Women's and Children's Health Policy Center
Johns Hopkins University

Strengthen the Evidence for Maternal and Child Health Programs

National Performance Measure 9 Bullying Evidence Review

February 2017

Yu-Hsuan Lai, MSPH
Stephanie Garcia, MPH
Donna Strobino, PhD
Holly Grason, MA
Emily Payne
Celia Karp
Cynthia Minkovitz, MD, MPP

Table of Contents

EXECUTIVE SUMMARY

Bullying is one of fifteen Maternal and Child Health National Performance Measures (NPMs) for the State Title V Block Grant program. The goal is to reduce the number of adolescents, ages 12-17 years, who are bullied. The purpose of this evidence review is to identify evidence-informed strategies that State Title V programs might consider implementing to address NPM 9 Bullying.

Thirty-eight peer reviewed and two gray literature sources met study inclusion criteria and informed the review. These sources discussed interventions that were targeted, universal, or a combination of targeted and universal. Targeted strategies were those tailored to youth at high risk for bullying victimization or perpetration. Universal strategies aimed to reduce risks for all youth. Examples of each type of intervention are shown below:

Nature of Intervention	Intervention Category	Example(s)
Targeted	Youth Only	Individual counseling; peer mentoring
Universal	Classroom Only	Curricular activities (classroom instruction, small group discussion); class rules
	School Only	School rules; media campaign; teacher/staff training
	Classroom + School	Curricular activities + school rules
Targeted + Universal	Youth + Classroom	Individual counseling + curricular activities
	Youth + School	Individual counseling + school rules
	Youth + Classroom + School	Individual counseling + curricular activities + school rules

Six key findings emerged:

1. Targeted interventions (i.e., those tailored to youth at risk for bullying) alone do not appear to be effective in reducing bullying.

2. Universal strategies such as those implemented in classrooms (e.g., classroom instruction or class rules) and/or schools (e.g., school rules or teacher/staff training) appear to be somewhat effective.

3. Combining classroom and school level interventions appears to be more effective than implementing either alone.

4. Multi-tiered approaches including both targeted and universal strategies may offer added benefits.

5. Peer-led programs such as peer mediation yield mixed results.

6. Zero-tolerance policies, group treatment for youth who bully, and short-term awareness raising events are not recommended.

The evidence review categorized anti-bullying interventions along an evidence continuum from *Evidence Against* (least favorable) to *Scientifically Rigorous* (most favorable). Zero-tolerance policies, group treatment for youth who bully, and short-term awareness raising events were assigned to the *Evidence Against* category. *Mixed Evidence* was identified for peer-led programs. *Emerging Evidence* was found for universal interventions carried out in classrooms or schools and interventions that combined targeted activities for youth at risk for bullying with universal interventions implemented in classrooms and schools. *Moderate Evidence* was identified for strategies implemented in both classrooms and schools. Although current research is limited, multicomponent school-wide programs including interventions on the youth, classroom, and school levels ultimately may offer the most effective approach to reducing bullying.

When designing anti-bullying interventions, it is critical to consider the specific school context. Caution should be taken in assuming the success of anti-bullying interventions as more rigorous evaluations are needed. Future efforts should focus on improving the adoption, implementation fidelity, and sustainability of evidence-based programs. Additionally, research is needed to assess the effectiveness of interventions targeting vulnerable subgroups of students. Anti-bullying interventions should be tailored to each target population and focus on subgroups at higher risk of being bullied.

ACKNOWLEDGEMENTS

This evidence review is based on research conducted by the Strengthen the Evidence for Maternal and Child Health Programs team under grant number U02MC28257 from the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS).

We are thankful to our colleagues Donna Hesson, MLS and Lori Rosman, MLS, AHIP at the Welch Medical Library who provided expertise in constructing search strategies. We also express gratitude to Sylvia Sosa, MSc, Reem Ghandour, DrPH, MPA, and Michael Kogan, PhD in the Office of Epidemiology and Research, Maternal and Child Health Bureau, HRSA. Furthermore, we extend thanks to Iliana White, MPH, CHES, CPH from AMCHP as well as Kirstin Hoagland, MPH (Colorado), Tomei Kuehl, MPA (Colorado), and Shelia Nelson, MPH, MSW (Maine) from State Title V programs for comments provided on earlier drafts. The findings and conclusions in this document are those of the authors, who are responsible for its contents; the findings and conclusions do not necessarily represent the view of HRSA or of individual reviewers.

INTRODUCTION

Strengthen the Evidence Base for Maternal and Child Health (MCH) Programs is a Health Resources and Services Administration (HRSA)-funded initiative that aims to support states in their development of evidence-based or evidence-informed strategies to promote the health and well-being of MCH populations in the United States. This initiative, carried out through a partnership among Johns Hopkins Women's and Children's Health Policy Center, the Association of Maternal and Child Health Programs, and Welch Library at Johns Hopkins, was undertaken to facilitate the transformation of the MCH Title V Block Grant Program.

A goal of the Strengthen the Evidence project is to conduct reviews that provide evidence of the effectiveness of possible strategies to address the National Performance Measures (NPMs) selected for the 5-year cycle of the Title V MCH Services Block Grant, beginning in fiscal year 2016. States are charged to select eight NPMs and incorporate evidence-based or evidence-informed strategies in order to achieve improvement for each NPM selected.

BACKGROUND

Bullying is one of the fifteen MCH National Performance Measures (NPMs). Sixteen states and jurisdictions selected NPM 9 Bullying, including Alaska, American Samoa, Arizona, California, Colorado, Delaware, District of Columbia, Florida, Georgia, Iowa, Kansas, Maine, Northern Mariana Islands, Oklahoma, Pennsylvania, and West Virginia.[1] The goal for NPM 9 is to reduce the number of adolescents—those 12 to 17 years of age—who are bullied.[2,3] Multiple surveys have been conducted to estimate the national prevalence of bullying in adolescents. The 2015 Youth Risk Behavior Surveillance System (YRBSS) estimated that 20.2% of grade 9-12 students in public and private schools reported being bullied on school property and 15.5% had been electronically bullied during the 12 months prior to the survey.[4] The 2013 School Crime

Supplement (SCS) to the National Crime Victimization Survey (NCVS) similarly estimated that 21.5% of students ages 12 through 18 reported being bullied at school; however, the SCS identified only 6.9% who reported being cyber-bullied.[5] Parent-reported prevalence of youth, ages 12-17 years, who sometimes, usually, or always bully others in the past month is lower at 14.2% with variability across states (7.8% in Vermont to 20.9% in District of Columbia) according to the 2011/12 National Survey of Children's Health.[6]

