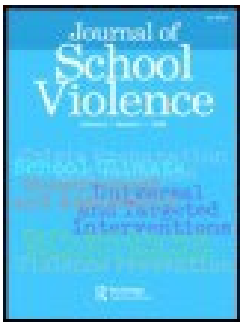

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Engaging Professional Sports to Reduce Bullying: An Evaluation of the Boston vs. Bullies Program

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ABSTRACT

We evaluated the effectiveness of Boston vs. Bullies, a short-term, free, bullying prevention program that uses celebrity athletes to present content. Fifth-grade students in 10 schools were randomized to either complete the Boston vs. Bullies intervention (n = 388), or to a wait-list control group (n = 266). Pre- and post-surveys assessed knowledge, attitudes, and behaviors related to bullying. Students completing Boston vs. Bullies reported greater improvement in knowledge of bullying, assertiveness, perceptions of adult responsiveness, and bystander responsibility. They also reported decreased acceptance of aggression and peer victimization. However, when statistical models introduced robust standard errors to account for school clustering, some associations attenuated, suggesting that program effectiveness is somewhat variable across schools. Further, among youth in the intervention group, greater improvement was associated with student-reported engagement and facilitator-reported adherence to program components. Results suggest that Boston vs. Bullies can contribute to improving bullying, but some program outcomes may be influenced by school context.

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Bullying; prevention program; sports; schools

Research consistently documents the association between bullying involvement and poor mental health, physical health, and academic outcomes (Copeland, Wolke, Angold, & Costello, 2013; Copeland et al., 2014; Holt, Bowman, & Koenig, 2016; Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Sourander et al., 2007; Swearer, Espelage, Vaillancourt, & Hymel, 2010). Furthermore, there is evidence that bullying not only impacts the approximately one-third of youth who are involved as targets and aggressors but also negatively affects students who observe bullying occurring in their school context (Rivers, Poteat, Noret, & Ashurst, 2009). In response to considerable concern about bullying and its impact on student academic, social, and emotional development, all 50 US states have passed school anti-bullying legislation (www.stopbullying.gov) and, in many states, schools are required to implement evidence-based bullying prevention programs (as of 2018, 42 states required such prevention programs; US Department of Health and Human Services, 2018).

Studies have shown that the effects of bullying prevention programs are generally, although modestly, positive, and that the programs that are most effective are those that are comprehensive in their scope (i.e., integrating parents, training for teachers, broader social-emotional learning goals; Bradshaw, 2015; Ttofi & Farrington, 2011). However, an ongoing challenge to bullying prevention efforts is that many schools have difficulty committing to the implementation of comprehensive bullying prevention programs. First, programs that have been shown to be effective (e.g., Second

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Supplemental data for this paper can be accessed on the publisher's website.

Step, the Olweus Bullying Prevention Program, KiVa) involve a substantial amount of staff time and buy-in. The comprehensive nature of these programs is what increases their effectiveness (e.g., Ttofi & Farrington, 2011, found that program intensity was associated with greater success), yet school staff are sometimes hesitant to engage in comprehensive programming because of competing requirements for their time. Second, the cost of implementing many bullying prevention programs can be prohibitive. For example, in 2019, the bullying prevention unit of Second Step alone (five lessons) costs $1,129 for one set at each K-5 grade level (and many schools purchase more than one set per grade level). A third concern resides in questions about the extent to which programs are engaging to students. In particular, universal prevention programs (i.e., those administered to all students, not just those identified as being involved in bullying) need to engage a wide range of students. Unfortunately, many students perceive that bullying prevention programs are not engaging and report that their peers are inattentive and sometimes even defiant during prevention program- ming (Cunningham, Cunningham, Ratcliffe, & Vaillancourt, 2010; Cunningham et al., 2016). In response to the high cost and implementation time of many bullying prevention programs, schools might seek less-costly and less time-intensive prevention activities that are maximally engaging for students. These considerations are particularly relevant for low-resourced schools that might be the most pressed to provide low-cost prevention programming for youth. In response to the challenges noted above, shorter-term, low-cost prevention programs have been developed, though these are rarely systematically evaluated. In this study, we evaluate one short-term program – Boston vs. Bullies – which was designed to be highly-engaging, improve attitudes about bullying, and reduce bullying behaviors among youth.

Boston vs. Bullies program

The Boston vs. Bullies program is a research-based program developed in 2011–2013 by The Sports Museum, a nonprofit educational institution located in Boston, Massachusetts. The program is designed to increase knowledge of bullying, improve attitudes about bullying and bystander inter- vention, and decrease bullying behaviors using several methods including an educational video, lesson plans with interactive activities, and classroom materials (e.g., posters, wrist-bands). The program is designed to address many of the concerns of existing bullying prevention programs. First, Boston vs. Bullies is offered to schools at no cost. All materials are freely available for download from The Sports Museum's website and The Sports Museum provides free training and printed materials to school staff on request. Second, Boston vs. Bullies has a flexible implementation approach, whereby teachers can select the number of sessions (and choose the components) that they would like to implement. This approach maximizes teacher autonomy in the selection of bullying preven- tion activities. Third, Boston vs. Bullies is specifically designed to be highly appealing to youth who often do not relate to social-emotional learning curricula. Specifically, as described in more detail below, the program draws on celebrity athletes to present bullying prevention content. As of May 2019, Boston vs. Bullies has been administered to more than 90,000 children and adolescents in the Northeast, a high percent of whom are students of color and reside in low-income communities.

