps to respect: A bullying prevention program. *School Psychology Review*, *40*, 423–443.

Burks, V. S., Laird, R. D., & Dodge, K. A. (1999). Knowledge structures, social information processing, and children's aggressive behavior. *Social Development*, *8*, 220–236.

Carlyle, K. E., & Steinman, K. J. (2007). Demographic differences in the prevalence, co-occurrence, and correlates of adolescent bullying at school. *Journal of School Health*, *77*, 623–629.

Committee for Children. (2008). *Second step: Student success through prevention program*. Seattle, WA: Author.

Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*, *25*, 65–83.

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.

Dusenbury, L., & Weissberg, R. P. (1998). *School-based violence prevention curricula* (Spotlight on Student Success, Issue 314, pp. 1–2). Philadelphia, PA: Temple University Center for Research in Human Development and Education Laboratory for Student Success.

Elias, M. J. (2004). The connection between social-emotional learning and learning disabilities: Implications for intervention. *Learning Disability Quarterly*, *27*, 54–63.

Enders, C. K. (2010). *Applied missing data analysis*. New York, NY: Guilford Press.

Espelage, D. L., Basile, K. C., & Hamburger, M. E. (2012). Bullying experiences and co-occurring sexual violence perpetration among middle school students: Shared and unique risk factors. *Journal of Adolescent Health*, *50*, 60–65. doi:10.1016/j.jadohealth.2011.07.015

Espelage, D. L., & Holt, M. K. (2001). Bullying and victimization during early adolescence: Peer influences and psychosocial correlates. *Journal of Emotional Abuse*, *2*, 123–142.

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

Espelage, D. L., Low, S., Polanin, J. R., & Brown, E. C. (2013). The impact of a middle-school program to reduce aggression, victimization, and sexual violence. *Journal of Adolescent Health*, *53*, 180–186. doi:10.1016/j.jadohealth.2013.02.021

Espelage, D. L., Low, S., Polanin, J. R., & Brown, E. C. (in press). Clinical trial of Second Step© middle-school program: Impact on aggression & victimization. *Journal of Applied Developmental Psychology*.

Estell, D. B., Farmer, T. W., Irvin, M. J., Crowther, A., Akos, P., & Boudah, D. J. (2009). Students with exceptionalities and the peer group context of bullying and victimization in late elementary school. *Journal of Child and Family Studies*, *18*, 136–150. doi:10.1007/s10826-008-9214-1

Evans, A., & Bosworth, K. (1997). *Building effective drug education programs* (Research Bulletin No. 19). Bloomington, IN: Phi Delta Kappa Center for Evaluation, Development, and Research.

Falkenberg, C. A., & Barbetta, P. M. (2013). The effects of a self-monitoring package on homework completion and accuracy of students with disabilities in an inclusive general education classroom. *Journal of Behavioral Education*, *22*, 190–210.

Farmer, T. W., Hall, C. M., Weiss, M. P., Petrin, R. A., Meece, J. L., & Moohr, M. (2011). The school adjustment of rural adolescents with and without disabilities: Variable and person-centered approaches. *Journal of Child and Family Studies*, *20*, 78–88. doi:10.1007/s10826-010-9379-2

Farmer, T. W., Lane, K. L., Lee, D. L., Hamm, J. V., & Lambert, K. (2012). The social functions of antisocial behavior: Considerations for school violence prevention strategies for students with disabilities. *Behavioral Disorders*, *37*, 149–162.

Faull, C., Swearer, S. M., Jimerson, S., & Espelage, D. L. (2008). *Promoting Positive Peer Relationships: Stories of Us* (Classroom, Professional Development, and Community Education Prevention Materials). Madison, WI: Stories of Us.

Hansen, W. B., Nangle, D., & Kathryn, M. (1998). Enhancing the effectiveness of social skills interventions with adolescents. *Education & Treatment of Children*, *21*, 489–513.

Ho, B. P. V., Carter, M., & Stephenson, J. (2010). Anger management using a cognitive-behavioural approach for children with special education needs: A literature review and meta-analysis. *International Journal of Disability, Development and Education*, *57*, 245–265.