The uniform definition of bullying recently established by the Centers for Disease Control and Prevention and the Department of Education was used to frame and guide this review. This definition defines bullying as "any unwanted aggressive behavior(s) by another youth or group of youths who are not siblings or current dating partners that involves an observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated. Bullying may inflict harm or distress on the targeted youth including physical, psychological, social, or educational harm."[7] There are four main types of bullying:

1) Physical: the use of physical force by the perpetrator against the targeted youth (e.g., hitting, kicking, punching, spitting, tripping, or pushing);
2) Verbal: oral or written communication by the perpetrator against the targeted youth that causes him or her harm (e.g., mean taunting, calling the youth names, threatening or offensive written notes or hand gestures, inappropriate sexual comments, or threatening the youth verbally);
3) Relational: behaviors by a perpetrator designed to harm the reputation and relationships of the targeted youth (e.g., isolating the targeted youth, spreading rumors, publicly writing derogatory comments, or posting embarrassing images in a physical or electronic space without the target youth's permission or knowledge);

4) Damage to property: theft, alteration or damaging of the target youth's property by the perpetrator to cause harm (e.g., taking a youth's personal property and refusing to give it back, destroying a youth's property in their presence, or deleting personal electronic information).[7]

Due to the pervasive use of digital technologies among youth, cyberbullying has gained much attention. It is defined as the intentional and repeated harm inflicted through the use of computers, cell phones, or other electronic devices. To date, there is no agreement regarding whether cyberbullying is a form of bullying, or whether it is a distinct entity.[8]

Bullying is a serious public health concern as it has short- and long-term implications for psychological, psychosomatic, and academic functioning. Both youth who bully others and those who are bullied are at increased risk for psychological problems including depression, post-traumatic stress disorder, anxiety disorders, substance abuse, and suicidal ideation or behavior.[9-13] Bullied youth have a significantly higher risk for psychosomatic problems such as headache, backache, abdominal pain, poor appetite, sleeping problems, bed-wetting, skin problems, or dizziness compared to their non-bullied peers.[14,15] Bullying experiences also are associated with lower academic performance in elementary and middle schools.[16-19]

Childhood bullying is associated with adverse outcomes in adulthood in longitudinal studies. Bullying has been shown to be a major risk factor for impaired adulthood adaptation, including forming lasting relationships, integrating into work, and being economically independent.[20] Bullying victimization is also a risk factor for later depression.[21] Furthermore, when examining effects of childhood bullying on adult outcomes, victims, bullies, and bully-victims experience different types of risks. Bullied youth are at high risk for internalizing disorders. Youth who bully others appear to be at risk of externalizing disorders and criminality,

mainly violent crime and illicit drug misuse. Youth who bully others and are also bullied appear to be at risk of internalizing and externalizing disorders and criminality.[22]

Given the severity of the issue of bullying among children and youth, the National Academy of Sciences, Engineering, and Medicine (NAS) has recently released a report, *Preventing Bullying Through Science, Policy, and Practice*,[23] which reviewed the state of the science of bullying as well as provided recommendations for monitoring, preventing, and responding to bullying. In addition, numerous reviews examining anti-bullying interventions have been published previously.[24-28] These reviews included a broader range of ages, including children in pre-kindergarten, kindergarten, and/or elementary school. While these reviews allowed for evaluation of more studies, they are not specifically tailored toward synthesizing evidence to inform states' Title V MCH Block Grant efforts.

In supporting states and jurisdictions in their work related to bullying, this current review synthesizes evidence regarding anti-bullying strategies targeting secondary school students. Secondary school students were used as a proxy for adolescents 12 to 17 years of age (the target population of NPM 9) to allow for a broader and more generalizable population of interest to be included. To our knowledge, this is the first review that focuses on secondary school students. Since the effectiveness of anti-bullying programs varies by age,[29-31] previously published studies are not appropriate for identifying evidence-based and evidence-informed strategies specifically for improving NPM 9.

METHODS

Studies were identified for review by searching through the Cochrane Library, PubMed, ERIC, PsycINFO databases. Search strategies varied depending on the database due to differences in controlled vocabulary, indexing, and syntax. Table 1 provides detailed search

strategies used for each database. The same three concepts informed search strategies in each database: bullying, secondary school, and intervention/ evaluation. Two library specialists (informationists) were consulted in selecting appropriate databases and ensuring the adequacy of the search strategies. The following inclusion criteria were used:

1. The study evaluated the effectiveness of an intervention aimed to prevent or reduce bullying and clearly indicated that bullying was included as an outcome measure. The components of the intervention and the results were clearly described.
2. The measurement used to assess bullying in the study was consistent with the definition of bullying (type and frequency) used in this current review.
3. The intervention aimed to reduce or prevent bullying among students attending secondary schools. The operationalization of "secondary school" was adopted from a previously published study in Cochrane Reviews.[32] Secondary school students included middle, junior high, and high school students, or students of equivalent ages if grade was unspecified. Studies that also included pre-kindergarten, kindergarten, elementary school, and/or post-secondary school students were only included if intervention effects were reported separately by school division.
4. The study included students in the general population. Only two identified studies were focused on children with special health care needs. One study focused on adolescent males with anxiety disorders[*] and the other focused on middle school students with disabilities.[†] Due to a small number of studies and variation in the target population, these studies were excluded.

[*] Berry K, Hunt CJ. Evaluation of an intervention program for anxious adolescent boys who are bullied at school. *J Adolesc Health*. 2009;45(4):376-382.
[†] Espelage DL, Rose CA, Polanin JR. Social-emotional learning program to reduce bullying, fighting, and victimization among middle school students with disabilities. *Remedial Spec Educ*. 2015;36(5):299-311.

5. Bullying was measured using self-report questionnaires, peer ratings, teacher ratings, or observational data.
6. At a minimum, the study included a control and intervention group design or a pretest-posttest design to assess intervention effectiveness.
7. The study was conducted in the United States, Canada, Australia, or European countries.
8. The study was published in the English language.
9. The study was published in a peer-reviewed journal.