The theoretical framework underlying Boston vs. Bullies is presented in Figure 1. Boston vs. Bullies is designed to be an individual-level intervention and can be presented to youth in school and community settings. Program components include defining bullying, providing students who bully with positive strategies to solve problems, providing students who are being bullied with options for responding calmly and confidently, providing bystanders with strategies to stop bullying, and providing students with strategies for preventing and stopping cyberbullying. Knowledge about bullying helps students recognize bullying when it happens so they can respond, and positive strategies provide students with effective options for responding. The program can be administered as a universal prevention program to all 4th through 6th graders in a school. This is an ideal time for bullying prevention because national studies report that bullying peaks in middle school, increasing from 6th

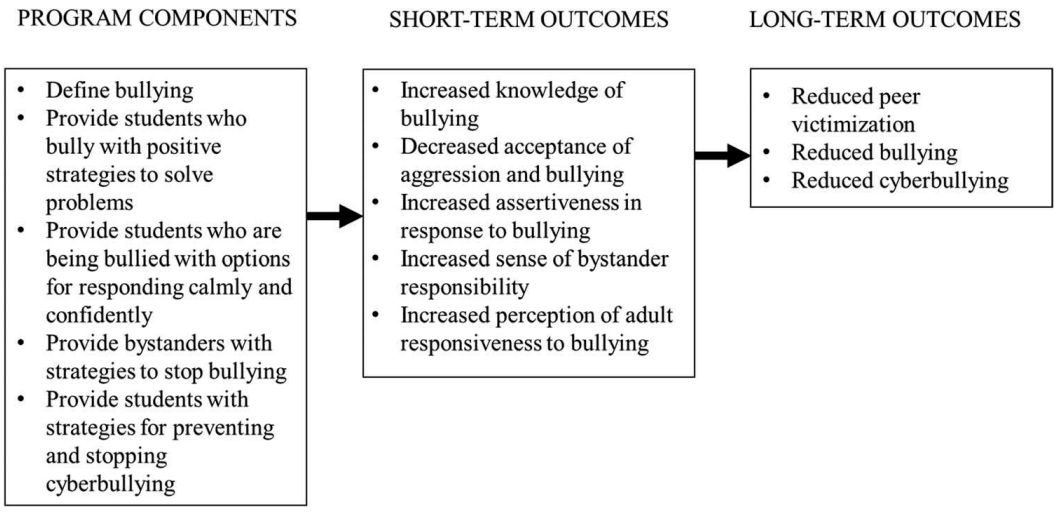

Figure 1. Boston vs. Bullies theoretical model.

through 9th grade (National Center for Educational Statistics, 2017). Although some of the program components specifically address subgroups of bullying-involved youth (e.g., those who are being bullied, bystanders), many students have different roles in bullying at various points in time and the strategies presented are anticipated to be beneficial to all students over time. From participating in these program components, several short-term outcomes are anticipated: Increased knowledge of bullying, decreased acceptance of aggression and bullying, increased assertiveness in response to bullying, increased sense of bystander responsibility, and increased perception of adult responsiveness to bullying. These short-term outcomes are anticipated to have long-term effects on reducing peer victimization, reducing bullying, and reducing cyberbullying.

Prior evaluations

In 2013, The Sports Museum commissioned a pre-post evaluation of Boston vs. Bullies, which included 214 students participating in the program at 2 schools and 15 community centers. The study found that students improved in their knowledge and attitudes about bullying from pre- to post-survey (Storey, Slaby, & Lee, 2014). In 2016, the current research team conducted an evaluation of Boston vs. Bullies among 5th graders in one middle school. Nine classrooms of students (N = 205) were randomized to either participate in Boston vs. Bullies or to be part of a wait-list control group. Students in classrooms participating in Boston vs. Bullies reported greater improvements in their knowledge of bullying, as compared to students in control group classrooms. From pre- to post-survey, students in both the intervention and control groups reported improved attitudes about bullying and reductions in bullying behaviors, victimization, and fighting.

Current study

The current study, conducted in 2017 and 2018, extends these previous evaluations by testing the effects of Boston vs. Bullies in a larger sample of 5th graders with multiple schools randomized to either intervention or wait-list control conditions. As compared to the control group, we hypothe- sized that 5th grade students in schools participating in Boston vs. Bullies would demonstrate improvements in knowledge and attitudes related to bullying, as well as decreases in bullying

behaviors. Specifically, we evaluated whether students in the intervention group, relative to the control schools, improved in:

(1) Knowledge of bullying;
(2) Attitudes about bullying and ability for bystanders to stop bullying;
(3) Bullying victimization and perpetration behaviors.

In addition, among schools participating in Boston vs. Bullies, we evaluated the extent to which facilitators adhered to the program and the extent to which students reported a high degree of engagement with the intervention. We hypothesized that among students participating in the intervention, higher adherence of program implementation and a higher degree of student engage- ment would be associated with greater improvements in knowledge, attitudes, and bullying behaviors.

Method

Procedures

Ten schools in Massachusetts that expressed interest in implementing the Boston vs. Bullies program during the 2017–18 school year agreed to participate in the current evaluation study. Participating schools agreed that all of their 5th grade classrooms would participate in the evaluation, with the exception of one school that asked to exclude a sheltered English immersion classroom. Schools were randomized either to participate in the Boston vs. Bullies program in fall of 2017 or to wait to implement the program until spring of 2018. In an effort to balance sample sizes, six schools (19 classrooms; approximately 539 students) were randomized to the intervention condition and four schools (15 classrooms; approximately 393 students) were randomized to the wait-list control condition. Although Boston vs. Bullies is designed to facilitate individual-level change in student engagement with bullying, randomization occurred at the school-level. As Boston vs. Bullies is a universal prevention program, it was impractical to randomize students at the individual level. For logistical reasons, schools expressed a preference for training all of their grade-level teachers and implementing the program to all students at the same time of year.

