The author(s) shown below used Federal funding provided by the U.S. Department of Justice to prepare the following resource:

Document Title:	**Evaluation of the Effectiveness and Sustainability of the Olweus Bullying Prevention Program in Increasing School Safety for Urban Low-Income Middle School**
Author(s):	**Terri N. Sullivan, Ph.D., Andrea J. Publow, MFA, CRA**
Document Number:	**255992**
Date Received:	**January 2021**
Award Number:	**2014-CK-BX-0009**

Federal Agency/Organization:	National Institute of Justice/ Office of Research and Evaluation
Federal Grant Number:	2014-CK-BX-0009
Project Title:	Evaluation of the Effectiveness and Sustainability of the Olweus Bullying Prevention Program in Increasing School Safety for Urban Low-Income Middle School
PI Name:	Terri N. Sullivan, Ph.D. tnsulliv@vcu.edu (804) 828-9304
Name of Submitting Official:	Andrea J. Publow, MFA, CRA Director of Sponsored Programs- Government/Non-Profit Support dirospa@vcu.edu (804) 828-6772
Original Submission Date:	March 25, 2020
Revised Report Submission Date:	
DUNS:	
EIN Number:	
Recipient Organization:	Virginia Commonwealth University 800 East Leigh Street, Suite 3200 P.O. Box 980568 Richmond, VA. 23298-0568
Project/Grant Period:	
Report	Final Report
Signature of Submitting Official:	

Evaluation of the Effectiveness and Sustainability of the Olweus Bullying Prevention Program in

Increasing School Safety for Urban Middle Schools

Terri N. Sullivan, Albert D. Farrell, Kevin S. Sutherland and Anne Y. Greene

March 30, 2020

Summary Overview

Abstract

The Olweus Bullying Prevention Program (OBPP) is a comprehensive school-based program designed to prevent youth violence by improving school climate. Although the OBPP has been implemented in hundreds of schools across the U.S., few studies have evaluated its impact on schools in the U.S., particularly schools in urban areas that serve high percentages of minority adolescents from under-resourced communities. The current project built on an evaluation of the OBPP completed as part of a CDC-funded Academic Center of Excellence in Youth Violence Prevention (VCU-ACE Project). The VCU-ACE project used a multiple baseline experimental design that randomized the order and timing of the implementation of the OBPP in three urban public middle schools in the southeastern United States over a five-year period from 2010-2015. The current project increased the knowledge gained from the VCU-ACE Project by continuing the implementation of the OBPP in two schools that were already receiving the program and implementing the OBPP in a third school that served as the control school. Data across the full eight years of the project were collected from 2,755 students at the three schools (78% African American; 52% female). Analyses of time-series data using multilevel modeling revealed intervention effects on several key outcomes including significant decreases in: (a) teacher-reported relational, physical, and verbal aggression across intervention years, and teacher-reported physical, verbal, and relational victimization emerging in the first or second year of intervention, and (b) student-reported relational aggression and cyber aggression which emerged from Year 3 onward and physical, verbal, and relational victimization across project years, with reductions in cyber victimization emerging in the second year of intervention.

I. Purpose of the Project. We evaluated the school-level effects of the OBPP using a multiple-baseline experimental design that examined the effect of initiating intervention activities on outcome trajectories at three urban public middle schools in the southeastern United States. We conducted qualitative analyses including interviews and focus groups with school staff to identify supports and barriers that helped or

hindered the implementation of the OBPP, and ways to address barriers. Lastly, we conducted a cost analysis of the OBPP.

II. Project Aim 1: Evaluation of the OBPP Effectiveness

Method

A. *Project participants* – Participants in the evaluation of the OBPP were students and their teachers in three public middle schools in an urban school district in the southeastern United States. We selected schools with attendance zones in neighborhoods with elevated rates of poverty and violent incidents based on surveillance data (Masho, Schoeny, Webster, & Sigel, 2016). The school district's enrollment included a majority of Black, non-Hispanic youth, ranging from 69% to 81% across the eight years of the project, and a large percentage (70% to 100%) of students qualified for the federal free school lunch program. For the first five years, enrollment ranged from 401 to 493 at School A, 519 to 575 at School B, and 419 to 610 at School C. The school system closed School A in 2015 and students in its attendance zone were sent to School B. For the present study, we continued to categorize students based on their original attendance zones according to their home address. For the last three years of the project, enrollment ranged from 798 to 941 for students in the merged school and from 601 to 732 in School C.

Participants' mean ages at their first wave of participation were 11.5 (sixth graders), 12.7 (seventh graders), and 13.7 (eighth graders), and 52% were female. Seventeen percent of participants identified as Hispanic or Latino. Most participants identified as Black, non-Hispanic (72%), 6% endorsed more than one racial category, and 13% did not select any racial category. Six percent identified as white, and 1% identified as American Indian or Alaska Native, Asian, or Native Hawaiian or Pacific Islander.

B. *Procedures* - We collected 29 waves of student-report data from a random sample of sixth, seventh, and eighth graders every 4 months (fall, winter, spring, and summer), from February of 2011 to June of 2018. We did not collect data in fall 2015 due to a change in the source of funding. Because our focus was on school-level changes, we used a planned missingness design in which participants were randomly assigned to two waves of data collection every year. This design does not bias the sample because data are missing at random and reduces participant fatigue and testing effects. Over eight years,

4

students completed 8,643 surveys (95% participation rate). After accounting for invalid data (e.g., incomplete, completed rapidly; 2.3% of the total data), there were an average of 298 surveys per wave.

We collected ratings of participating students' behavior from core academic teachers at every wave, excluding the summer waves. Teachers completed 7,091 rating forms across 22 waves (98% participation rate). The majority of teachers (73%) were female. Teachers identified themselves as Black, non-Hispanic (56%), white, non-Hispanic (26%), multiracial (6%), and Hispanic (9%).

C. *Measures* - included: (a) the *Problem Behavior Frequency Scale* for student-report (PBFS-AR; Farrell, Sullivan, Goncy, & Le, 2016) and teacher-report (PBFS-TR; Farrell, Goncy, Sullivan, & Thompson, 2018) forms to assess physical, relational, verbal, and cyber aggression and victimization; (b) the *School Safety Problems Scale* (Henry, Farrell, Schoeny, Tolan & Dymnicki, 2011); (c) two subscales from the *Inventory of School Climate – Student* (ICS-S; Brand, Felner, Shim, Seitsinger, & Dumas, 2003) to assess students' perceptions of teacher (*Teacher Support Subscale*) and peer (*Positive Peer Interaction Scale*) support; (d) the PBFS-AB *Peer Pressure for Fighting Subscale* (Farrell et al., 2016), and (e) the *Friends Support for Aggression and Nonviolence Scale* (Farrell, Thompson, & Mehari, 2017).

D. *Data Analysis*. We used SAS Proc Mixed to model outcomes at each wave (i.e., Level 1) as a function of an intercept, school year, season, and intervention phase. In this model, the intercept represented the mean during the baseline year for students at School C. The dummy-coded school variable represented mean differences between School C and each of the other two schools during the baseline year. The School Year effect represented linear change across the eight years of the project, controlling for intervention effects. The Season effect represented linear change within the school year, and the Summer effect represented the extent to which means during the summer deviated from the linear trend for season for measures that were administered in the summer. The effects for Intervention Phase (IntYr1, IntYr2, IntYr3+) modeled deviations from the baseline trajectory during the first, second, and subsequent years of implementation, respectively. The Intervention Phase x Season interactions indicated differences in linear slopes during the school year relative to the baseline for each year of implementation.

We used the Kenward-Rogers adjustment for degrees of freedom. We log transformed scores on

5

the measures of aggression and victimization to reduce their skewness and kurtosis, and used linear transformations to provide scores with similar means and standard deviations as the original scores. School year was coded such that a one-unit change represented a one year difference, and season was coded such that the difference between waves at the beginning and end of the school year represented a one unit difference. This enabled us to estimate effect sizes (i.e., Cohen's *d*) by dividing the unstandardized parameters by the *SD* of the outcome measure. We conducted additional analyses to investigate whether intervention effects differed across grades or gender.

Results

E. *Baselines Differences Across Schools*. Teachers rated students at School B higher on all three forms of aggression. For the student ratings, participants at School A reported higher frequencies of victimization relative to School C. For the peer variables, students at School A reported lower levels of friends support for nonviolence. For school safety, students at School A rated school safety problems higher relative to students at School C. For school climate, students at schools A and B reported lower levels of teacher support than those at School C. These were small effects ranging from *d* = .10 to .24 in absolute value.

Outcomes on Teacher Ratings of Aggression. Coefficients representing the baseline trajectory revealed linear increases in teacher ratings of all three forms of aggression both within (ds = .23 to .27), and across school years (ds = .04 to .06). We found significant intervention effects in the expected direction on changes across school years for teacher ratings of all forms of aggression. Significant decreases in the frequencies of each form of aggression were evident beginning in the first year of implementation (ds = -.13 to -.24), and were maintained during the second (ds = -.19 to -.30) and subsequent years (ds = -.30 to -.39) (see Table 1).

Intervention effects on teacher ratings of students' aggression differed as a function of both sex and grade. Intervention effects were significant for girls during each year of implementation, but were significant for boys only during the third and subsequent years of implementation. We also found significant grade differences, but these were limited to the third and subsequent years of implementation.