The results of each database were evaluated systematically for relevant studies. Duplicates were removed before beginning title screening. Each article's title was reviewed and if the title appeared related to the NPM, the abstract was then screened. If the abstract did not indicate whether the study met the inclusion criteria or the abstract was not available, full-text of the article was reviewed. All articles remaining after title and abstract screening were retrieved for detailed full-text review to assess their eligibility for inclusion. In addition, reference lists of relevant previously published review articles were reviewed to identify potential articles to be included in the current review.[24-28]

The lead author (YL) extracted data pertaining to the study characteristics (country, sample, and design); intervention (components, length, duration between pretest and posttest); instruments and measures for assessing bullying; and results. The study team met regularly to review interim extractions and resolve items in question. Interventions were characterized by target audience: youth, parent/family, classroom, school, and community. Data regarding results were extracted separately for victimization and perpetration. Bullying outcomes were assessed using traditional composite measures (a single measure of traditional bullying or any combination of physical, verbal, and relational bullying and damage to property) and for separate

measures of physical, verbal, relational bullying, damage to property, and cyberbullying.

Studies were categorized into groups based on rationale obtained from the NAS Report and results were compared accordingly. According to the report, the most likely effective bullying prevention programs are multicomponent school-wide programs that combine elements of universal and targeted strategies.[23] Therefore, the studies are categorized based on the youth, classroom, and school levels in the current review. Interventions on the youth level refer to targeted strategies that are directed at or tailored to youth at risk for engaging in bullying or being a target of bullying. Interventions on the classroom and school levels refer to universal strategies that are aimed at reducing risks for all youth within a school. Parent/family and community levels were disregarded in categorization. Based on this rationale, five groups were created—those with targeted only interventions ("Youth Only"), those with universal only interventions ("Classroom Only or School Only" and "Classroom + School"), and those with a combination of targeted and universal interventions ("Youth + Classroom or Youth + School" and "Youth + Classroom + School").

In addition to peer-reviewed literature, relevant gray literature sources were examined and included in the current review. The NAS Report, *Preventing Bullying Through Science, Policy, and Practice*[23] as well as stopbullying.gov,[33] the federal government website managed by the U.S. Department of Health and Human Services, were included as gray literature sources. The contents of these two sources were screened for identifying recommended and non-recommended strategies or approaches. However, it is important to note that both of these sources apply to all school-aged children and youth, whereas our review focused only on secondary school students/adolescents. Also, the NAS Report includes both evidence of bullying prevention as well as a broader literature on other youth-focused violence prevention, with

particular emphasis on potential issues overlapping with bullying[23]; our review focused exclusively on bullying prevention.

An evidence continuum was created to assess evidence-informed strategies, along with criteria for each category along the continuum. The Robert Wood Johnson *What Works for Health* evidence ratings were adapted to create our evidence continuum tailored toward the Strengthen the Evidence project.[34] The evidence rating categories include: *Evidence Against, Mixed Evidence, Emerging Evidence, Expert Opinion*, *Moderate Evidence*, and *Scientifically Rigorous*. Strategies that are characterized by *Emerging Evidence* or more favorable ratings are considered evidence-informed. Table 2 shows the detailed evidence rating criteria for both study type and study results for each rating.

Interventions identified through assessment of both peer-reviewed and gray literature were placed along the evidence continuum. Assignment to the continuum required that interventions or intervention categories be evaluated in 4 or more peer-reviewed studies or in the gray literature selected for the evidence review. However, interventions or intervention categories that were evaluated in 3 peer-reviewed studies with expert opinion from gray literature were also assigned an evidence rating and placed on the evidence continuum. Interventions or intervention categories that were evaluated in 3 peer-reviewed studies without expert opinion from gray literature were not assigned an evidence rating, nor placed on the evidence continuum. A team of three project members independently assigned ratings to the interventions or intervention categories. The members then compared their assessments and discrepancies were discussed by the full project team until a consensus was reached.

RESULTS

Search Results

Searches in the PubMed, PsycINFO, and ERIC databases were performed on March 7, 2016, and searches in the Cochrane Library were performed on June 7, 2016. In total, the systematic search identified 4259 records. The search in PubMed, ERIC, PsycINFO, and Cochrane Library yielded 1135, 1103, 1921 records, and 100 records respectively. A total of 12 records were also identified from searching through previously published review articles.

Title and abstract screening was conducted for 3289 records after 982 duplicates were removed from the total records. During title and abstract review, 3223 records were excluded due to their failure to meet certain inclusion criteria. The most common reason for not meeting the inclusion criteria was that studies were irrelevant to the purpose of this review, namely, that they were not evaluations of anti-bullying interventions. Full-text articles were assessed for eligibility for 66 records, and 28 were excluded due to failure to meet all inclusion criteria. Reasons for excluding studies included: not evaluations of interventions; did not include bullying as an outcome measure; did not meet the definition of bullying used in this review; and bullying was not measured using self-report questionnaires, peer ratings, teacher ratings, or observational data. Thirty-eight records were included in the current review. A total of 40 sources were included in this review after combining these 38 peer-reviewed studies with the 2 aforementioned sources of gray literature. Figure 1 displays the flow chart for the study selection process.

Characteristics of Studies Reviewed

The 38 articles included in this review varied substantially in study setting and design, type of intervention, intervention duration, and measurement instrument. The detailed characteristics of the studies are reported in Table 3. Of the 38 studies, 3 studies were

randomized controlled trials with pretest-posttest designs[35-37]; 14 studies were cluster randomized controlled trials with pretest-posttest designs[31,38-50]; and 21 studies were quasi-experimental studies with various study designs (pretest-posttest designs,[52-58] pretest-posttest non-equivalent control group design,[59-67] time-lagged age equivalent control group design,[68] pretest-posttest time lagged control group design,[59] pretest-posttest non-concurrent multiple baseline design,[70] and pretest-posttest age equivalent cohort design[71]). In terms of the setting, 13 studies were conducted in the United States,[*] 3 in Australia,[41,47,58] 1 in Canada,[40] and 21 in various European countries[†]. One study was conducted at an all-boys school[52] and one at an all-girls school[53]. Two other studies only included girls in their sample, but it was unclear whether the schools were co-ed or girls-only schools. [36,58] Sample sizes ranged from less than 100 to over 10,000 participants.

Although all studies included in this review reported bullying as an outcome, the instruments used to measure and report the level of bullying varied substantially. Table 4 provides details regarding instruments and measures used. The vast majority of the studies used student self-report questionnaires. Bowllan (2011) and Schroeder et al. (2012) used both student self-reports and teacher reports. Karna et al. (2012) and Salmivalli (2001) used both student self-reports and peer reports. Menesini et al. (2003) used peer reports. Splett et al. (2015) used student self-reports, teacher reports, and school counselor reports. Nese et al. (2014) used observational data obtained by trained graduate students.