Parents of all 5th grade students (approximately 932 students) in both control and intervention schools were sent letters informing them about the evaluation study. The letter described the study and informed parents that their children would be included in the evaluation study unless parents contacted the school and requested that their children be excluded. All 5th grade students partici- pated in the Boston vs. Bullies program at intervention schools, regardless of participation in the evaluation study.

Schools randomized to the Boston vs. Bullies group selected facilitators (typically teachers or school counselors) to deliver the program. These facilitators all completed a 45–60-minute training with staff from The Sports Museum and were provided with online versions of all materials, as well as offered copies in print. Fifth-grade students in the intervention schools participated in the Boston vs. Bullies program for 40–60 minute per week for four consecutive weeks. Students in the wait-list control schools did not participate in the Boston vs. Bullies program during the study; however, after post-survey completion, schools randomized to the wait-list control condition were offered resources and training to implement the program.

Students in both intervention and control schools completed a pre-survey; in intervention schools, this pre-survey took place prior to the initiation of the Boston vs. Bullies program. At the beginning of survey administration, teachers read a description of the study to students, informed them that their participation was voluntary, and let them know that they could skip any questions that they preferred not to answer. Students in both intervention and wait-list control schools

completed a pre-survey and then a post-survey approximately 4–6 weeks later; in intervention schools, the post-survey was completed within 2 weeks after completion of the Boston vs. Bullies program.

All surveys were completed using paper-and-pencil scantron forms. Pre- and post-surveys were identical, with the exception of questions about student engagement with the program, which were added to the post-survey for students completing Boston vs. Bullies. Students completed the surveys anonymously, however, they were asked to answer five questions at the start of each survey that would provide personal information allowing us to match pre- and post-surveys, without identifying the student. These questions were: (1) What is the first letter of your last name? (2) What is the day of the month that you were born? (for example, if you were born March 14, please write 14) (3) How many brothers do you have? (4) How many sisters do you have? (5) What is the first letter of the name of the street that you live on most of the time? We used the answers to these five questions in conjunction with demographic information (gender and race/ethnicity) to match individual stu- dents' pre- and post-surveys. Surveys were paired if a pre-survey and post-survey response from a classroom contained matching responses to at least three of the above questions and matching responses for gender.

Participants

A total of 781 pre-surveys and 768 post-surveys were completed (representing 83.8% and 82.4% of possible participants, respectively). We were able to match a total of 654 pre- and post-surveys using the criteria described above, meaning that we were able to match 83.7% of all completed pre-surveys with a post-survey. This analytic sample of 654 students with pre-survey and post-survey data reflected 70.2% of 5th graders in participating schools. In control schools, 67.7% of 5th grade students were included in the analytic sample. In intervention schools, 72.0% of 5th grade students were included in the analytic sample. Of note, one of the control schools had a much lower rate of participation in the analytic sample (20%) than all other schools in the sample (56.7% to 91.9%), due to surveys that were misplaced in the school. All students without matched surveys were excluded from all analyses, and therefore the analytic sample included only students with both pre- and post- survey data.

In the analytic sample, of the students who identified their gender, half (51.5%; n = 331) identified as female. A significant number of students did not respond to the question about race (23.9% missing data). Of the students who indicated their race (n = 498), 38.0% identified as White, 27.9% identified as African American, 18.9% identified as Multi-race and Non-Hispanic, 7.6% identified as Asian, 7.0% identified as Native American, and 0.6% identified as Native Hawaiian/Pacific Islander. There were no significant differences between the intervention group and the control group in rates of missing data on this question. There were also no significant differences between those who were and were not missing race data on any of the pre-survey or post-survey variables described below. A majority of students (93.4%; n = 611) responded to the question about their ethnicity and 33.1% identified as Hispanic or Latino. There were no significant gender differences between students in the intervention and control groups, but students in the intervention group were significantly more likely than those in the control group to identify as African American (31.6% vs. 23.0%; $\chi^2 = 4.5$, $p =$ .035) or Hispanic/Latino (38.6% vs. 25.5%; $\chi^2 = 11.7$, $p = .001$; Table 1). Seven facilitators implemented the Boston vs. Bullies program and participated in the study (with three of them implementing the program in multiple classrooms). Among those facilitators, the median number of years working in schools was 10 years (range: 4–41 years). Four facilitators were implementing the program for the first time and three had implemented the program previously. No students had previously received the program.

Table 1. Pre-survey demographic information and baseline data on outcome variables.