6

In each case, intervention effects (decreases) were stronger for seventh graders compared with sixth graders. Eighth graders also had significantly stronger intervention effects than sixth graders on teacher ratings of their physical and verbal aggression. This likely reflects the cumulative effect of the intervention across multiple years such that students in the sixth grade would only be experiencing one year of the intervention.

Outcomes on Student Reports of Aggression. The baseline linear slope for adolescents' ratings of their frequency of aggression varied across forms. There was no significant linear change in physical aggression within or across school years. There was a small significant negative linear slope for relational aggression across school years ($d = -.03$), but a non-significant linear slope within school years. In contrast there was a significant *increase* in cyber aggression both within ($d = .10$) and across ($d = .03$) school years. The summer coefficients revealed a significant decrease in adolescents' reports of their frequency of physical, relational, and cyber aggression in the summer compared with the school year ($ds = -.24, -.16,$ and $-.21$, respectively). There were no significant intervention effects on adolescents' reports of their frequency of physical aggression. There were, however, significant intervention effects in the expected direction for their ratings of relational and cyber aggression during the third and subsequent years of implementation ($ds = -.16,$ and $-.23$). There were no significant differences in intervention effects across sex or grades (see Table 2).

Outcomes on Teachers' ratings of Victimization. Analyses of the baseline trajectory indicated small, but significant linear increases across school years for physical ($d = .04$), and relational victimization ($d = .03$), but not for verbal victimization, and significant linear increases within each school year on teacher ratings of all three forms of victimization ($ds = .18$ to $.26$). There were significant intervention effects in the expected direction indicating decreases in teacher ratings of all three forms of victimization relative to the baseline. Intervention effects on teacher ratings of physical victimization were evident during the first year of implementation ($d = -.16$) and remained significant during the second and subsequent years of implementation ($ds = -.20$ and $-.31$, respectively). There were intervention effects on teacher ratings of verbal and relational victimization during the second year of implementation ($ds = -$

7

.27 and -.29, respectively), which remained significant across the subsequent years (ds = -.26 and -.33, respectively) (see Table 1).

Intervention effects on teacher ratings of victimization differed as a function of both sex and grade. As with aggression, intervention effects were significant for girls during each year of implementation (ds = .08 to .23), but were significant for boys only during the third and subsequent years of implementation. We also found significant differences across grades. Follow-up analyses revealed the same general pattern as for teacher ratings of aggression. Grade differences in intervention effects were only evident during the third and subsequent implementation years, with stronger intervention effects for seventh graders compared with sixth graders for all three forms of aggression and victimization (ds = .23 to .24). Eighth graders also had significantly stronger intervention effects than sixth graders on teacher ratings of their verbal victimization. (d = .24).

Student Reports of Victimization. The baseline trajectory for student reports of victimization was characterized by a small linear decrease across school years (d = -.03), a level slope within the school year, and a decrease in the summer wave (d = .15). There were significant intervention effects in the expected direction reflecting a decrease in student reports of victimization (i.e., verbal, relational, and physical) starting in the first year of implementation that remained significant during the second and subsequent implementation years (ds = -.17, -.18, -.28, respectively). Intervention effects reflecting decreased cyber victimization were evident during the second year of implementation (d = -.08), and remained significant in subsequent years (d = -.10). There were no significant differences in intervention effects across sex or grade (see Table 2).

Student Reports of Peer Factors. There were no significant linear slopes within or across school years for the baseline trajectory except for peer pressure for fighting, which decreased across school years. There were, however, significant increases in the summer for friends' support for nonviolence (ds = .12 and .20, respectively), and decreases in friends' support for fighting and peer pressure for fighting (ds = -.12 and -.11, respectively). There were no significant intervention effects on the peer factors, with one exception. There were significant sex differences in intervention effects for Peer Pressure for Fighting

8

that was limited to the second year of implementation. More specifically, we found a decrease for boys (d = -.29, p = .002), but not for girls (d = .06).

Ratings of School Safety and Climate. There were negative linear slopes indicating decreases within school years during the baseline phase for teacher support and positive peer interactions. Significant intervention effects were found for school safety problems, but not for either of the other two measures of school climate. Contrary to expectations, there was a significant decrease in student reports of school safety problems during the first year of intervention (d = -.17), but this effect was not maintained during the second or subsequent years of implementation. There were also significant intervention effects on linear slopes within the school years. More specifically, contrary to expectations, during the first and second years of implementation there were significant decreases in student ratings of school safety problems relative to baseline slopes. However, these effects were not evident during the third and subsequent years of implementation.

There were significant gender differences in intervention effects on positive peer interactions for linear slopes both within and across school years. Follow-up analyses indicated sex differences in the direction of intervention effects, but there were no significant main effects for girls or for boys with one exception. Contrary to expectations, during the third and subsequent years of implementation, there was a decrease in the linear slope during the school year for boys' ratings of positive peer interactions (d = -.28, p < .01), but not for girls. There were no significant grade differences in intervention effects on linear slopes within or across school years for any of the three measures of school climate.

IV. Project Aim 2 - Identification of Barriers and Supports for the Implementation of the OBPP.

We conducted two qualitative studies of the barriers and supports for the implementation of the OBPP in urban middle schools via focus groups and semi-structured interviews. The methods and results for each study are described below.

A. Study 1

Method

1. *Setting and Procedures.*

9

In summer 2015, school staff from two urban public middle schools provided qualitative data on barriers and supports for the OBPP implementation, and ways to address the identified barriers. The fall school enrollment for 2014 in School A (51% female) included a majority of students (61%) who identified themselves as Black, non-Hispanic, 32% who identified as Hispanic, 5% as white, and less than 1% who identified as American Indian or Alaska Native, Asian American, Native Hawaiian or Pacific Islander, or more than one race. For School B (54% female), most students (88%) identified themselves as Black, non-Hispanic, 7% as Hispanic, 4% as White, and less than 1% identified themselves as American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, or more than one race. During the 2014-2015 school year, all students were eligible for the federal free school lunch program. At the time of data collection, one school had implemented the OBPP for four years and the other school for three years.

2. *Participants*

A total of 39 participants were comprised of teachers, school staff, and administrators. Participants ranged in age from 29 to 75 (*M age* = 51), and 54% were female. One participant identified as Hispanic or Latino. A total of 69% of participants identified themselves as Black or African American, 28% as white or European American, and one participant as Asian American. Each participant provided written, informed consent prior to data collection, and all study procedures were approved by a university institutional review board. All data were collected via separate focus groups for administrators, Bullying Prevention Coordinating Committee (BPCC) members who coordinated all OBPP components at the school-level, and teaching and non-teaching school staff at each school (*n* = 6). Each focus group lasted approximately two hours.

3. *Qualitative Data Analyses*

All qualitative data was audio recorded and then transcribed verbatim. The questions coded for the current study are listed in Table 3. Two coders were assigned to each question for open coding. Each coder completed their open coding assignment independently, and identified meaningful units of texts that represented participants' thoughts about supports and barriers for the OBPP implementation, and ways to

10

address barriers. After each person completed open coding, the two coders reached consensus on how to code each unit of text. Once consensus coding was completed, two coders were assigned to complete axial coding for each question. During axial coding, an iterative process was used to relate the codes to each other and form themes, following previously established methods for theme identification (Miles & Huberman, 1994; Strauss & Corbin, 1998). In addition, consensus was achieved for the identification of negative cases that were not supported within the final theme structure.

Results

Tables 4 and 5 (see Appendix) list the themes of supports, barriers, and ways to address barriers for the OBPP implementation. For barriers and ways to address barriers, a total of five themes were identified including: (a) *Time for OBPP implementation*, (b) *Staffing challenges*, (c) *Challenges with implementation,* (d) *Communication challenges*, and (e) *Parent actions may escalate conflict between students*. The first two themes highlighted challenges for school staff in allocating time for OBPP implementation because of multiple competing responsibilities, scheduling issues, and time sensitive demands (e.g., SOL testing), and the difficulties of having to split staff (i.e., the BPS) between schools, and school staff having little control over monitoring on the buses. For the third theme, several implementation challenges were described including not all students being engaged in class meetings, some students becoming tired of writing prompts, large group discussions not working as well as small group activities, and students not being interested in some items (e.g., school supplies) as rewards for positive actions. Three communication challenges related to implementation were described in the fourth theme including that not all school staff who reported potential bullying behavior incidents were informed of the outcome, and that some teachers interpreted certain potential bullying behavior incidents as "kids being kids," and thus did not report them. Further, some students were reluctant to report bullying behavior incidents because they worried about being perceived as a snitch or facing negative peer responses. The last theme described difficulties when parents became involved in their students' conflicts on social media, which could escalate the situation (see Table 4).

A total of five themes of implemented supports and two themes of suggested supports that could facilitate OBPP implementation are described in Table 5. The themes for implemented supports included: (a) *Clear system for addressing bullying behavior referrals*, (b) *OBPP endorsement and buy-in*, (c) *A focus on positive behavior*, (d) *Training and resources*, and (e) *Meeting context and staff presence*. In the first theme, participants described how having a clear protocol with accessible materials helped school staff to address potential bullying incidents. The second theme addressed how student and teacher willingness to report and respond to potential bullying incidents, respectively, facilitated OBPP implementation. For the third theme, participants discussed the importance and success of school staff focusing on the positive – by providing attention and intangible and tangible reinforcement for positive student behaviors. The last two themes highlighted the helpful role of general OBPP training and resources (e.g., for class meetings), and the context and presence of specific staff that facilitated BPCC meetings and staff discussions. The two themes of suggested supports included: (a) *Types, frequency, and content of OBPP trainings*, and (b) *Creatively develop activities that are beneficial/relevant for students and parents*. The first theme described participants' suggestions for small-scale trainings, refresher trainings, and the inclusion of students in refresher trainings. The second theme addressed the benefits of developing meaningful activities that: (a) give students opportunities to express their creativity and voice, and (b) communicate the importance of the OBPP to parents.