Intervention Components

Table 5 includes a detailed description of the intervention implemented in each study. The nature of the comparison group varies by study design. Table 6 summarizes the intervention

[*] *References 36, 42, 43, 50, 51, 54, 55, 58, 59, 68-71*
[†] *References 31, 35, 37-39, 44-46, 48, 49, 52, 53, 57, 60-67*

components each study contained. Examples of youth-level interventions include individual counseling and peer mentoring. Classroom-level interventions may include curricular activities (classroom instruction and small group discussions) and class rules. Examples of school-level interventions include school rules and teacher/staff training. The categories "Youth Only," "Classroom Only or School Only," "Classroom + School," "Youth + Classroom or Youth + School," and "Youth + Classroom + School" included 2, 14, 9, 2, and 11 studies respectively.

Summary of Study Results

Study results are presented in detail in Table 7. Results for both bullying victimization and bullying perpetration/aggression were reported in this review. The four main types of bullying as well as cyberbullying were reported as outcome measures. Tables 8 and 9 summarize study findings. Table 8 shows overall study results for the 32 studies that reported results for the overall sample. Table 9 highlights favorable findings of significant decreases in bullying victimization and/or perpetration/aggression from the 23 studies that reported subgroup findings. Tables 8 and 9 display studies organized by the Intervention Components groups described previously.

Table 8 suggested that the results were comparable for studies conducted within the United States and those outside the United States. In general, studies reporting overall findings were a mix of favorable and non-significant findings for both bullying victimization and bullying perpetration/aggression. The limited studies identified that employed targeted strategies only ("Youth Only") showed that targeted strategies alone did not appear to be effective in reducing bullying. Universal strategies alone ("Classroom Only or School Only" and "Classroom + School") appear to be somewhat effective, although combining classroom and school level interventions appears to be more effective than implementing either alone. For example, the

ConRed Program is a model that combines both classroom and school level interventions.[60,63] In addition, there may be added benefits of combining targeted strategies with universal strategies ("Youth + Classroom or Youth + School" and "Youth + Classroom + School"). The Olweus Bullying Prevention Program[59,68,71] and the KiVa Antibullying Program[48] are examples of models that combine youth, classroom, and school level interventions.

As shown in Table 8, the results above not only apply to bullying in general, but also to cyberbullying specifically. Among the 32 studies that reported results for the overall sample, only 13 studies assessed intervention effectiveness for cybervictimization and/or cyberbullying perpetration/aggression. Twelve of these 13 studies were conducted outside the United States. Based on the limited number of studies, it appears that universal strategies alone may be somewhat effective, although combining classroom and school level interventions appears to be more effective than implementing either alone. In addition, there may be added benefits of combining targeted with universal strategies.

As shown in Table 9, studies that reported on subgroup findings used different subgroup categories, such as sex, grade level, school site, or initial status/pretest classifications. Studies that reported favorable subgroup findings for one or more subgroups were a mix of studies conducted both within and outside the United States.

In addition to strategies identified from the peer-reviewed literature, the NAS Report and the stopbullying.gov website provide additional recommended and non-recommended approaches to addressing bullying. As discussed previously, the NAS Report suggested that there is a growing consensus on the use of multi-tiered approaches including both universal and targeted strategies to include students at all risk levels. The report also advised schools to consider implementing well-integrated programs focusing on school climate, positive behavior,

and social and emotional learning to reach a broader set of behavior changes among students.[23] One such program is the Positive Behavioral Interventions and Supports (PBIS) model which aims to prevent disruptive behaviors and promote positive school climate through setting-level change to prevent behavioral problems systematically and consistently. Recent randomized effectiveness trials have reported significant effects of PBIS on reducing bullying in elementary school students.[72,73] In addition, the report suggested that the role of family is critical in terms of promoting disclosure, providing emotional support, and fostering coping skills.[23]

In terms of non-recommended approaches and misdirections in bullying prevention, both the NAS Report and stopbullying.gov conclude that zero-tolerance policies such as suspension and other exclusionary techniques may increase bullying or cause other harm to youth. Encouraging youth to fight back is also not recommended.[23] Peer-led programs, such as peer mediation, conflict resolution, and peer mentoring, are cautioned against as evidence is mixed. There is also little evidence that short-term awareness raising events or brief assemblies are effective at producing sustainable effects. Lastly, group treatment for youth who bully is cautioned against.[23,33]

Evidence Rating & Evidence Continuum

Assignments of evidence ratings were based on overall study results for the 32 studies that reported results for the overall sample (Table 8). Results for bullying victimization and bullying perpetration/aggression were examined separately. Since the outcomes assessed for bullying varied substantially among studies reviewed, overall evidence ratings were assigned to intervention categories based on assessments of both bullying victimization and perpetration/ aggression. In addition, the intervention categories “Youth Only” and “Youth + Classroom or Youth + School” only included 2 peer-reviewed studies, and therefore were not assigned

evidence ratings, nor placed on the evidence continuum.

Based on the evidence rating criteria (Table 2), *Emerging Evidence* was identified for the intervention categories "Classroom Only or School Only" and "Youth + Classroom + School." *Moderate Evidence* was found for the intervention category "Classroom + School." For strategies identified from the gray literature, *Mixed Evidence* was identified for peer-led programs, while *Evidence Against* was found for zero-tolerance policies, group treatment for youth who bully, and short-term awareness raising events. In this review, the labeling of three strategies (in isolation of other interventions) as *Evidence Against* is based on strong conceptual arguments and not empirical literature. Figure 2 displays the evidence-informed interventions and intervention categories along the evidence continuum for NPM 9.

IMPLICATIONS

As a substantial number of states and jurisdictions selected the Bullying National Performance Measure as one of their foci for the current 5-year cycle of the Title V MCH Services Block Grant beginning in fiscal year 2016, the purpose of this review was to provide evidence-based and evidence-informed strategies for how to best achieve the desired outcome of reducing bullying among adolescents.

From this review, it appears that multicomponent school-wide programs are most likely effective in reducing bullying overall. Universal strategies aimed at reducing risk for all youth within a school setting—whether implemented at the classroom or school level—appear to be critical. However, combining classroom- and school-level interventions will likely improve the effectiveness of the intervention program in reducing bullying. In addition, there may be added benefits in combining universal strategies with targeted strategies directed at youth at higher risk of victimization and/or perpetration. These findings appear to be consistent with the recent report

published by the National Academy of Sciences, Engineering, and Medicine.[23] The report suggested that the most likely effective programs are multicomponent school-wide programs that combine elements of universal and targeted strategies.