	Intervention (n = 388) n (%)	Wait-List Control (n = 266) n (%)	Total (N = 654) n (%)
Gender			
Male	182 (47.9%)	128 (48.1%)	310 (48.0%)
Female	196 (51.6%)	135 (50.8%)	331 (51.2%)
Other	2 (0.5%)	3 (1.1%)	5 (0.8%)
Race			
African American	90 (31.6%)	49 (23.0%)*	139 (27.9%)
White	105 (36.8%)	84 (39.4%)	189 (38.0%)
Other/Multi-Racial	90 (31.6%)	80 (37.6%)	170 (34.1%)
Ethnicity			
Hispanic/Latino	136 (38.6%)	66 (25.5%)**	202 (33.1%)

* $p < .05$, **$p < .01$

Boston vs. Bullies curriculum

Boston vs. Bullies is comprised of interactive lessons on bullying prevention. The Sports Museum provided facilitators with training and materials to implement the program for the intervention groups, including four detailed lesson plans, class activities, questions to facilitate discussions, and video clips. As part of each of the four lesson plans, facilitators showed a video clip and used the Boston vs. Bullies Facilitator's Guide for activities, exercises, and discussion questions. The video clips feature professional athletes sharing stories and providing students with strategies for respond- ing to bullying. Athletes include players from the major Boston sports teams (e.g., Boston Red Sox, Boston Celtics, New England Patriots, Boston Bruins, New England Revolution) as well as local Olympic athletes (e.g., Aly Raisman). All materials are available at www.bostonvsbullies.org.

As an example, Lesson 1 is designed to help students understand what constitutes bullying. In this lesson, facilitators use a number of pre-viewing questions (e.g., Have you seen bullying happen?) and then show a related video clip from the Boston vs. Bullies educational video. In this clip, celebrity athletes define bullying, using the definition developed by the Centers for Disease Control (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014) and commonly used by researchers (Green, Felix, Sharkey, Furlong, & Kras, 2013). Next, using a chart, facilitators lead a guided conversation about examples of bullying and non-bullying behaviors. To reinforce the definition of bullying, facilitators then present a series of scenarios and ask students to stand on lines indicating whether they think each scenario indicates "bullying," "not bullying," or if they are "not sure." Facilitators use this exercise to explain that it is not always easy to tell if situations are bullying and to introduce ideas about how to respond to conflicts before they escalate.

As another example, Lesson 2 is designed to help students identify options for how to respond if they are being bullied. Facilitators use pre-viewing questions (e.g., why do you think kids get bullied?) and then show a related video clip about what happens when students are bullied. They use this video to lead a discussion about what it feels like to be bullied and how students can respond to bullying. Facilitators then define and discuss the concept of "assertive- ness." Finally, facilitators work with students to develop a "3-step game plan" where students identify how they can stand strong against bullying: (a) what will they say or do, (b) who will help them, and (c) where can they go. The other two lesson plans are similarly structured to include sections of the Boston vs. Bullies educational video, interactive activities, and specific skill-building. Although Boston vs. Bullies is designed to be flexible in the number of lessons implemented, we required facilitators to implement the lessons in four sessions in a four-week period for purposes of the current study.

Measures

Bullying knowledge

Students completed an assessment of their knowledge of bullying that was developed for an earlier evaluation of Boston vs. Bullies. This assessment asked students to answer five (true/false/don't know) questions about the defining characteristics of bullying (e.g., *Bullying happens over and over again, Bullying is an argument* [reverse scored]). From these questions, we calculated a total knowl- edge score for each student, represented by the number of correct answers (0–5). Responses of "don't know" were coded as incorrect.

Bullying attitude measures

To assess attitudes about bullying, students completed the Student Experiences Survey – Attitude Scales, which have been used in the evaluation of other school-based bullying prevention programs, including Steps to Respect (Frey et al., 2004). This 21-item survey is comprised of four scales assessing: perceived assertiveness, perceived adult responsiveness, bystander responsibility, and acceptance of bullying/aggression (Frey et al., 2004).

Perceived Assertiveness was measured by five questions that ask students how hard it would be to stop bullying (e.g., *Kids are pushing you around. How hard would it be to calmly tell them to stop?*). We added a sixth item to this scale, asking how hard it would be to tell someone to stop if they were "sending mean messages about you online." Respondents answered on a 4-point Likert-type scale: not hard at all, a little bit hard, pretty hard, or really hard. For the six items, Cronbach's $\alpha = .739$ on the pre-survey, $\alpha = .787$ on the post-survey.

Perceived Adult Responsiveness was measured by four questions that ask students about how adults respond to school safety and bullying (e.g., *Adults at my school stop kids from being bullied)*. Respondents answered on a 4-point Likert-type scale: very true, pretty true, a little true, not true. Cronbach's $\alpha = .519$ for the pre-survey and .634 for the post-survey. While low, these alpha coefficients are equivalent to those from other studies using this subscale (Frey et al., 2005).

Bystander Responsibility was measured by five questions asking the extent to which students feel responsible for intervening when they perceive that other students may be involved in bullying (e.g., *If I saw someone being ganged up on at school, I would tell an adult*). Respondents answered on a 4-point Likert-type scale: very true, pretty true, a little true, not true. Cronbach's $\alpha = .773$ on the pre-survey and $\alpha = .802$ on the post-survey.

Acceptance of Bullying/Aggression was measured by seven questions that assess whether the student finds bullying behaviors to be acceptable (e.g., *It's okay to say something mean to a kid who really makes you angry*). Respondents answered on a 4-point Likert-type scale: agree a lot, agree some, agree a little, don't agree. Higher scores indicated that students rejected aggressive and bullying behaviors. Cronbach's $\alpha = .877$ on the pre-survey and $\alpha = .899$ on the post-survey.