2. Study 2

Method

1. *Setting and Procedures.*

In summer and fall of 2018, school staff from two urban public middle schools (School AB and School C) provided qualitative data on barriers and supports for implementing the OBPP. The school system closed School A in 2015 and students who attended this school were sent to School B. For the 2017 fall enrollment in School AB (49% female), the majority of students (71%) identified themselves as Black, non-Hispanic, 23% as Hispanic, 4% as white, and less than 1% identified as Asian or as having more than one race. For School C, 53% of students identified themselves as Black, non-Hispanic, 43% as

12

Hispanic, 2% as white, and less and 1% as American Indian or Alaska Native, Asian, or identified more than one race. In 2017-2018, all students were eligible for the federal free school lunch program. At the time of data collection, the OBPP had been implemented in School AB and School C for three years. Research staff collected focus group and interview data at each school. Three focus groups were conducted separately for sixth, seventh, and eighth grade teachers at each school ($n = 6$). Additionally, individual interviews were conducted with eight administrators, eight BPCC members, and six teaching and non-teaching staff.

2. *Participants*

A total of 42 participants were comprised of teachers, school staff, administrators, and a parent who served on the BPCC. Participants ranged in age from 26 to 79 (*M age* = 46), and 74% were female. One participant identified as Hispanic or Latino. Seventy-nine percent of participants identified themselves as Black or African American, 19% as white or European American, and the remaining participants marked "Other" or did not answer. A total of 30 teachers reported 1-18 years of teaching experience (*M* = 4.2 years).

3. *Qualitative Data Analyses*

The same procedures for data analyses were followed as described in the first qualitative study. The list of focus group questions identified for the current study are listed in Table 6.

Results

A total of six themes were identified for barriers to OBPP implementation including: (a) *Time for OBPP implementation and commitment,* (b) *Difficulty in identifying bullying incidents*, (c) *School context, climate, and structural issues,* (d) *Unanticipated changes and events,* (e) *External influences that impact bullying behavior,* and (f) *Limited resources*. The first theme addressed challenges of scheduling and prioritizing the OBPP consistently across the school year and that some staff were less committed in the implementation of OBPP than others. In the second theme, participants described difficulties in identifying bullying situations, for example, when two teachers have different perspectives. The next two themes addressed overarching issues including high rates of teacher turnover, high average class sizes,

frequent and often unexpected disruptions in the school schedule, and a rapidly changing school demographic. Finally, the last two themes detailed how social media influences could impact bullying behavior incidents and the difficulties of sustaining the OBPP in the context of limited resources (see Table 7).

The following five themes of supports for OBPP implementation were identified including: (a) *Endorsing the OBPP*, (b) *Collaboration and roles*, (c) *Helpful intervention dynamics*, (d) *Fidelity*, and (e) *Logistics*. For the first theme, the endorsement of the OBPP was shown in administrator prioritization of this program and the presence, involvement, and commitment of administrators, teachers, and school staff in implementing OBPP components. The second theme addressed the supportive nature of collaboration and roles through clear communication, and teamwork, leadership, and collaboration in the implementation of the OBPP. Helpful intervention dynamics described in the third theme included flexibility in the delivery of class meetings and that revisions were made based on teacher feedback, the interactive nature of class meetings, and teacher knowledge of OBPP components and dynamics. In theme four, participants discussed that periodic fidelity monitoring through observations and student exit tickets helped school staff to stay on track with class meetings and engaged students, respectively. Lastly, having a set schedule for class and BPPC meetings and supportive materials (e.g., for class meetings) helped with implementation (see Table 8).

V. Project Aim 3: Cost Analysis of the OBPP in Urban, Middle Schools

Our third aim was to conduct a cost analysis for the OBPP program. Our methods for estimating the costs for intervention implementation, benefits of the OBPP, and cost effectiveness (i.e., cost per averted event) are presented below.

Method and Results

***Intervention Costs*.** Cost data were available for the last three years of the project (i.e., 2015-2016, 2016-2017, and 2017-2018). We used this data to calculate the average cost estimate per school for the OBPP,

which was then used in all calculations of cost per averted event (i.e., events of student aggression or victimization that are estimated not to have happened based on OBPP implementation). The intervention implementation costs were divided into the following three categories: (a) labor costs for education and training of staff, and (b) labor cost for OBPP implementation, and (c) material costs for education, training, and OBPP implementation. School staff salary was calculated from Virginia Department of Education Workforce Data & Reports (http://www.doe.virginia.gov/teaching/workforce_data/index.shtml). The 2018 Bureau of Labor Statistics Consumer Price Index (https://www.bls.gov/cpi/data.htm) was used to provide inflation adjustments from 2016 to 2018. For each calculation that included school staff salary, the hourly rate was multiplied by the total hours required for a specific task. For example, the hourly rate for teachers was multiplied by the number of hours needed for class meeting implementation. Olweus materials included classroom-level materials (e.g., binders with classroom meeting outlines and meeting materials), school-level materials (e.g., OBPP rules posters for classrooms and shared school areas) and printed meeting materials for after-school student leadership groups. Because the Bullying Prevention Specialist (BPS) was part of the research staff hired to work part-time in each school, we provided average cost estimates per school with and without this position.

Results showed that labor costs for education and training per school were estimated at $16,445.42 which included $4,116.67 for the Olweus consultant's time for training and ongoing consultation throughout the school year and $12,328.75 for the BPCC members and administrators to attend a two-day training and for the entire school staff to participate in a six-hour training (see Table 9). Labor costs for program implementation were calculated with and without the Bullying Prevention Specialist's time included. The administrator, BPCC member, and school staff time was estimated at $12,592.68 across the school year and included attendance at BPCC meetings and subgroup meetings related to the planning and implementation of school events, attendance at school events (e.g., the student and family kick-offs), facilitating the student leadership group meetings, and administration of the

15

Olweus Bullying Questionnaire. The labor costs for class meetings were estimated at $16,591.17 which included an average of 35 teachers conducting an average of 722 class meetings across the year.

Intervention Benefits. The benefits of the OBPP were estimated within the context of a multiple-baseline experimental design that examined the effects of initiating intervention activities on outcome trajectories at participating middle schools. Based on randomization of the order and timing of initiating intervention activities in each school, we began the intervention at School A during the 2011-2012 school year, at School B during the 2012-2013 school year, and at School C during the 2015-2016 school year. In each school, once we started the intervention, it was continued through the end of the project. This differs from a randomized trial in that the focus of our evaluation was on changes at the school level associated with initiating the intervention relative to a counterfactual that reflected changes in schools not receiving the intervention during the same period of time. In other words, the baseline represented the frequency of aggression and victimization within the school during years the intervention was not being implemented, rather than changes within individual students within a school year.

Significant outcome effects were found on student reports and teacher ratings of student behavior (see Tables 1 and 2). We used the following approach to translate the parameter estimates of intervention effects into more meaningful units. This involved multiplying each parameter estimate by a scaling factor, the number of items that went into each score, and the number of months in the school year. This provided the average benefit per student (see Table 10). We also estimated the school-level effect by multiplying the per student benefit by 500, which represents the average number of students at each of the schools across the project years. The assumptions that went into these calculations are as follows.

We multiplied each parameter estimate by a scaling factor of 2 to translate differences in the anchor points on the rating scale to differences in frequency of each behavior. Students rated their frequency in the past 30 days for each item on the PBFS-AR on a 6-point scale with anchor points of *Never, 1-2 times, 3-5 times, 6-9 times, 10-19 times,* and *20 or more times.* Responses to each item were rescored by combining the top four categories based on an item-response theory analysis indicating that

16

there was limited differentiation at the top end of the scale. The score on each measure was then calculated by averaging ratings across all items within each measure based on assigning the following values to each response category: (*Never* = 1, *1-2 times* = 2, *3-5 times*= 3, *6-9 times, 10-19 times,* and *20 or more* = 4. These assigned numbers do not reflect number of events, but indicate which frequency category was reported by the student. For example, compared with a student with a score of 1 on an item (i.e., *Never*), a student who received a score of 2 (i.e., *1-2 times*) would have differed by 1-2 times in the past 30 days, a student who received a score of 3 (i.e., *3-5 times*) would have differed by 3-5 times, and a student who received a score of 4 (*6-9 times* through *20 times or more*) would have differed by 6-20 or more times. We rescaled the parameter estimates by multiplying them by 2, which equates a difference of 1 category on the 4-point scale with a difference of 2 occurrences. We considered this a conservative approach in that the actual differences between adjacent points for the first 3 categories could be as high as 2 to 4, and there was no upper limit on the differences between the first 3 rating categories and the category of 6 or higher.