This review highlights the importance of considering the specific school context when designing anti-bullying interventions. Caution should be taken in assuming the success of anti-bullying interventions as more rigorous evaluations are needed to assess the effectiveness of the interventions implemented. In addition, at a minimum, studies should report results on findings for the overall sample as well as findings for subgroups based on students' year/grade level and sex. Furthermore, the use of a consistent definition of bullying and standard methodologies would allow for better synthesis of the literature. Lastly, measures should be designed to reflect the full construct of bullying in order for evaluations to assess the effectiveness of intervention programs on all types of bullying.

The major strength of this evidence review is that it is the first to focus on anti-bullying interventions targeting only secondary school students. However, there are several limitations that warrant consideration. First, a limited number of sources of gray literature were included, as dissertations and book chapters were not used. This inclusion criterion may have omitted evidence from sources that may have expanded our understanding of anti-bullying interventions targeting secondary school students. Second, as suggested in the NAS Report and a systematic review published in 2014,[23,25] compared to interventions implemented in Europe or otherwise outside the United States, the program effects in the United States are modest, potentially due to greater socioeconomic disparities and racial/ethnic heterogeneity. Since studies conducted outside and within the United States were examined collectively in this review, the generalizability of the findings to the U.S. school context could be limited. Third, due to time

and personnel limitations, cross-validation was not performed; only one reviewer screened the search results and interpreted the studies. However, a consistent protocol was followed and potential concerns were addressed with a team of experts. Fourth, due to the large variations in intervention components, the roles of parents/families and community were not examined separately in this review. Therefore, the potential influences of intervention components on the parent/family and community level on the effectiveness of intervention programs were not analyzed. Lastly, comparing and synthesizing the studies was difficult due to methodological variations, including differences in study setting, sample size, study design, and outcomes measured. Also, intervention components employed in studies varied substantially. Therefore, conclusions were made only for the broad level of interventions rather than individual intervention components. This limited our ability to draw conclusions about specific strategies.

Future efforts should focus on implementation research aimed at improving the adoption, implementation fidelity, and sustainability of evidence-based programs. As suggested by the NAS Report, potentially effective programs may already exist, but more sustained commitment to implementing existing programs with fidelity and testing them with rigorous study designs are needed to better understand the populations and contexts that these programs are effective for.[23] Additional research is needed on the effectiveness of interventions targeting vulnerable subgroups of students. Intervention effects should be assessed separately for these subgroups as the likelihood of being bullied varies by race/ethnicity, gender, and sexual orientation among adolescents.[74,75] With a deeper understanding of the effectiveness of interventions targeting these subgroups, anti-bullying interventions could be designed to tailor toward the specific composition of their target population and focus on the most vulnerable subgroups at disproportionate risk of being bullied. Lastly, with heightened attention on cyberbullying and the

pervasive use of digital technologies among youth, evaluations of interventions addressing cyberbullying should be conducted for a better understanding of how to address this emerging issue confronting our nation's youth.

FIGURES AND TABLES

Figure 1. Flow Chart of the Review Process and Results.

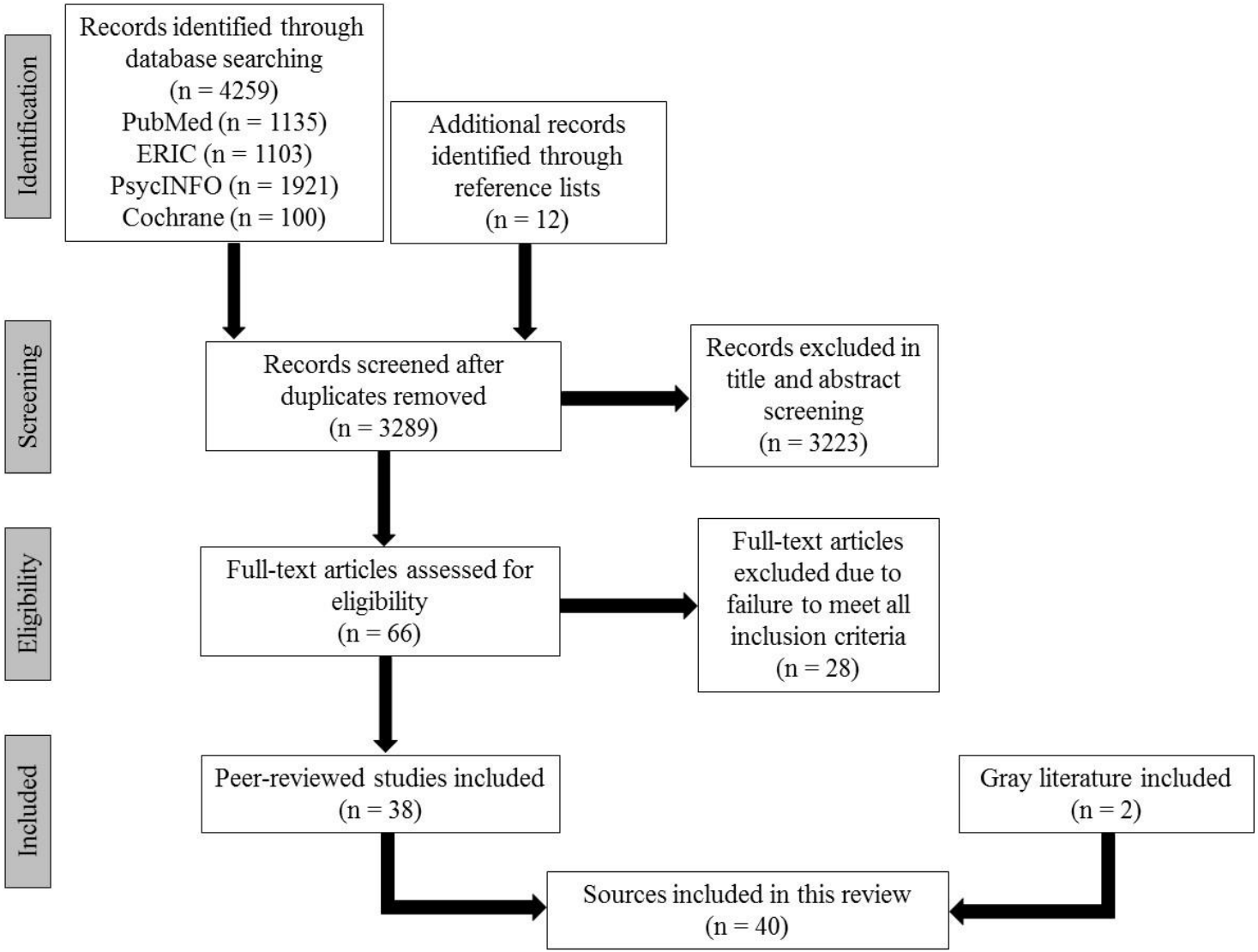

Figure 2. Evidence Continuum.