Bullying and victimization behavior

Students completed the 18-item Illinois Bully Scale, a reliable and valid measure of bullying (Espelage & Holt, 2001; Poteat & Espelage, 2005). This scale measures bullying behaviors including teasing, group exclusion, rumor spreading, and name-calling. The Illinois Bully Scale does not use the word "bullying" or provide a definition of bullying (Espelage & Holt, 2001). Rather, it asks how often specific bullying behaviors have occurred over the past 30 days (*never, 1 or 2 times, 3 or 4 times, 5 or 6 times, 7 or more times*). The measure assesses bullying victimization (four items; e.g., *I got hit and pushed by other students)*, bullying perpetration (nine items; e.g., *I teased other students*), and physical fighting (four items; e.g., *I got into a physical fight*). Using this measure, we calculated a mean score on each subscale, which is consistent with how other researchers (e.g., Espelage, Low, Van Ryzin, & Polanin, 2015) have used the measure in evaluations of bullying prevention programs. On the pre-survey, Cronbach's $\alpha = .849$ for victimization, $\alpha = .854$ for perpetration, and $\alpha = .800$ for fighting. On the post-survey, $\alpha = .887$ for victimization, $\alpha = .889$

for perpetration, and α = .829 for fighting. Finally, to assess cyberbullying, students completed two questions about harassing others from the Youth Internet Safety Surveys (Jones, Mitchell, & Finkelhor, 2013) and two parallel questions about being harassed by others over the internet. We took the sum of each set of two items to assess cyberperpetration and cybervictimization, respectively.

Student program reactions

Students who completed Boston vs. Bullies were asked to rate nine statements about their experiences with the program (e.g., *Boston vs. Bullies was helpful, Boston vs. Bullies made me think*) on a 4-point Likert-type scale: strongly disagree, disagree, agree, strongly agree. Finally, students indicated whether they liked the program (not at all, a little, a lot), whether they learned anything new (not at all, a little, a lot), and whether they would recommend Boston vs. Bullies to other kids (yes, no).

Facilitator ratings of student engagement and program adherence

Following each lesson, facilitators were asked to rate student engagement on a 4-point Likert-type scale: not at all engaged, a little engaged, somewhat engaged, very engaged. Further, after completing each of the four Boston vs. Bullies lessons, facilitators reported which lesson components they completed. Specifically, facilitators indicated if they did or did not implement the following components: pre-viewing questions, video clips, post-viewing questions, discussion, and each of the lesson's activities. We summed these items to create an indicator of intervention adherence. Prior evaluations of bullying prevention programs have used this method as a brief and feasible assessment of adherence (Espelage, Low, Polanin, & Brown, 2015).

Analysis

First, we assessed baseline equivalency by comparing the intervention and control groups on each knowledge, attitude, and behavior measures at pre-survey. Aggregating to the school level, there were no significant differences in the means of each of the outcome variables at baseline, indicating that the randomization of schools to conditions was successful. At the student level, results demonstrated significant differences between students at intervention and control schools only on fighting at baseline ($M = 0.32$, $SD = 0.53$ for Boston vs. Bullies students, $M = 0.42$, $SD = 0.69$ for control group; $t = 2.01$, $p = .045$, Table 2).

Second, we estimated a series of linear regression models to test the association of each of the knowledge, attitude, and behavior outcome variables with group membership (intervention vs. control) in unadjusted models. We then estimated adjusted models by adding gender and baseline scores of the outcome variable under consideration (Model 1). Given that the program design targeted individual-level change in student engagement with bullying and that there were a small number of clusters (schools) in the current study (N = 10), we did not estimate multi-level models because the models would be underpowered (Hooper, Forbes, Hemming, Takeda, & Beresford, 2018). In addition, the Intra Class Correlations (ICC) among the dependent variables indicated that the amount of variability attributable to school clusters was relatively small (ranging from 0% to 9.5%, with an ICC greater than 5% for only 3 of the 10 dependent variables). However, to adjust for school level dependencies, we estimated a second set of models (Model 2) using a Huber-White Sandwich Estimator that estimates robust standard errors that account for clustering within schools. We also used the Robust Maximum Likelihood estimator to adjust for potential non-normality in the data. All models were estimated using Mplus 8.4.

Finally, among the subset of students participating in Boston vs. Bullies, we tested whether student ratings of program engagement and facilitator ratings of engagement and adherence (aggregated across the four sessions) were associated with each of the knowledge, attitude, and behavior outcome variables. We entered these variables simultaneously into a linear regression model to test their association with each outcome variable.

Table 2. Descriptive information for study outcome variables.

	Intervention (n = 388)		Wait-List Control (n = 266)		Standardized Mean Difference
Measure (scale score range)	*M*	*SD*	*M*	*SD*	
Bullying Knowledge Score (0–5)					
Pre-survey	2.58	1.25	2.75	1.24	−0.14
Post-survey	3.27	1.10	3.07	1.23	0.17
Assertiveness (0–4)					
Pre-survey	3.17	0.55	3.14	0.54	0.06
Post-survey	3.28	0.56	3.18	0.55	0.18
Adult Responsiveness (0–4)					
Pre-survey	3.35	0.52	3.29	0.52	0.11
Post-survey	3.40	0.55	3.26	0.56	0.25
Bystander Responsibility (0–4)					
Pre-survey	3.59	0.50	3.54	0.51	0.10
Post-survey	3.61	0.48	3.53	0.52	0.16
Acceptance of Bullying (0–4)					
Pre-survey	3.03	0.83	2.97	0.91	0.07
Post-survey	3.05	0.88	2.91	0.94	0.15
Peer Victimization (0–4)					
Pre-survey	0.93	1.01	0.99	1.01	−.06
Post-survey	0.85	1.00	1.03	1.11	−0.17
Bullying Perpetration (0–4)					
Pre-survey	0.30	0.46	0.32	0.52	−.04
Post-survey	0.28	0.53	0.33	0.55	−.09
Fighting (0–4)					
Pre-survey	0.32	0.53	0.42	0.69	−0.17
Post-survey	0.33	0.62	0.42	0.73	−0.13
Cybervictimization (0–2)					
Pre-survey	0.18	0.47	0.18	0.44	0.00
Post-survey	0.18	0.50	0.23	0.53	−0.10
Cyberperpetration (0–2)					
Pre-survey	0.11	0.40	0.08	0.33	0.08
Post-survey	0.11	0.39	0.09	0.34	0.05