In contrast to the student report measures, teachers rated the frequency of each behavior on the following four categories (*Never, Sometimes, Often,* and *Very often*). We translated these into frequencies by assigning the same scaling factor used for the student report measure. This assumes that a rating of *sometimes* reflects 1-2 times, a frequency of *often* reflects 3-5 times, and *very often* reflects 6 or more times. We considered this a conservative approach in that *often* is likely to reflect more than 3 times in the past 30 days. We multiplied each parameter estimate for each outcome by the number of items in the scale. This was necessary because scores on the measures used in the analysis were calculated by taking the average across the items, which reflects their average frequency rather than the sum of the items, which reflects the total frequency summed across items. We corrected this by multiplying each parameter by the number of items that went into the score.

Because the ratings were based on the past 30 days, we multiplied parameter estimates for each outcome by 9 to estimate the frequency across the 9 months of the school year. The resulting values

represent an estimate of the reduction in the number of acts of aggression or victimization per student during the school year. We also estimated the school-level effect of the intervention by multiplying the benefit per student by 500, which represented the average number of students in each school across project years. The per-student values provided in Table 10 can be used to estimate benefits for schools that vary in their size.

For example, we calculated the per-student reduction in the frequency of victimization achieved during the first year of the intervention as follows:

-.07 x 2 x 5 x 9=-18.8

Where -.07 is the unstandardized intervention effect on the PBFS-AR Victimization scale for the first intervention year; 2 is the scaling factor, 5 is the number of items in the PBFS-Victimization scale, and 9 = number of months in the school year.

The resulting score of -18.8 reflects an estimated reduction in 18.8 acts of victimization experienced by each student in the school across the school year. Multiplying this by 500 reflects an estimated reduction of 9,408 incidents of victimization across the school year within a school with a student population of 500 students. A review of the significant effects for student ratings reported in Table 10 estimate a school level reduction of 9,408 incidents of victimization during the first year of implementation. During the second year of implementation, the estimated benefit was a reduction of 10,017 acts of in-person victimization, and 1,773 acts of cyber victimization. For the third through the final year of implementation, the estimated benefits include reductions of 2,486 incidents of relational aggression, 3,045 incidents of cyber aggression, 15,609 incidents of in-person victimization, and 2,255 incidents of cyber victimization.

The significant effect for the teacher ratings are detailed in Table 10. During the first year of intervention implementation, the estimated benefit included a reduction of 6,038 incidents of physical aggression, 5,531 incidents of verbal aggression, 4,481 incidents of relational aggression, and 3,334

incidents of physical victimization. For the second year of implementation, the estimated benefit was a reduction of 4,736 incidents of physical aggression, 9,095 incidents of verbal aggression, 6,928 incidents of relational aggression, 4,006 incidents of physical victimization, 8,888 incidents of verbal victimization, and 5,793 incidents of relational victimization. During the third through the final year of implementation, the estimated benefit was a reduction of 9,091 incidents of physical aggression, 13,084 incidents of verbal aggression, 8,797 incidents of relational aggression, 6,403 incidents of physical victimization, 8,519 incidents of verbal victimization, and 6,495 incidents of relational victimization.

The cost-effectiveness for the OBPP (i.e., calculated as the cost per event averted) were reported for self- and teacher-report of students' behaviors and experiences where significant intervention effects were found for the first, second, and third and subsequent years of implementation (see Table 11). The cost per event averted represented the average cost of the OBPP per school year divided by number of incidents averted for each category. The first set of calculations included the labor costs for the BPS. For the first year of implementation, the cost per averted event was $9.60 for student-reported victimization and $27.08 for teacher ratings of student victimization. The relatively higher cost per event averted for teachers may represent the decrease in only physical victimization and not other subtypes of student victimization in the first year of implementation. The cost per incident averted for teacher-report of student aggression was $5.63. In the second year of the OBPP implementation, the cost per event averted was $7.66 for student-reported victimization, $4.83 for teacher ratings of student victimization, and $4.34 for teacher ratings of student aggression. For the third and subsequent years of the OBPP implementation, the cost per event averted was $5.05 for student-reported victimization, $4.22 for teacher ratings of student victimization, $16.32 for student-reported aggression, and $2.91 for teacher ratings of student aggression.

Another set of calculations was conducted without accounting for the labor costs for the BPS. For the first year of implementation, the cost per averted event was $5.46 for student-reported victimization, $15.42 for teacher ratings of student victimization, and $3.20 for teacher ratings of student aggression. In

19

the second year of implementation, the cost per averted event was $4.36 and $2.75 for self and teacher-ratings of students' victimization, respectively, and $2.48 for teacher ratings of student aggression. In the third and subsequent years of implementation, the cost per averted event was $2.88 and $2.40 for self and teacher ratings of student victimization and $9.29 and $1.66 for self and teacher ratings of student aggression.

These results must be interpreted cautiously for several reasons. One factor is the apparent discrepancy between findings based on student-report and those based on teacher ratings of students' behavior. Our estimation of benefits are based on our assumptions regarding rescaling the student and teacher measures, which were based on rating categories rather than frequency counts. They also assume that the three waves of data collected during the school year results in a representative sample of behavior.

Project Implications

One strength of our project was tailoring the OBPP based on feedback from school staff to better meet the needs of urban middle schools which hopefully enhanced its relevance for students and school staff. We collected information on supports and barriers that helped or hindered OBPP implementation prior to the start and at the end of the current project. We found some supports and barriers for OBPP implementation that were consistent with other qualitative efforts focused on early adolescents in rural and non-metropolitan settings (e.g., Coyle, 2008; Limber et al., 2004), but also unique barriers related to OBPP implementation in the urban middle schools in our project (e.g., changes in student demographics, high staff turnover). Consistent with prior studies (Limber et al., 2004), we identified the supportive role of grade-level teams in facilitating OBPP implementation, which is particularly important in complex U.S. middle school settings.

For the quantitative analyses, to our knowledge, we evaluated the longest period of OBPP implementation in U.S. urban middle schools over eight years. We found significant decreases in teacher ratings of students' physical, relational, and verbal aggression and victimization with some differences by

sex and grade and in the timing of effects. Student-reported decreases in in-person and cyber victimization and in relational and cyber aggression were also found, with the effects emerging at different points in the intervention. We found differences in intervention effects based on the specific subtypes of aggression and victimization which highlights the need for a more fine-grained assessment of OBPP effects in lieu of using only composite measures. The delayed effects for some subtypes of aggression and victimization showed the need for patience in the implementation of the OBPP and the determination of its effects in U.S. middle school settings.

References

Brand, S., Felner, R., Shim, M., Seitsinger, A., & Dumas, T. (2003). Middle school improvement and reform: Development and validation of a school-level assessment of climate, culture pluralism, and school safety. *Educational Psychology*, 95(3)*,* 570-588. doi:10.1047/00220663.95.3.570

Coyle, H. E. (2008). School culture benchmarks: Bridges and barriers to successful bullying prevention program implementation. *Journal of School Violence, 7*(2), 105-122. doi:10.1300/J202v07n02_07

Farrell, A. D., Goncy, E., Sullivan, T. N., & Thompson, E. (2018). Evaluation of the Problem Behavior Frequency Scale-Teacher Report Form for assessing behavior in a sample of urban adolescence. *Psychological Assessment, 30*(10), 1277-1291. doi:10.1037/pas0000571

Farrell, A. D., Sullivan, T. N., Goncy, E., & Le, A. (2016). Assessment of adolescents' victimization, aggression, and problem behaviors: Evaluation of the Problem Behavior Frequency Scale. *Psychological Assessment, 28*(6), 702-714. doi:10.1037/pas0000225

Farrell, A. D., Thompson, E., & Mehari, K. (2017). Dimensions of peer influences and their relationship to adolescents' aggression, other problem behaviors, and prosocial behavior. *Journal of Youth and Adolescence, 46,* 1351-1369. doi:10.1007/s10964-016-0601

Henry, D. B., Farrell, A. D., Schoeny, M. E., Tolan, P., & Dymnicki, A. (2011). Influence of school-level variables on aggression and associated attitudes of middle school students. *Journal of School Psychology, 49*(5), 481-503. doi:10.1016/j.jsp.2011.04.007.

Limber, S. P., Nation, M., Tracy, A. F., Melton, G. B., & Flerx, V. (2004). Implementation of the Olweus Bullying Prevention programme in the Southeastern United States. In P. K. Smith, D. Pepler, and K. Rigby (Eds.) *Bullying in Schools: How Successful Can Interventions Be?* (pp. 55-79). New York: Cambridge University Press.

Masho, S. W., Schoeny, M. E., Webster, D., & Sigel, E. (2016). Outcomes, data, and indicators of violence at the community level. *Journal of Primary Prevention, 37*(2), 121-139.

doi:10.1007/s10935-016-0429-4.

Miles, M. B., & Huberman, A. M. (1994). Qualitative data analysis: An expanded sourcebook. Thousand

Oaks, CA: Sage.

Strauss, A. L., & Corbin, J. M. (1998). Basics of qualitative research: Techniques and procedures for

developing grounded theory. Thousand Oaks, CA: Sage.