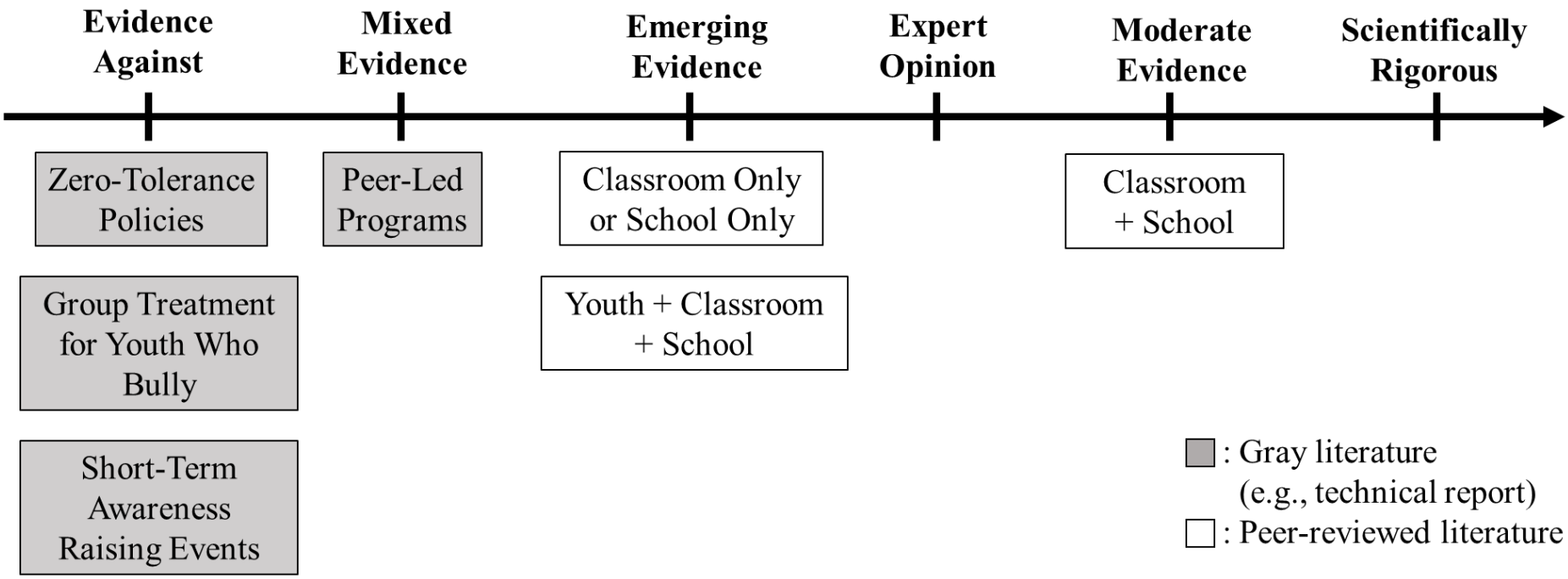

Table 1. Detailed Search Strategies.

Database	Search Strategies
PubMed	"Bullying"[Mesh] OR bullying[tiab] OR bullied[tiab] OR bullies[tiab] OR bully[tiab] OR cyberbull* [tiab] OR cyber bull*[tiab] OR cyber victim*[tiab] OR cyber aggressi*[tiab] OR peer victim*[tiab] OR intimidat*[tiab] OR harass*[tiab]
	"Adolescent"[Mesh] OR adolescen*[tiab] OR teen*[tiab] OR "school based"[tiab] OR schoolbased[tiab] OR middle school*[tiab] OR junior high*[tiab] OR high school*[tiab] OR secondary school*[tiab] OR "grade 6"[tiab] OR sixth grade*[tiab] OR 6th grade*[tiab] OR "grade 7"[tiab] OR seventh grade*[tiab] OR 7th grade*[tiab] OR "grade 8"[tiab] OR eighth grade*[tiab] OR 8th grade*[tiab] OR "grade 9"[tiab] OR ninth grade*[tiab] OR 9th grade*[tiab] or "grade 10"[tiab] OR tenth grade*[tiab] OR 10th grade*[tiab] OR "grade 11"[tiab] OR eleventh grade*[tiab] OR 11th grade*[tiab] OR "grade 12"[tiab] OR twelfth grade*[tiab] OR 12th grade*[tiab]
	"Program Evaluation"[Mesh] OR "program evaluation*"[tiab] OR evaluation*[tiab] OR intervention*[tiab] OR prevention*[tiab] OR strateg*[tiab]
	#1 AND #2 AND #3
ERIC & PsycINFO	(DE "Bullying" OR DE "Cyberbullying") OR (TI(bullying OR bullied OR bullies OR bully OR cyberbull* OR (cyber W0 bull*) OR (cyber W0 victim*) OR (cyber W0 aggressi*) OR (peer W0 victim*) OR intimidat* OR harass*)) OR (AB(bullying OR bullied OR bullies OR bully OR cyberbull* OR (cyber W0 bull*) OR (cyber W0 victim*) OR (cyber W0 aggressi*) OR (peer W0 victim*) OR intimidat* OR harass*))
	(DE "Middle School Students" OR DE "Middle School Teachers" OR DE "Middle Schools" OR DE "Junior High School Students" OR DE "Junior High Schools" OR DE "High School Freshmen" OR DE "High School Graduates" OR DE "High School Seniors" OR DE "High School Students" OR DE "High Schools" OR DE "Secondary School Curriculum" OR DE "Secondary School Students" OR DE "Secondary School Teachers" OR DE "Secondary Schools" OR DE "Grade 6" OR DE "Grade 7" OR DE "Grade 8" OR DE "Grade 9" OR DE "Grade 10" OR DE "Grade 11" OR DE "Grade 12" OR DE "Adolescents") OR (TI((middle W0 school*) OR (junior W0 high*) OR (high W0 school*) OR (secondary W0 school*) OR "grade 6" OR (sixth W0 grade*) OR (6th W0 grade*) OR "grade 7" OR (seventh W0 grade*) OR (7th W0 grade*) OR "grade 8" OR (eighth W0 grade*) OR (8th W0 grade*) OR "grade 9" OR (ninth W0 grade*) OR (9th W0 grade*) OR "grade 10" OR (tenth W0 grade*) OR (10th W0 grade*) OR "grade 11" OR (eleventh W0 grade*) OR (11th W0 grade*) OR "grade 12" OR (twelfth W0 grade*) OR (12th W0 grade*) OR adolescen* OR teen* OR "school based" OR schoolbased)) OR (AB((middle W0 school*) OR (junior W0 high*) OR (high W0 school*) OR (secondary W0 school*) OR "grade 6" OR (sixth W0 grade*) OR (6th W0 grade*) OR "grade 7" OR (seventh W0 grade*) OR (7th W0 grade*) OR "grade 8" OR (eighth W0 grade*) OR (8th W0 grade*) OR "grade 9" OR (ninth W0 grade*) OR (9th W0 grade*) OR "grade 10" OR (tenth W0 grade*) OR (10th W0 grade*) OR "grade 11" OR (eleventh W0 grade*) OR (11th W0 grade*) OR "grade 12" OR (twelfth W0 grade*) OR (12th W0 grade*) OR adolescen* OR teen* OR "school based" OR schoolbased))
	(DE "Evaluation" OR DE "Program Evaluation" OR DE "Intervention" OR DE "Prevention") OR (TI(evaluation* OR "program evaluation*" OR intervention* OR prevention* or strateg*)) OR (AB(evaluation* OR "program evaluation*" OR intervention* OR prevention* or strateg*))
	S1 AND S2 AND S3
Cochrane Library	#1: MeSH descriptor: [Bullying] explode all trees
	#2: bullying or bullied or bullies or bully or cyberbully* or cyber bull* or cyber victim* or cyber aggressi* or peer victim* or intimidate* or harass*:ti,ab,kw (Word variations have been searched)
	#3: MeSH descriptor: [Adolescent] explode all trees
	#4: adolescent* or teen* or "school based" or schoolbased or middle school* or junior high* or high school* or secondary school* or "grade 6" or sixth grade* or 6th grade* or "grade 7" or seventh grade* or 7th grade* or "grade 8" or eighth grade* or 8th grade or "grade 9" or ninth grade* or 9th grade* or "grade 10" or tenth grade* or 10th grade* or "grade 11" or eleventh grade* or 11th grade* or "grade 12" or twelfth grade* or 12th grade*:ti,ab,kw (Word variations have been searched)
	#5: MeSH descriptor: [Program Evaluation] explode all trees
	#6: program evaluation* or evaluation* or intervention* or prevention* or strategy*:ti,ab,kw (Word variations have been searched)
	(#1 or #2) and (#3 or #4) and (#5 or #6)