Results

Knowledge

Model 1 results indicated a significant association between group membership (intervention vs. control) and student knowledge of bullying at post-survey (β = .295, $p < .001$; Table 3), adjusting for individual pre-survey knowledge scores and gender. The intervention group demonstrated greater increases in their average knowledge scores from pre- to post-survey (M = 2.58 at pre-survey, M = 3.27 at post-survey) than the control group (M = 2.75 at pre-survey, M = 3.07 at post-survey). The difference between the intervention and control group on bullying knowledge remained significant in Model 2, which accounted for school-level clustering (β = .295, p = .053).

Attitudes

Separate regression models estimated the association of group membership with perceptions of assertiveness, adult responsiveness, bystander responsibility, and acceptance of bullying and aggression, adjusting for pre-survey responses and gender. In Model 1, there was a significant group difference in post-survey ratings of assertiveness (β = .197, p = .007). Specifically, the intervention group showed greater increases in assertiveness (M = 3.17 at pre-survey, M = 3.28 at post-survey) than the control group (M = 3.14 at pre-survey, M = 3.18 at post-survey). Second, there was a significant group difference in post-survey ratings of perceptions of adult responsiveness (β = .232, $p < .001$), such that the intervention group showed increases in perceptions of adult responsiveness (M = 3.35 at pre-survey, M = 3.40 at post-survey), while

Table 3. Associations of post-survey knowledge and attitudes scores with group membership, in analyses that do and do not account for school clustering.

	Knowledge (n = 602)			Assertiveness (n = 527)			Adult Response (n = 556)			Bystander (n = 540)			Accept Aggression (n = 615)		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Model 1: No Adjustment for School															
Gender	−.001	.085	−.001	−.061	.040	−.111	.019	.040	.035	.026	.034	.055	.090	.054	.100†
Individual pre-survey	.377	.035	.402***	.536	.037	.534***	.572	.038	.529***	.556	.036	.552***	.691	.031	.666***
Group (Control = Ref)	.334	.086	.295***	.107	.040	.197**	.129	.040	.232**	.071	.034	.149*	.122	.054	.136*
R^2		.175			.306			.298			.318			.470	
Model 2: Adjustment for School															
Gender	−.001	.085	−.001	−.061	.043	−.111	.019	.025	.035	.026	.026	.055	.090	.037	.100**
Individual pre-survey	.377	.047	.402***	.536	.029	.534***	.572	.058	.529***	.556	.044	.552***	.691	.038	.666***
Group (Control = Ref)	.334	.178	.295*	.107	.058	.197†	.129	.035	.232***	.071	.031	.149*	.122	.078	.136
R^2		.175			.306			.298			.318			.470	

†p < .10, * p < .05, **p < .01, ***p < .001

the control group had decreased ratings (M = 3.29 at pre-survey, M = 3.26 at post-survey). Third, there were significant group differences in bystander responsibility (β = .149, p = .040), whereby the intervention group showed increases in bystander responsibility (M = 3.59 at pre- survey, M = 3.61 at post-survey), while the control group had decreased ratings (M = 3.54 at pre-survey, M = 3.53 at post-survey). Finally, the intervention group was less likely to accept bullying and aggression at post-survey (β = .136, p = .023) than the control group. Specifically, the intervention group increasingly rejected aggression (M = 3.03 at pre-survey, M = 3.05 at post-survey), while the control group decreased their rejection of aggression (M = 2.97 at pre- survey, M = 2.91 at post-survey).

When we accounted for school-level clustering in Model 2, there were still significant group differences in post-survey ratings of adults responsiveness (β = .232, p < .001) and bystander responsibility (β = .149, p = .023). There was a nearly significant group difference in post-survey ratings of assertiveness (β = .197, p = .064), and no significant group difference for acceptance of aggression.

Behaviors

A series of regression models estimated the association of group membership with ratings of peer victimization, bullying perpetration, fighting, cybervictimization, and cyberperpetration. As before, Model 1 adjusted only for individual pre-survey scores and gender. There was a significant group difference in post-survey ratings of peer victimization (β = −.139, p = .028; Table 4), such that the intervention group showed decreases in peer victimization (M = 0.93 at pre-survey, M = 0.85 at post-survey), while peer victimization among the control group increased (M = 0.99 at pre-survey, M = 1.03 at post-survey). There were no significant group differences in ratings of bullying perpetration, fighting, cybervictimization, or cyberperpetration.

However, in Model 2, accounting for school clustering, the group difference in peer victimization attenuated and became non-significant (β = −.139, p = .324). There were no other significant group differences, with the exception of a marginally significant group difference in post-survey ratings of cybervictimization (β = −.103, p = .115), such that the intervention group demonstrated no average changes in cybervictimization (M = 0.18 at pre-survey, M = 0.18 at post-survey), while the control group reported increased rates of cybervictimization (M = 0.18 at pre-survey, M = 0.23 at post-survey).