Hong, J. S., & Espelage, D. L. (2012). A review of mixed methods research on bullying and peer victimization in school. *Educational Review*, *64*, 115–126. doi:10.1080/00131911.2011.598917

IBM Corp. (2013). IBM SPSS statistics for Windows, Version 21.0 [Computer software]. Armonk, NY: Author.

Individuals With Disabilities Education Improvement Act, H.R. 1350, 108th Congress (2004).

Iwata, B. A., & Worsdell, A. S. (2005). Implications of functional analysis methodology for the design of intervention programs. *Exceptionality*, *13*, 25–34.

Joseph, L. M., Konrad, M., Cates, G., Vajcner, T., Eveleigh, E., & Fishley, K. M. (2012). A meta-analytic review of the cover-copy-compare and variations of this self-management procedure. *Psychology in the Schools*, *49*, 122–136.

Kim, J., & Deater-Deckard, K. (2011). Dynamic changes in anger, externalizing, and internalizing problems: Attention and regulation. *The Journal of Child Psychology and Psychiatry*, *52*, 156–166.

Koegel, L. K., Park, M. N., & Koegel, R. L. (2014). Using self-management to improve the reciprocal social conversation of children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *44*, 1055–1063.

Little, L. (2002). Middle-class mothers' perceptions of peer and sibling victimization among children with Asperger's Syndrome and nonverbal learning disorders. *Issues in Comprehensive Pediatric Nursing*, *25*, 43–57. doi:10.1080/014608602753504847

Little, R. J. A., & Rubin, D. B. (1987). *Statistical analysis with missing data*. New York, NY: John Wiley.

Little, R. J. A., & Yau, L. (1996). Intent-to-treat analysis for longitudinal studies with drop-outs. *Biometrics*, *52*, 1324–1333.

Maggin, D. M., Wehby, J. H., Partin, T. C. M., Robertson, R., & Oliver, R. M. (2009). A comparison of the instructional context for students with behavioral issues enrolled in self-contained and general education classrooms. *Behavioral Disorders*, *36*, 84–99.

Martlew, M., & Hodson, J. (1991). Children with mild learning difficulties in an integrated and in a special school: Comparison of behaviour, teasing, and teachers' attitudes. *British Journal of Educational Psychology*, *61*, 355–372.

May, M. E. (2011). Aggression as positive reinforcement in people with intellectual disabilities. *Research in Developmental Disabilities*, *32*, 2214–2224.

Mayer, M. J., & Leone, P. E. (2007). School violence and disruption revisited: Equity and safety in the school house. *Focus on Exceptional Children*, *40*, 1–28.

McDougall, D. (1998). Research on self-management techniques used by students with disabilities in general education settings. *Remedial and Special Education*, *19*, 312–320.

McLaughlin, C., Byers, R., & Vaughn, R. P. (2010). *Responding to bullying among children with special educational needs and/or disabilities*. London, England: Anti-Bullying Alliance.

National Center for Education Statistics. (2011). *Achievement gaps: How Hispanic and White students in public schools perform in mathematics and reading on the National Assessment of Educational Progress* (Statistical Analysis Report. NCES 2011-459). Retrieved from http://eric.ed.gov/?q=school+climate+on+student+achievement&ft=on&ff1=souNational+Center+for+Education+Statistics&id=ED520960

Polanin, J., Espelage, D. L., & Pigott, T. D. (2012). A meta-analysis of school-based bullying prevention programs' effects on bystander intervention behavior and empathy attitude. *School Psychology Review*, *41*, 47–65.

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

Raudenbush, S. W., & Xiao-Feng, L. (2001). Effects of study duration, frequency of observation, and sample size on power in studies of group differences in polynomial change. *Psychological Methods*, *6*, 387–401.

Rieffe, C., Camodeca, M., Pouw, L. B. C., Lange, A. M. C., & Stockman, L. (2012). Don't anger me! Bullying, victimization, and emotion dysregulation in young adolescents with ASD. *European Journal of Developmental Psychology*, *9*, 351–370.