Table 2. Evidence Rating Criteria.

Evidence Rating	Evidence Criteria: Type	Evidence Criteria: Study Results
Scientifically Rigorous	• Peer-reviewed study results are drawn only from: o Randomized controlled trials, and/ or o Quasi-experimental studies with pre-post measures and control groups	• Preponderance of studies have statistically significant favorable findings
Moderate Evidence	• Peer-reviewed study results are drawn from a mix of: o Randomized controlled trials o Quasi-experimental studies with pre-post measures and control groups o Quasi-experimental studies with pre-post measures without control groups o Time trend analyses	• Preponderance of studies have statistically significant favorable findings
Expert Opinion	• Gray literature	• Experts deem the intervention as favorable based on scientific review
Emerging Evidence	• Peer-reviewed study results are drawn from a mix of: o Randomized controlled trials o Quasi-experimental studies with pre-post measures and control groups o Quasi-experimental studies with pre-post measures without control groups o Time trend analyses o Cohort studies	• Studies with a close-to-evenly distributed mix of statistically significant favorable and non-significant findings • Only cohort studies with preponderance of statistically significant favorable findings
	• Gray literature	• Experts deem the intervention as favorable
Mixed Evidence	• Peer-reviewed study results are drawn from a mix of: o Randomized controlled trials o Quasi-experimental studies with pre-post measures and control groups o Quasi-experimental studies with pre-post measures without control groups o Time trend analyses o Cohort studies	• Studies with a close-to-evenly distributed mix of statistically significant favorable, unfavorable, and non-significant findings
	• Gray literature	• Experts deem the intervention as having mixed evidence
Evidence Against	• Peer-reviewed study results are drawn from a mix of: o Randomized controlled trials o Quasi-experimental studies with pre-post measures and control groups o Quasi-experimental studies with pre-post measures without control groups o Time trend analyses o Cohort studies	• Preponderance of studies have statistically significant unfavorable or non-significant findings
	• Gray literature	• Experts deem the intervention as being ineffective or unfavorable

Table 3. Study Characteristics.[1]

Study	Country	Study Sample			Study Design
		Grade(s)	Age[2]	Sample Size	
Allen (2010)	US	9-12	14-18	Victimization: Pretest (n=874); Posttest (n=817) Perpetration: Pretest (n=870); Posttest (n=818)	QE: pretest-posttest
Athanasiades et al. (2015)	Greece	MS: Year 2	13-14	Total (n=314) Intervention (n=123); Control (n=140)	RCT: pretest-posttest
Baldry & Farrington (2004)	Italy	MS: Years 1-3 HS: Year 1	11-15	Total (n=239) Intervention (n=131): Pretest (n=128) Control (n=106): Pretest (n=105)	Cluster RCT: pretest-posttest
Bauer et al. (2007)	US	6-8	NR	Intervention (n=4959) Relational Victimization: Pretest (n=4607); Posttest (n=4480) Physical Victimization: Pretest (n=4531); Posttest (n=4419) Control (n=1559) Relational Victimization: Pretest (n=1408); Posttest (n=1456) Physical Victimization: Pretest (n=1373); Posttest (n=1448)	QE: pretest-posttest non-equivalent control group
Boulton & Flemington (1996)	UK	7-10	11-14	Total (n=170)	Cluster RCT: pretest-posttest
Bowllan (2011)	US	7-8	NR	Intervention (n=112); Control (n=158)	QE: time-lagged age-equivalent control group
Chaux et al. (2016)	Germany	NR	11-17	Total (n=1075) Analysis sample (n=722) Long-Intervention (n=12 classes); Short-Intervention (n=7 classes); Control (n=16 classes) Cyberbullying (n=709); Traditional Bullying (n=709); Cybervictimization (n=714); Traditional Victimization (n=718)	Cluster RCT: pretest-posttest
Connolly et al. (2014)	Canada	7-8	11-14	Pretest (N=509): Intervention (n=209); Control (n=300) Posttest (N=447): Intervention (n=183); Control (n=264) Analysis: Intervention (n=183 complete data; n=209 FIML); Control (n=264 complete data; n=300 FIML)	Cluster RCT: pretest-posttest
Cowie & Olafsson (2000)	UK	NR	NR	Pretest (n=300); Posttest (n=207)	QE: pretest-posttest
Cross et al. (2016)	Australia	8-10 (same cohort)	13-15	Pretest (N=3382): Intervention (n=1878); Control (n=1504) Posttest 1 (N=2940): Intervention (n=1593); Control (n=1347) Posttest 2 (N=2874): Intervention (n=1582); Control (n=1292)	Cluster RCT: pretest-posttest
Del Rey et al. (2016)	Spain	NR	11-19	Total (N=875) Intervention (n=586); Control (n=289)	QE: pretest-posttest non-equivalent control group