Table 1. *Intercepts and effect size estimates (standard errors) from multilevel models predicting teacher outcome ratings of students' behavior across project waves*

Effect	Physical Aggression	Verbal Aggression	Relational Aggression	Physical Victimization	Verbal Victimization	Relational Victimization
Intercept	1.38(0.02)	1.60(0.03)	1.34(0.02)	1.32(0.02)	1.59(0.03)	1.33(0.02)
School A	-0.01(0.05)	0.04(0.05)	0.06(0.05)	-0.04(0.05)	-0.04(0.05)	-0.02(0.05)
School B	0.13(0.05)**	0.16(0.05)***	0.19(0.05)***	0.05(0.05)	0.04(0.05)	0.04(0.04)
School year	0.06(0.01)***	0.04(0.01)***	0.05(0.01)***	0.04(0.01)***	0.02(0.01)	0.03(0.01)**
Season	0.23(0.05)***	0.27(0.04)***	0.27(0.05)****	0.18(0.05)***	0.26(0.05)***	0.23(0.05)***
IntYr 1	-0.24(0.06)***	-0.13(0.05)*	-0.20(0.06)***	-0.16(0.06)**	-0.06(0.06)	-0.09(0.06)
IntYr 2	-0.19(0.07)**	-0.21(0.06)***	-0.30(0.07)***	-0.20(0.07)**	-0.27(0.07)***	-0.29(0.07)***
IntYr 3+	-0.37(0.07)***	-0.30(0.07)***	-0.39(0.08)***	-0.31(0.08)***	-0.26(0.08)***	-0.33(0.08)***
Season x IntYr 1	-0.20(0.09)*	-0.13(0.08)	-0.16(0.09)	-0.07(0.09)	-0.05(0.09)	-0.06(0.1)
Season x IntYr 2	-0.06(0.08)	-0.15(0.07)*	-0.13(0.08)	0.04(0.08)	-0.18(0.09)*	-0.10(0.09)
Season x IntYr 3+	-0.12(0.06)*	-0.16(0.05)**	-0.13(0.06)*	-0.1(0.06)	-0.13(0.06)*	-0.12(0.06)

Note. IntYr = Intervention Year. Values are intercepts and effect size estimates (*d*-coefficients) with standard errors in parentheses. School A and School B effects represent baseline differences between schools A and B relative to School C. School year represents linear changes across the school years controlling for intervention effects. Season represents linear change within each school year. IntYr 1 to IntYr 3+ represent changes in each year of implementing the intervention relative to the baseline.

p < .05. **p* < .01. ***p* < .001.

Table 2. *Coefficients from multilevel models predicting students' ratings of their behavior across project waves*

Effect	Physical Aggression	Relational Aggression	Cyber Aggression	Victimization	Cyber Victimization
Intercept	1.44(0.02)	1.23(0.02)	1.08(0.01)	1.35(0.02)	1.05(0.01)
School A	0.01(0.05)	0.04(0.05)	0.09(0.05)	0.10(0.05)*	0.04(0.02)
School B	0.05(0.05)	0.01(0.04)	0.12(0.04)	0.06(0.05)	0.04(0.02)
School year	-0.02(0.01)	-0.03(0.01)*	0.03(0.01)**	-0.03(0.01)***	0.02(0.01)**
Season	0.05(0.04)	-0.04(0.05)	0.1(0.05)*	-0.06(0.05)	0.01(0.02)
Summer	-0.24(0.06)***	-0.16(0.06)**	-0.21(0.06)***	-0.15(0.06)**	-0.05(0.03)
IntYr 1	-0.04(0.06)	-0.07(0.06)	-0.1(0.06)	-0.17(0.06)**	-0.04(0.03)
IntYr 2	-0.02(0.07)	-0.06(0.07)	-0.13(0.07)	-0.18(0.07)**	-0.08(0.03)*
IntYr 3+	-0.09(0.07)	-0.16(0.07)*	-0.23(0.07)**	-0.28(0.07)***	-0.10(0.04)**
Season x IntYr 1	0.03(0.08)	-0.07(0.09)	-0.08(0.09)	0.00(0.09)	0.02(0.05)
Season x IntYr 2	0.02(0.08)	0.03(0.08)	-0.09(0.09)	-0.01(0.08)	-0.03(0.04)
Season x IntYr 3+	-0.11(0.06)	-0.10(0.06)	-0.11(0.06)	-0.08(0.06)	0.01(0.03)
Summer x IntYr 1	0.10(0.10)	0.17(0.11)	0.14(0.11)	0.15(0.10)	0.03(0.06)
Summer x IntYr 2	0.06(0.10)	0.00(0.11)	0.03(0.11)	0.07(0.10)	0.07(0.06)
Summer x IntYr 3+	0.19(0.07)**	0.21(0.08)**	0.2(0.08)*	0.17(0.07)*	0.07(0.04)

Note. IntYr = Intervention Year. Values are intercepts and effect size estimates (*d*-coefficients) with standard errors in parentheses. School A and School B effects represent baseline differences between schools A and B relative to School C. School year represents linear changes across the school years controlling for intervention effects. Season represents linear change within each school year. Intervention Year 1 to Intervention Year > 2 represent changes in each year of implementing the intervention relative to the baseline.

*p < .05. **p < .01. ***p < .001.

Table 3. *Qualitative semi-structured interview questions for focus groups conducted in summer 2015*

Questions	Participants
Individual-Level Intervention	
What are barriers that make the referral process more difficult to follow?	Administrators
What are supports that make the referral process easier to follow?	Administrators
What are barriers that make it harder to implement the negative and positive consequences for students who engage in bullying or prosocial behavior, respectively?	Administrators and School Staff
What are supports that make it easier to implement the negative and positive consequences for students who engage in bullying or prosocial behavior, respectively?	Administrators and School Staff
What has been done to address barriers to implementing the negative and prosocial consequences and what are lessons learned?	Administrators
How have you addressed barriers to conducting the "on-the-spot" interventions and what are lessons learned?	BPCC Members and School Staff
What are barriers that make it harder to communicate OBPP activities and related policies and procedures about bullying behaviors to staff?	BPCC Members
Classroom-Level Intervention	
What are barriers that make it more difficult to implement the class meetings?	School Staff
What are supports that make it easier to implement the class meetings?	School Staff
How have you addressed barriers to conducting the class meetings and what are lessons learned?	School Staff
What are barriers that would make the staff discussion groups harder to conduct?	Administrators and BPCC Members
School-Level Intervention	
What are barriers that make it more difficult to train all staff in OBPP?	BPCC Members
What are supports that make it easier to train all staff in OBPP?	BPCC Members
What are barriers that make it harder to address "hot spots" at your school?	Administrators
What are supports that make it easier to address "hot spots" at your school?	Administrators

Table 4. *Barriers to OBPP implementation and suggestions to address barriers based on focus groups conducted in summer 2015*

Barriers				
Theme/*Subtheme*	Barrier	Addressing Barrier	Participant	
			Adm. and BPCC (*n* = 21)	School Staff (*n* = 18)
Time for OBPP implementation				
Limited time	Refers to perceived limitations in: (a) the time available for the OBPP implementation, generally, (b) the time allocated for the bullying prevention specialist at each school, and (c) the time available for staff discussions.	Suggestions included: (a) pre-planning to better incorporate OBPP activities into the school calendar, (b) having a full-time bullying prevention specialist at each school, and (c) having a separate time, that is not part of another meeting, to talk about staff discussions.	10%	0%
	(a) Adm./BPCC Member: *"Just time [for OBPP implementation]."*	(a) Adm./BPCC Member: *"It would have to be something to start the planning process now to interweave it...in the school calendar."*		
Multiple responsibilities/tasks	Refers to individuals having: (a) multiple school responsibilities and tasks that can conflict with meeting attendance, (b) competing priorities for staff discussions when incorporated as part of other meetings, and (c) competing priorities in job responsibilities that can make it more challenging to implement OBPP components.	Suggestions included: (a) email updates about BPCC activities, (b) creating a separate time for staff discussions instead of incorporating that time into other meetings, and (c) no suggestions to address this barrier were mentioned.	14%	0%
	(c) Adm./BPCC Member: *"A teacher sees an incident, do they have the time needed to go with the intervention or am I supposed to get my class started and them come back to the intervention or clear the hallway and then do*	(c) No suggestions to address this barrier were mentioned.		

	the intervention, and it's just you know how to prioritize."			
Scheduling issues	Refers to scheduling challenges that emerged when attempting to identify meeting times based on the need to coordinate: (a) meetings and schedules for individuals who serve on multiple committees, and (b) overlapping after-school commitments (e.g., student tutoring and meetings occurring at the same time). (a) Adm./BPCC Member: *"A lot of individuals who are on these committees in our school serve on other committees...the same people tend to [be on] multiple [committees] or serving multiple roles, and so, people get stretched thin."*	Suggestions included: (a) the assignment of designated days for specific after-school meetings, and (b) the coordination of a set schedule for meetings with administration looking at the school and district calendars. (a) Adm./BPCC Member*: "If it is possible, the school may designate certain days for certain after-school meetings...when you have several people on different committees."*	10%	0%
Time sensitive demands	Refers to the challenges in implementing OBPP components (e.g., class meetings and staff discussions) based on time sensitive tasks such as preparation for SOL testing. Adm./BPCC Member: *"People are still looking at hot spots and things of that nature, but their major focus right now is SOL testing."*	Suggestions included: (a) identifying a faculty leader for staff discussions who can prioritize this aspect of OBPP across the year, and (b) having a set schedule for BPCC meetings across the year. (b) Adm./BPCC Member: *"Maybe next year, we can implement it [BPCC meetings] as part of our regular meetings."*	10%	0%
Staffing challenges				
Part-time availability of the bullying prevention specialist	Refers to the challenge presented by bullying prevention specialist's need to split time across the two program schools.	Suggested idea: Allocate more time for the bullying prevention specialist.	19%	0%