Rose, C. A., & Espelage, D. L. (2012). Risk and protective factors associated with the bullying involvement of students with emotional and behavioral disorders. *Behavioral Disorders*, *37*, 133–148.

Rose, C. A., Espelage, D. L., Aragon, S. R., & Elliott, J. (2011). Bullying and victimization among students in special education and general education curricula. *Exceptionality Education International*, *21*(2), 2–14.

Rose, C. A., Espelage, D. L., & Monda-Amaya, L. E. (2009). Bullying and victimization rates among students in general and special education: A comparative analysis. *Educational Psychology*, *29*, 761–776.

Rose, C. A., Espelage, D. L., Monda-Amaya, L. E., Shogren, K. A., & Aragon, S. R. (2013). Bullying and middle school students with and without specific learning disabilities: An examination of social-ecological predictors. *Journal of Learning Disabilities*. Advance online publication. doi:10.1177/0022219413496279

Rose, C. A., & Monda-Amaya, L. E. (2012). Bullying and victimization among students with disabilities: Effective strategies for classroom teachers. *Intervention in School and Clinic*, *48*, 99–107. doi:10.1177/1053451211430119

Rose, C. A., Monda-Amaya, L. E., & Espelage, D. L. (2011). Bullying perpetration and victimization in special education: A review of the literature. *Remedial and Special Education*, *32*, 114–130. doi:10.1177/0741932510361247

Sabornie, E. J. (1994). Social-affective characteristics in early adolescents identified as learning disabled and nondisabled. *Learning Disability Quarterly*, *17*, 268–279.

Snijders, T. A., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling* (2nd ed.). London, England: SAGE.

Swearer, S. M., Wang, C., Maag, J. W., Siebecker, A. B., & Frerichs, L. J. (2012). Understanding the bullying dynamic among students in special and general education. *Journal of School Psychology*, *50*, 503–520. doi:10.1016/j.jsp.2012.04.001

Symes, W., & Humphrey, N. (2010). Peer-group indicators of social inclusion among pupils with autistic spectrum disorders (ASD) in mainstream secondary schools: A comparative study. *School Psychology International*, *31*, 479–494.

Tobler, N., & Stratton, H. (1997). Effectiveness of school-based drug prevention programs: A meta-analysis of the research. *Journal of Primary Prevention*, *18*, 71–128.

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.

Turner, H. A., Finkelhor, D., Hamby, S. L., Shattuck, A., & Ormrod, R. K. (2011). Specifying type and location of peer

victimization in a national sample of children and youth. *Journal of Youth and Adolescence*, *40*, 1052–1067.

Twyman, K. A., Saylor, C. F., Saia, D., Macias, M. M., Taylor, L. A., & Spratt, E. (2010). Bullying and ostracism experiences in children with special health care needs. *Journal of Developmental & Behavioral Pediatrics*, *31*, 1–8.

U.S. Department of Education. (2012). *Individuals With Disabilities Education Act (IDEA) database*. Washington, DC: Office of Special Education Programs. Retrieved from http://www.gpo.gov/fdsys/pkg/PLAW-108publ446/html/PLAW-108publ446.htm

Wehmeyer, M. L., Palmer, S. B., Shogren, K., Williams-Diehm, K., & Soukup, J. (2013). Establishing a causal relationship between intervention to promote self-determination and enhanced student self-determination. *The Journal of Special Education*, *46*, 195–210.

Wickham, H. (2009). *ggplot2: Elegant graphics for data analysis*. New York, NY: Springer.

Wilson, S. J., & Lipsey, M. W. (2007). School-based interventions for aggressive and disruptive behavior: Update of a meta-analysis. *American Journal of Preventive Medicine*, *33*, S130–S143.

Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2004). The scientific base linking emotional learning to student success and academic outcomes. In J. E. Zins, R. P. Weissberg, M. C. Wang, & H. J. Walberg (Eds.), *Building academic success on social and emotional learning: What does the research say?* (pp. 3–22). New York, NY: Teachers College Press.