Facilitator ratings of student engagement and program adherence

According to facilitators, the average attendance rate for the four Boston vs. Bullies sessions was 93.3%. On average, facilitators indicated that they completed 83.2% of session components (84.2% for Lesson 1, 78.9% for Lesson 2, 84.9% for Lesson 3, 85.5% for Lesson 4). Facilitators rated student engagement as an average of 3.74 (on a scale of 1 to 4, with 4 being very engaged; 3.89 for Lesson 1, 3.84 for Lesson 2, 3.68 for Lesson 3, 3.53 for Lesson 4).

Among students in schools that implemented Boston vs. Bullies, we replicated the regression models described above, removing the group membership variable and adding classroom-level facilitator ratings of student engagement and percent adherence to program components (averaged across the four sessions). Adherence to the program, though not student engagement, was signifi- cantly associated with decreased student reports of peer victimization (β = −.223, p = .006), bullying perpetration (β = −.223, p < .001) and fighting (β = −.095, p = .014).

Student program reactions

The majority of students who received the intervention indicated that they “Agreed” or “Strongly Agreed” that their class needed the Boston vs. Bullies program (69.4%), they started to think differently after the program (65.4%), the program was helpful (84.6%), there was less bullying in

Table 4. Associations of post-survey victimization and bullying scores with group membership, in analyses that do and do not account for school clustering.

	Peer victimization (n = 641)			Bullying (n = 639)			Fighting (n = 637)			Cybervictimization (n = 619)			Cyberperpetration (n = 619)		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Model 1: *No Adjustment for School*															
Gender	−.009	.065	−.009	−.015	.032	−.029	−.029	.037	−.043	.006	.038	.011	−.021	.028	−.059
Individual pre-survey	.612	.031	.612***	.733	.033	.665***	.798	.031	.724***	.364	.042	.328***	.231	.038	.236***
Group (Control = Ref)	−.145	.066	−.139*	−.027	.032	−.050	−.009	.037	−.013	−.051	.038	−.103	.007	.028	.019
R^2		.382			.447			.532			.110			.057	
Model 2: Adjustment for School															
Gender	−.009	.035	−.009	−.015	.034	−.029	−.029	.041	−.043	.006	.034	.011	−.021	.027	−.059
Individual pre-survey	.612	.045	.612***	.733	.095	.665***	.798	.077	.724***	.364	.083	.328***	.231	.042	.236***
Group (Control = Ref)	−.145	.015	−.139	−.027	.053	−.050	−.009	.064	−.013	−.051	.031	−.103†	.007	.028	.019
R^2		.382			.447			.532			.110			.057	

†p < .10, * *p* < .05, **p < .01, ***p < .001

the class after the program (65.7%), the program made things better in the classroom (67.3%), and the program made them think (69.6%). Further, the majority of students "Disagreed" or "Strongly Disagreed" that Boston vs. Bullies was useless (81.4%), the program made them nervous or embarrassed (85.3%), and that things were worse for students who were bullied after the program (79.2%). When asked if they liked Boston vs. Bullies, 50.3% of students said they liked it "a lot," 42.9% liked it "a little," and only 6.8% of students liked it "not at all." Almost half (49.7%) said that they learned "a lot" of new things from the program (36.9% learned "a little," 13.4% learned "not at all"). Finally, 87.8% of students said that they would recommend Boston vs. Bullies to other kids.

Among students in schools that implemented Boston vs. Bullies, we replicated the regression models described above, removing the group membership variable and adding the three student ratings of how much they liked the program, how much they learned, and whether they would recommend the program. Student experiences of liking the program were significantly associated with increased perceptions of adult responsiveness to bullying ($\beta = .178$, $p = .001$), attitudes about bystander behaviors ($\beta = .152$, $p = .005$), rejection of aggression ($\beta = .108$, $p = .028$), as well as reductions in bullying perpetration ($\beta = -.130$, $p = .007$). Student reports that they learned from the program were significantly associated with reductions in cybervictimization ($\beta = .142$, $p = .010$). Finally, student reports that they would recommend the program to peers were associated with increased perceptions of adult responsiveness to bullying ($\beta = .153$, $p = .002$).

Discussion

There is a need for research that employs rigorous methods to evaluate the effectiveness of bullying prevention programs in the United States. In particular, given the multiple competing demands schools face, it is essential to better understand whether short-term, low-cost, bullying prevention programs are effective at reducing bullying. Findings from the current evaluation suggest that Boston vs. Bullies – a short-term, free of charge bullying prevention program that leverages the power of role models in professional sports – has the potential to engage and motivate students in bullying prevention, increase student knowledge about bullying, improve attitudes about bullying, and, in some school contexts, reduce reports of peer victimization.

Specifically, in this evaluation, six schools were randomly assigned to implement Boston vs. Bullies for their 5th grade students, and four schools were randomly assigned to the wait-list control condition. Over an approximately 4-week period, students in the intervention condition received Boston vs. Bullies lessons. At post-survey, several significant findings emerged. First, as expected, students in the Boston vs. Bullies condition reported increased knowledge about bullying. This is consistent with other studies on bullying prevention programs (Polanin, Espelage, & Pigott, 2012), and suggests that the Boston vs. Bullies program is effective at increasing students' understanding of what is and is not bullying, important given that knowledge has been identified as an essential first step in behavioral change (Kirkpatrick, 1976).