	Adm./BPCC Member: *"Days that [the bullying prevention specialist] isn't here is a barrier for us. It, it would be nice if he was here full time, When he's not here, you definitely see a difference in how [school staff] are dealing with things...It really benefits us as a whole, really, the process of our school, the school, when he's here on a full-time basis"*	Adm./BPCC Member: *"It would be nice if the bullying prevention specialist was here on a daily basis that would, help expedite the process even quicker."*		
Limited school staff control of situations involving buses	Refers to: (a) sometimes having less supervision on the bus than desired, and (b) the school not having control over issues that happen on the bus. Adm./BPCC Member: *"With the bus, there is a little bit of a barrier, because...[we] inform transportation and they deal with how they're going to staff monitors."*	Suggested idea: A method that had been adopted in the past was to have security officers or personnel monitor the bus stops when problems escalated but more support is needed. Adm./BPCC Member: *"I can say that when this happens, at the bus stops and things like that, transportation supervisor may go out there to the stop and warn it. They've had a security go to a couple stops a couple times."*	14%	0%
Challenges with implementation				
Not all students are engaged during class meetings	Refers to the challenges of not having all students engaged during class meetings. School staff: *"On several occasions, I ran into it when it was time for me to actually present...some students were engaged, some students weren't. about probably 90% but the other 10%, it was a different*	Suggestions included: (a) having a lesson or plan for the very first day the students come into the building in the Fall, and (b) give students a preview of lessons that will be presented. Adm./BPCC Member: *"Just to let students know what is coming up, and hey we want you to participate...the fact that they are asked in the beginning...I think that would help."*	5%	6%

29

	conversation, which sometimes put us off topic."			
Some students found the journal prompts repetitive or not engaging	Refers to feedback that some students found the journal writing prompts repetitive or not engaging.	Suggestions included: (a) rotating the journal prompts with other activities, (b) using discussion after the journal prompt to take it to another level, (c) using technology resources such video clips, and (d) using discussion after the journal prompts to debrief on the topic covered.	0%	28%
	School staff: *"I did journal writing with my first period class...it's full of eighth graders...they didn't like the frequency of the journal writings. They said they didn't mind the journal prompt but to do it every week they got kind of like, 'come on.'"*	(b) School staff: *"If there could be like some type of, you know, transition or something to kinda take the discussion to another level...something to help keep the conversation going."*		
Some discussion formats didn't work as well as others	Refers to the difficulties of having discussions in a large group format.	A suggestion was to have more opportunities for students to get into groups to encourage discussion.	0%	6%
	School staff: *"I feel like the students have a difficult time when the lesson doesn't allow them, to get in small groups, it just, back and forth conversation."*	School staff: *"[Students] tend to be more expressive when they get into groups and have to illustrate something or write something...a few sentences concerning whatever the topic may be."*		

Difficulties in delivering positive consequences	Refers to difficulties the schools experienced with their plan for delivery of positive consequences when students were less interested in the options. Adm./BPCC Member: *"Well, basically, they offered...school supplies and other things [as rewards for positive consequences]. This year,...strictly school supplies. So they changed the interest...totally went downhill."*	No suggestions were mentioned.	10%	0%
Communication challenges				
Need to complete the feedback loop	Refers to the challenge of communicating with school staff who were involved in referrals for bullying behavior incidents about the outcome of the referral. (a) Adm./BPCC Member: *"I think the mechanism of it [referrals] works perfectly. I think the form works, it's just...I don't always know as the administrator, so I don't think we've completely closed the cycle of communication."*	One suggestion to address this barrier was more follow-up meetings to review the outcome data on referrals for bulling behaviors. (a) Adm./BPCC Member: *"A quarterly or monthly review where we sit down and go over the data and review all the information to kind of close the loop."*	5%	6%

Not everyone understanding bullying issues	Refers to the need to better understand bullying incidents as: (a) misreading a situation as bullying can take time away from addressing actual bullying situations, and (b) a teacher may still perceive bullying behaviors (e.g., relational aggression) as kids just being kids. (b) Adm./BPCC Member - *"When they have seen what could potentially be a bullying situation... saying as their justification as to why they didn't report it, saying oh that's just kids being kids, or this is how kids figure out their social hierarchy."*	Suggestions included: (a) that teachers need to report situations and consult with others when they are unsure whether a conflict between students is bullying behavior, and (b) to make sure that everyone is aware of what is and is not bullying. (b) Adm./BPCC Member: *"So, I just think that, you know, everybody...needs to be clear on what bullying is."*	10%	0%
Reluctance of some students to report bullying behavior incidents	Refers to some students being reluctant to tell school staff about incidents because of concern about: (a) being perceived as a snitch, (b) the peer pressure and negative reaction of other students in a culture of not snitching, and (c) students feeling they always have to be tough. School staff: *"Peer pressure can create barriers whereby students are being viewed as instead of being a good citizen, being viewed as being a snitch or suck-up or something of that nature, So, there are some students who don't want the positive attention because they are going to be viewed in this manner."*	Suggestions included: (a) reversing the question to them, as if, their little brother or sister was being picked on, and would you want them to tell you, or (b) to help students frame telling someone about an incident as being brave. School staff: *"I think it needs to come in a different way...I try to make it seem like you know, somebody was, like a whistle blower, in a corporate world or something like that. Your the one that actually are brave and stand up, and students tend to relate to those that are strong."*	5%	17%
Parent actions may escalate conflict between students	Refers to a parent's actions that may escalate student conflict, for example, parents getting	Suggested ideas were to: (a) include everybody in the education process for OBPP – staff, parents, community workers, etc., and (b) provide	10%	0%

	involved in incidents on social media by going on-line can make the incident worse.	opportunities for parent education about how students use social media and ways to guide their children in using this platform.		
	Adm./BPCC Member: *"It is something has already been said on Kick or Facebook. And they come in and they want to carry it on here...And some parents have gotten online and joined the conversations, already commenting back to the other children about what has been said to their child."*	Adm./BPCC Member: *"We need to educate parents. Because of the root of much of the bullying comes from social media. And so we need to let parents know that, you know, to nip situations like this, we need to help them do that at home."*		

Note: The percentages for the participant column reflect the number of participants who mentioned barriers and/or ways of addressing barriers.

Table 5. *Supports that facilitated the OBPP implementation and suggested support based on focus groups conducted in summer 2015*

Supports				
Themes/*Subthemes*	Definition	Supports	Participants	
			Adm. and BPCC *n* = 21	School Staff *n* = 18
Clear system for addressing bullying behavior referrals	Refers to: (a) the provision of a clear protocol which outlined the process of addressing potential bullying behavior incidents; (b) the provision of materials and a consistent structure to facilitate their use; (c) and acknowledgements that staff members were effective in following the protocol.	Adm./BPCC Member: *"It's always in a specific location, so anyone who needed that form didn't necessarily have to go through uh administrator, or even a secretary; it's in a specific spot. So having a designated spot for it,"*	10%	6%
OBPP endorsement and buy-in		.		
Teacher endorsement/buy-in	Refers to teachers' support of the program as evidenced by their willingness to serve as initial referral recipients to students and their use of learned strategies in the subsequent year.	Adm./BPCC Member- *" I think. Were all of us on the team last year? (People say yes). Yeah. Um, so we kind of already had a plan with how to do the staff trainings this year, I think, which made it easier. We just kind of followed the model that we did then."*	10%	0%
Student endorsement/buy-in	Refers to students' support of the program as evidenced by their willingness to report bullying incidents to their teachers.	Adm./BPCC Member: *"...and the children then being comfortable enough to trust the adults to say "hey, something's going on in there, you better watch out for this". we saw an increase in that kind of communication.."*	5%	0%
A focus on positive behavior	Refers to a focus on positive behavior through attention and intangible and tangible incentives to recognize positive student behavior.	School staff: *"...we walk and talk you know, we smile, we give positive comments, we, it's, it's effective, but it's not one hundred percent."*	10%	33%

Training and resources				
Training was helpful	Refers to the perceived value of the training process to facilitate OBPP implementation among school staff and authorities.	Adm./BPCC Member*: "and then having our own staff people trained to handle the situations...I think that those are all things that helped."*	10%	0%
Providing Resources	Refers to the acknowledgement that resources facilitated program implementation.	School staff: *"Yes and um the...[class meetings] are well put together and uh it does help you, you know, stay on task and stay focused on the topics."*	5%	17%
Meeting context and staff presence				
Staff discussions were effective and efficient	Refers to team meetings perceived to be effective and efficient.	Adm./BPCC Member: *"It was pretty good, wasn't all the [meeting] time."*	14%	0%
Presence of BPCC members was helpful for staff discussions.	Refers to perceptions that the presence of a BPCC member contributed to the effectiveness of staff discussions.	Adm./BPCC Member: *"But our grade-level meetings. So one member of the BBCC was a part of each of the teams, that met."*	10%	0%
Identifying the right person to lead staff discussion meetings	Refers to suggested methods of increasing the effective implementation of staff meetings by identifying the right person to lead them.	Adm./BPCC Member*: "I think you have to have the right person leading the session, like they said, if someone, you know. that doesn't instill a lot of conversation, can't facilitate that type of conversation is trying to lead that meeting, It's going to just not go anywhere and will be over in five minutes, but if it's, you know if it's someone that's open to facilitating a discussion and concerned about it, I think it could work"*	5%	0%
Bullying Prevention Specialist updating referrals at BPCC meetings.	Refers to the desire of BPCC members to receive periodic updates from the Bullying Prevention Specialist about pending referrals at BPCC meetings.	Adm./BPCC Member: *"Um, maybe [the Bullying Prevention Specialist] could be present to discuss some of the things that have come up with um, the referrals and whether he's been seeing successes"*	10%	6%