A second key finding was that students who participated in Boston vs. Bullies demonstrated increased positive attitudes following the program. In particular, students participating in the intervention were more likely to increase in their perceptions of adult responsiveness and their sense of responsibility as bystanders. Boston vs. Bullies does not address adult responsiveness specifically, but it is possible that this finding is related to in-school facilitators (often classroom teachers) having received training in Boston vs. Bullies and delivering the program. The Sports Museum makes their own facilitators available to deliver the program if schools make that request, but schools participating in the current study used their own school staff. Future research could address whether program effects, particularly on perceptions of adult responsiveness to bullying, vary with the use of different facilitators. In terms of bystander responsibility, results suggest that students in the Boston vs. Bullies schools indicated they would be more likely to intervene in instances where they witnessed bullying. This finding is particularly encouraging, given prior evidence that interventions addressing bystander behaviors are some of the most effective (Polanin, Espelage, & Pigot, 2012).

Students in the Boston vs. Bullies group also reported increases in assertiveness and decreases in their acceptance of aggression. However, these results became non-significant in analyses adjusting for school clustering, suggesting that the strength of those associations may be influenced by school context. In terms of assertiveness, increases suggest that not only did students better understand bullying dynamics, but they were also more willing to speak up if they were bullied. In terms of student reports that they reject acts of aggression and bullying, results suggest that students in the Boston vs. Bullies group were more likely to conceptualize these negative behaviors as problematic, which in turn, might make them more likely to intervene.

A third key finding was related to decreases in bullying victimization among students who participated in Boston vs. Bullies. Bullying victimization is the behavior most clearly targeted by the program and, while students in the program demonstrated decreases in bullying victimization, reports of victimization simultaneously increased among students in wait-list control schools. We caution, however, that these group differences were modest in magnitude and they became non-significant in analyses accounting for school clustering. This finding is similar to a prior study that also found the effectiveness of a bullying prevention program was variable across schools (Espelage et al., 2015). The modest effects on behavior change are also similar to the results of other bullying prevention programs (Ttofi & Farrington, 2011) and underscore the importance of continued work to refine and implement high-quality bullying prevention programs that will have an impact on the most important outcomes for youth.

There were also several non-significant findings in the data. Although there were no changes in fighting from pre- to post-survey for students participating in Boston vs. Bullies, this is not necessarily surprising. In fact, bullying is distinct from fighting, and the Boston vs. Bullies program specifically targets bullying rather than a broader constellation of youth aggression. Contrary to hypotheses, there were also no significant changes in cyberperpetration for the intervention group relative to the control group, and only marginally significant changes in cybervictimization. It might be that although the program addresses cyberbullying, the potential net of students involved is much wider than 5th graders or students at the participating schools (e.g., 5th graders may experience cyberbullying from older students, students in other schools, or adults), and thus it may be more difficult to effect change in this domain. Furthermore, cyberbullying is more common among older students; accordingly, there were low rates of cyberbullying in this sample, including at baseline. In addition, we did not assess level of technology access among participants, and level of technology access relates to potential cyberbullying involvement.

Taken together, these findings have important implications for the field of bullying prevention. Most notably, although research highlights the need for comprehensive programs (Bradshaw, 2015; Ttofi & Farrington, 2011), such programs are not always feasible for schools, both in terms of cost and time. As such, results from this evaluation are promising in their support for implementing a shorter-term, no-cost program that can be effective at improving knowledge and attitudes about bullying, which may be a precursor to reduced bullying behavior (Kirkpatrick, 1976). One caveat, however, is our finding that greater adherence to program components was associated with improved outcomes for youth in Boston vs. Bullies schools. This suggests that, although the program is designed to be flexibly implemented, having a sufficient dose of the program is important for student outcomes. Results of the current study also indicate that the program is highly engaging for students. Furthermore, students who are more engaged with the program (i.e., those who report they enjoy it and indicate that they would recommend it) show improvements on a number of outcomes, including attitudes about bullying, reductions in bullying perpetration, and reductions in cybervictimization. These results provide further support for the importance of delivering programs that students find engaging and enjoyable.

This study has a number of limitations, with the most important being that the Boston vs. Bullies program is regionally specific. Future evaluations could address whether an analogous program, with sports or other celebrities from another location, would be similarly engaging and effective at reducing bullying attitudes and behaviors. Second, the program is aimed primarily at 5th grade students, rather than a broader age range of students. However, given that bullying peaks in middle school (Salmon, Turner,

Taillieu, Fortier, & Afifi, 2018), 5th grade is a particularly salient time to be addressing bullying. Third, our evaluation was conducted anonymously and, while we did our best to match pre- and post-surveys, a number of student surveys were dropped from analyses because we were not able to match their data. Evaluations that are not conducted anonymously are able to overcome this challenge, but can present additional challenges related to school access, reporting identified bullying, and quality of self-report data. Fourth, we used only self-report measures of peer victimization and bullying perpetration. Other research has found that self-report data differ from teacher and peer nominations (Branson & Cornell, 2009). Finally, this evaluation included a small number of schools that limited our ability to examine school-level factors. If similar sports and celebrity-based programs are developed, it will be important to evaluate their effectiveness on a larger scale and in more geographically diverse samples. Larger samples will also allow future studies to address questions about both individual and group-level effects of the intervention.

Given the prevalence of bullying and its clear negative consequences (Wolke & Lereya, 2015), it is essential to identify school programs, such as Boston vs. Bullies, that offer innovative approaches to effectively improve knowledge and attitudes about bullying.

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Data Availability Statement

Raw data were collected from schools participating in this study. Derived data supporting the findings of this study are available from the corresponding author (JGG) on request.

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