Suggested Supports				
Type, frequency, and content of OBPP trainings				
Hold small-scale training sessions.	Refers to the desire to have small-scale training sessions as opposed to school-wide training sessions to increase efficiency.	Adm./BPCC Member: *"Maybe by breaking it down by grade level um you can kind of have a better conversation"*	5%	0%
Organize refresher training sessions.	Refers to the perceived benefit of refresher trainings and helpful reminders during these trainings to support the school staff to consistently implement the OBPP.	Adm./BPCC Member: *"As far as, the uh, implementation...if we had refresher talks, let's say, during staff meetings, I think that would help. Just like we do when we have our team meetings, we talk about, you know, the prompts and things to that effect"*	29%	0%
Make use of instructional videos during refresher training sessions.	Refers to requests made to utilize videos when conducting the proposed refresher training sessions to facilitate comprehension.	Adm./BPCC Member: *"That might be helpful to us, if we had some really good videos that we could use for that kind of, of training."*	5%	0%
Include students in the refresher sessions.	Refers to the perceived benefit of conducting refresher training with teachers and their students together.	Adm./BPCC Member*: "So, why not have a, you know, sixth grade refresher with the students, with the teachers, so everybody feels like, okay, everyone's expected to be doing this, everyone."*	5%	0%
Creatively develop activities that are beneficial/relevant for students and parents				
Develop opportunities to highlight student creativity and voice	Refers to creating opportunities for students to use their creativity as part of the OBPP implementation.	Adm./BPCC Member: *"[Students] love making posters. They make up slogans, and so we need to think along those terms and think what else they can do creatively."*	24%	0%

Identify activities that would be most relevant for parents to communicate the importance of the OBPP to parents.	Refers to making program events more interactive and relevant for parents to communicate the importance of the OBPP to parents.	Adm./BPCC Member: *"I think that in any kind of program if you can encourage dialogue or so that the parents are actually involved and not just sitting there listening to you talking...it's much more involving."*	24%	0%

Table 6. *Qualitative semi-structured interview questions for focus groups and interviews conducted in 2017-2018*

Question	Participants
General supports for OBPP	
What are things that supported the implementation of OBPP this year?	Administrators
What are things that supported or made it easier to implement the class meetings or OBPP this year?	Teachers
Supports for administrators in implementing OBPP	
How did others, e.g. teachers, school staff, support you in implementing the OBPP this year?	Administrators
How did the Bullying Prevention Specialist support you in implementing the OBPP this year?	Administrators
Supports for BPCC members in implementing OBPP	
How did administrators support the BPCC in implementing the OBPP this year?	BPCC members
How did others, e.g. teachers, school staff, support the BPCC in implementing the OBPP this year?	BPCC members
What are things that supported the BPCC in the implementation of OBPP this year?	BPCC members
Supports for teachers in implementing OBPP class meetings	
How did administrators support you in implementing the class meetings and the OBPP this year?	Teachers
How did others, e.g. teachers, school staff, support you in implementing the class meetings and the OBPP this year?	Teachers
What are things that supported or made it easier to implement the class meetings or OBPP this year?	Teachers
Barriers for OBPP Implementation	
What are things that were barriers or things that made it harder to implement the class meetings and the OBPP this year?	Year 2 – Focus groups
What are things that were barriers or things that made it harder to implement the OBPP this year?	Year 2 – BPCC & Administrators
Barriers for OBPP Implementation	
What are barriers that make it more difficult to partner with parents?	Year 2 – BPCC & Administrators

Table 7. *Barriers that hindered the implementation of OBPP for the 2017-2018 school year*

Themes/subthemes	Definition	Examples	Adm. and BPCC (*n* = 16)	School Staff (*n* = 26)
Barriers				
Time for OBPP implementation				
Time	Refers to challenges in finding time to implement OBPP along with other job responsibilities and the need for time during the school day to prepare and implement OBPP activities.	Adm./BPCC Member: *"I am working on this committee...I need time to look over stuff or collaborate with someone else...during the day, not in the afternoon once we're already tired and drained, and kinda ready to go. I guess to sum it up, more planning of this organization's committee needs to be during the school day."*	25%	0%
Scheduling constraints	Refers to the difficulty of finding common times to schedule meetings, scheduling conflicts that arise after meetings are set, the impact of changing scheduled meetings to another time, and the importance of timing for meetings (e.g., some teachers may feel burned out at the end of the day and some students may have more difficulty concentrating at specific times of the day such as around lunchtime).	Adm./BPCC Member: *"The hardest part is just scheduling, I mean, I think that's just common things about just scheduling and timing."*	25%	12%
Commitments				
Prioritization of OBPP activities	Refers to need to prioritize class content and preparation for standardized testing over OBPP	School Staff: *"I'm an English teacher. And so a lot of times, you know I have a reading and writing SOL. So you know that was a big issue for me*	19%	4%

	activities, especially for state testing (i.e., the standards of learning).	*because while the rest of the team was going over lessons in February, I was preparing students for their March SOL...So I felt like sometimes in the middle of the year, I wasn't able to go as in-depth with the lessons, like I wanted to you know."*		
Attitudes, mindset, and buy-in	Refers to perceptions that some school staff and students did not support OBPP activities as strongly as others, as shown through their attitudes, mindset, and/or buy-in, or that their support for OBPP fluctuated from year to year.	Adm./BPCC Member: *"Some teachers looked at it as something else to do instead of the benefit. And how it may help the behaviors in their class."*	31%	19%
Challenges with consistency	Refers to challenges with consistency in implementing OBPP at times and the fluctuations in the consistency of OBPP across the year.	Adm./BPCC Member: *"Outside of the Monday classes and these big events, how do you continue enthusiasm and involvement...it's just – get to certain parts of the year and sadly it just sort of one more thing."*	13%	4%
Difficulty in identifying bullying incidents	Refers to difficulties in distinguishing the specific roles of individuals in potential bullying behavior incidents and how to differentiate bullying from conflict.	School staff: *"Well, I will say one barrier for me is maybe if another teacher's perspective of the situation is different...I might say...he is bullying him every day during first block, you know, he tends to turn around and constantly say things to him that are disrespectful and I've heard it and other teachers might say; you know what, they're just playing."*	6%	8%
School context, climate, and structural challenges				
High teacher turnover and limited staff	Refers to the high percentage of teachers who left the school throughout the program implementation, inconsistent teacher attendance, shortage of administrative staff, and the need of students proportional to the number of staff.	Adm./BPCC Member: *"I think attendance by teachers was one situation. If a teacher was absent and I had their class when I had to do...my class meeting, that made things a little challenging."*	31%	4%

40

		School staff: *"The staff to student ratio is too skewed, there is not enough staff to be able to handle a situation...it makes it difficult."*		
Average class size/ Number of students	Refers to the large class sizes that made some aspects of the class meetings (e.g., forming a circle) more difficult.	School staff: *"Just large classes...I have 31 in my class and [another teacher] has 36...and trying to do class meetings. And let everybody be heard, I had – I mean I had help...but still trying to let everybody get heard...that not even two minutes a kid."*	0%	12%
Peer and student dynamics within the classroom and school context	Refers to the difficulty of intervening in bullying behavior incidents when peers are together and how a few uncooperative students could negatively impact classroom meeting delivery.	School staff: *"You know I can sit here and try to make this person apologize to this person but there's not gonna be any sincerity in it at all...just those few students that, you know in my class there's like three or four that just made it, really difficult."*	0%	12%
Unanticipated changes and events				
Unanticipated events that affected OBPP programming and/or schedule	Refers to challenges with maintaining the school schedule and OBPP activities in the face of unanticipated events such as bad weather or lockdowns.	Adm./BPCC Member: *"Whenever you have a schedule change, whenever weather or bomb threats or lockdowns...you know between weather and other things...there's a bunch of things that happen that you can't predict."*	25%	0%
Changes in the student demographics	Refers to rapidly shifting demographics in the school district with an increase in Latinx students.	Adm./BPCC Member: *"The kids don't understand each other...I wish we could've revamped the program once we saw this happening...we should talk more about awareness and...just culturally trying to relate to one another."*	13%	0%
Social media influences that can exacerbate	Refers to the role of social media in leading to bullying behavior incidents and challenges when	Adm./BPCC Member: *"The downside is that, you know, that engagement, that dialogue is being had in space [social media], you know, spills over into*	13%	0%

bullying behavior incidents	students are interacting with each other in an unmonitored space.	*the school...it here where we really, you know the physical interactions between students as a result of, you know, the dialog that's being had you know through social media"*		
Limited resources	Refers to money being a barrier to providing resources for the sustainability of OBPP	Adm./BPCC Member: *"I guess it comes down to funding, you know, how much money's available. But, I wish there was a way to do something that could bring that, that could...sustain the group as one."*	19%	0%

Table 8. *Supports that facilitated the implementation of OBPP for the 2017-2018 school year*

		Supports		
Themes/subthemes	Definition	Examples	Percentage of participants	
			Adm. and BPCC (*n* = 16)	School Staff (*n* = 26)
Endorsing OBPP				
Administrator prioritization of OBPP	Refers to administrator prioritization of OBPP through direct involvement in planning, incorporating OBPP into the master schedule and as part of leadership meetings, and making parents aware of OBPP.	School staff – "*Just endorsing it...making the parents aware of it.*" School staff – "*It [OBPP] is on the calendar. It's always on our communication log –the calendar.*" Adm./BPCC Member – "*It always starts with the leadership of the building, you can't really push much of any kind of agenda without the leader saying this is the expectation.*"	25%	15%
Presence	Refers to the presence and/or availability and accessibility of administrators, school staff, parents, research staff, and the BPS.	Adm./BPCC member – "*Parents were very supportive at times of meetings and discussion...coming to those meetings that we were having, family nights.*" Adm./BPCC member – "*Most teachers did a really good job about following through on lessons...we had a large [BPCC] committee of people to organize things and they showed up and did things- after hours and so.*" School staff – "*Their [administrators'] presence at any of the events being held by the program.*"	56%	19%
Involvement	Refers to administrator and school staffs' involvement in OBPP activities, ways that school staff and the Bullying Prevention Specialist involved	Adm./BPCC member – "*Administrator involvement and the coordinator, the teachers that are involved...they are ready, they are available, they're accessible. You can communicate with them.*"	94%	19%

	parents, and student involvement in OBPP.			
Commitment	Refers to administrator and school staff buy-in, commitment, and dedication to OBPP implementation. Some participants commented about how staff commitment to OBPP influenced student commitment.	Adm./BPCC Member – *"They see your energy, your excitement about it [class meetings], your love for it...an easy buy in for the students. And I think that creates that energy, that momentum and everything."* Adm./BPCC Member – "*The willingness of staff...to always keep Olweus as being an important part of what we do*."	56%	4%
Collaboration and roles				
Communication/ guidance	Refers to clear communication: (a) about roles and responsibilities related to OBPP, (b) between the research staff, school staff, and students, and guidance to teachers in conducting OBPP activities and reminders and support in keeping school staff on track.	Adm./BPCC Member – "*Another thing is communication...once we have the meeting, the minutes will be out there, your role will be out there, so the communication was effective and everybody was working with love.*"	19%	12%
Teamwork/ leadership	Refers to the leadership provided by administrators and the BPCC for the program, the teamwork and collaboration across organizational levels (e.g., school staff, BPCC, and administrators), and the teamwork within grade-level teams and the BPCC.	Adm./BPCC Member: "*The show didn't stop because one person didn't show up, um so you know, they were able to keep it going and just able to implement whatever ideas or whatever things that we were interested in. They were able to keep, keep it going.*"	38%	8%

Inter-teacher teamwork and collaboration	Refers to the ways in which teachers collaborated on the implementation of OBPP including proactively communicating with each other about student issues, communication that increased knowledge of class meeting topics, reminding each other of class meetings, partnering to teach some lessons (e.g., when a teacher was absent).	School staff: *"Things that are kind of new to me and I'm soaking it, and you know and building my knowledge base about...some of the teachers and constituents were able to enlighten me with some of the things that they did...so I thought that was helpful."*	0%	19%
Helpful intervention dynamics				
Flexibility in delivery and revisions made based on staff feedback	Refers to the ability of teachers to adapt the class meetings within the topic area which facilitated classroom dialogue, helped if parts of a topic were challenging to students, and kept students engaged in the meetings.	School staff: "*We were able to make it our own, and so that was very helpful...for example, if I felt it was going over their head a little bit.*"	0%	8%
Interactive nature of the meetings	Refers to the interactive components of the class meetings (e.g., hands-on activities).	School staff: "*I really did like the interactive component of you know playing jeopardy...there's a million different ways you could do that.*"	0%	12%
Teacher knowledge of program dynamics	Refers to increased teacher awareness of bullying behaviors and ability to skillfully deliver the intervention.	Adm./BPCC: "*They had to have an open eye, to see what's going on when you got students changing classes...that they could see things from a different light than what they're normally seeing.*"	13%	0

Fidelity				
Periodic check-ins	Refers to the periodic fidelity observations of class meetings conducted by the research staff	School staff: *"I think that the reminders that we received, like them coming around to check, periodically and coming in to observe us."*	0%	15%
Exit tickets	Refers to the student learning and involvement generated by the students completing exit tickets.	School staff: *"I like the exit tickets because it got them to summarize what they actually learned. Actually look back and see...was there an understanding about the topic?"*	0%	8%
Logistics				
Having a class meeting plan and supporting materials	Refers to the provision of the class meeting outlines and copies of materials (e.g., handouts) needed for each meeting.	School staff: *"In addition to the binder...I appreciated the pre-made copies. If there was any material [for the class meeting]...that was in my box Monday morning."*	13%	19%
Schedule for class and BPCC meetings	Refers to the regular monthly meetings for the BPCC and the proactive scheduling of class meetings in ways that were helpful for teachers.	School staff: "*One of the things that they made sure is that...we had the time to do it. The time in our schedule, our daily schedule to do it*."	38%	15%

Table 9. *Average yearly cost per school for the OBPP implementation including labor and material costs.*

Cost Category	Expected Costs[a]
Labor Costs for Education and Training per School	
Olweus consultant	$4,116.67
Administrator, BPCC Member, and All School Staff Time	$12,328.75
Total Labor Costs for Education and Training of Staff per School	$16,445.42
Labor Costs for Program Implementation per School	
Administrator, BPCC Member, and School Staff Time	$12,592.68
Class Meetings (Teacher time)	$16,591.17
Student Leadership Groups	$1,535.34
Olweus Bullying Questionnaire Administration (Teacher time)	$741.41
Total Labor Costs for Program Implementation per School	$31,460.60
Material Costs for Education, Training, and Program Implementation per School	
Olweus materials	$3,320.96
Olweus Bullying Questionnaire Analysis and Reports	$176.43
Total Material Costs for Education, Training & Program Implementation per School	$3,497.39
Total Cost Per School	**$51,403.41**
Bullying Prevention Specialist	$38,878.89
Total Cost Per School with Bullying Prevention Specialist	$90,282.30

Note: [a]Expected costs represent an average of the expected costs for 2016, 2017, and 2018.

Table 10. *Unstandardized parameter estimates for each victimization and aggression variable.*

	Unstandardized coefficients			Per student x 9 months			Per school		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Physical Aggression Scale – student report	-0.02	-0.01	-0.05	-2.0	-0.9	-4.3	-977	-462	-2150
Relational Aggression Scale – student report	-0.02	-0.02	-0.06*	-2.1	-1.9	-5.0*	-1042	-952	-2486*
Cyber Aggression Scale – student report	-0.03	-0.04	-0.07**	-2.8	-3.3	-6.1**	-1383	-1672	-3045**
In-Person Total Victimization Scale – student report	-0.07**	-0.07**	-0.12***	-18.8**	-20.0**	-31.2***	-9408**	-10017**	-15609***
Cyber Victimization Scale – student report	-0.02	-0.04*	-0.05**	-1.9	-3.5*	-4.5**	-932	-1773*	-2255**
Physical Aggression scale – teacher report	-0.13***	-0.11**	-0.20***	-12.1***	-9.5**	-18.2***	-6038***	-4736**	-9091***
Verbal Aggression scale – teacher report	-0.09*	-0.14***	-0.21***	-11.1*	-18.2***	-26.2***	-5531*	-9095***	-13084***
Relational Aggression scale – teacher report	-0.10***	-0.15***	-0.20***	-9.0***	-13.9***	-17.6***	-4481***	-6928***	-8797***
Physical Victimization scale – teacher report	-0.07**	-0.09**	-0.14***	-6.7**	-8.0**	-12.8***	-3334**	-4006**	-6403***
Verbal Victimization scale – teacher report	-0.03	-0.16***	-0.16***	-3.6	-17.8***	-17.0***	-1807	-8888***	-8519***
Relational Victimization scale – teacher report	-0.04	-0.13***	-0.14***	-3.8	-11.6***	-13.0***	-1884	-5793***	-6495***

Note: The number of averted events are reported in the last three columns and based on self-report and teacher report of student behavior for each of the listed subtypes of aggression and victimization. For the student-reported data, an aggregate of all the in-person victimization items was supported based on the factor structure for victimization among adolescents (Farrell et al., 2016).

Table 11. *Estimated cost of aggressive or victimization incidents averted based on the OBPP implementation.*

Variable	Averted Events	Cost/Event Averted With BPS	Cost/Event Averted Without BPS
Year 1 Implementation			
Victimization –student-report (in-person)	9,408	$9.60	$5.46
Victimization –teacher-report (physical)	3,334	$27.08	$15.42
Aggression – teacher-report (physical, verbal, and relational)	16,050	$5.63	$3.20
Year 2 Implementation			
Victimization – student-report (in-person and cyber)	11,790	$7.66	$4.36
Victimization – teacher-report (physical, verbal, and relational)	18,687	$4.83	$2.75
Aggression – teacher-report (physical, verbal, and relational)	20,759	$4.34	$2.48
Year 3+ Implementation			
Victimization – student-report (in-person and cyber)	17,864	$5.05	$2.88
Victimization – teacher-report (physical, verbal, and relational)	21,417	$4.22	$2.40
Aggression – student-report (relational and cyber)	5,531	$16.32	$9.29
Aggression – teacher-report (physical, verbal, and relational)	30,972	$2.91	$1.66