Dellasega & Adamshick (2005)	US	NR	Mean: 13.2	Pretest (n=42); Posttest (n=26)	QE: pretest-posttest
Domino (2013)	US	7	Mean: 12.2	Total (N=336) Fall 2009: Intervention (n=160); Control (n=163) Spring 2010: Intervention (n=163); Control (n=163)	QE: pretest-posttest time-lagged control group
Espelage et al. (2013)	US	6	Mean: 11.24	Pretest: Intervention (n=1940); Control (n=1676) Posttest: Intervention (n=1718); Control (n=1448) Analysis: Intervention (n=1940); Control (n=1676)	Paired cluster RCT: pretest-posttest
Espelage et al. (2015)	US	6-7 (same cohort)	11-13	Pretest: Intervention (n=2029); Control (n=1676) Posttest: Intervention (n=1548); Control (n=1170) Analysis: Intervention (n=2029); Control (n=1676)	Paired cluster RCT: pretest-posttest
Fekkes et al. (2016)	Netherlands	7-9	13-16	Pretest: Intervention (n=913); Control (n=481) Posttest 1: Intervention (n=663); Control (n=332) Posttest 2: Intervention (n=283); Control (n=229)	Cluster RCT: pretest-posttest
Garaigordobil & Martinez-Valderrey (2015)	Spain	SS: Years 3-4	13-15	Total (N=178) Intervention (n=93); Control (n=83)	Cluster RCT: pretest-posttest
Gradinger et al. (2014)	Austria	5-7	Mean: 11.7	Total (N=2042) Intervention (n=1377); Control (n=665)	Cluster RCT: pretest-posttest
Houlston & Smith (2009)	UK	7-9	11-14	Pretest (n =375); Posttest (n=342)	QE: pretest-posttest design
Hunt (2007)	Australia	7-10	12-15	Pretest: Intervention (n=155); Control (n=289) Posttest: Intervention (n=111); Control (n=207) Analysis: Intervention (n=152); Control (n=248)	Cluster RCT: pretest-posttest
Karna et al. (2012)	Finland	7-9	13-15	Total (n=16503)	Cluster RCT: pretest-posttest
Menesini et al. (2003)	Italy	6-8	11-14	Intervention (n=178); Control (n=115)	QE: pretest-posttest non-equivalent control group
Menesini et al. (2012)	Italy	9-13	14-20	Study 1: Intervention 1 (n=126); Intervention 2 (n=63); Control (n=47) Study 2: Intervention (n=231); Control (n=144)	QE: pretest-posttest non-equivalent control group
Nese et al. (2014)	US	6-8	NR	School 1: Pretest (n=309); Posttest (n=353) School 2: Pretest (n=53); Posttest (n=70) School 3: Pretest (n=234); Posttest (n=81)	QE: pretest-posttest non-concurrent multiple baseline
Nixon & Werner (2010)	US	6	Mean: 11.4	N=405	Quasi-experiment study: pretest-posttest
Ortega-Ruiz et al. (2012)	Spain	NR	11-19	Total (n=893) Intervention (n=595); Control (n=296)	QE: pretest-posttest non-equivalent control group
Palladino et al. (2012)	Italy	9-13	Mean: ~16.2[3]	Total (n=375) Intervention (n=231); Control (n=144)	QE: pretest-posttest non-equivalent control group
Palladino et al. (2016)	Italy	9	14-18	Trial 1: Intervention (n=451); Control (n=171) Trial 2: Intervention (n=234); Control (n=227)	QE: pretest-posttest non-equivalent control group

Perkins et al. (2011)	US	6-8	11-14	Total: Pretest (n=2589); Posttest (n=3024) School A: Pretest (n=180); Posttest (n=225) School B: Pretest (n=759); Posttest (n=681) School C: Pretest (n=578); Posttest (n=799) School D: Pretest (n=484); Posttest (n=592) School E: Pretest (n=588); Posttest (n=727)	QE: pretest-posttest
Peterson & Rigby (1999)	Australia	7, 9-11	NR	NR (The school has a total of ~1200 students; 4 of the 5 grades included in the study)	QE: pretest-posttest
Richards et al. (2008)	UK	7	Mean: ~11.5[4]	Intervention: Pretest (n=258); Posttest (n=206) Control: Pretest (n=162); Posttest (n=162)	QE: pretest-posttest non-equivalent control group
Salmivalli (2001)	Finland	7-8	~13-15[5]	Total (n=196) Analysis (n=144)	QE: pretest-posttest
Schroeder et al. (2012)	US	NR	NR	HALT! Schools Cohort 1: Middle school (n=0); High school (n=999) Cohort 2: Middle school (n=12972); High school (n=7436) PA CARES Schools: Middle school (n=9899); High School (n=6048)	QE: pretest-posttest age-equivalent cohort
Splett et al. (2015)	US	6-8	12-15	Total (n=28) Intervention (n=22); Control (n=12)	RCT: pretest-posttest
Stevens et al. (2000)	Belgium	NR	NR[6]	Treatment with Support (n=284) Treatment without Support (n=277) Control (n=151)	Cluster RCT: pretest-posttest
Swaim & Kelly (2008)	US	7-8	NR	Total (n=1492) Intervention (n=712); Control (n=780)	Cluster RCT: pretest-posttest
Tanrikulu et al. (2015)	Turkey	NR	16	Intervention (n=8); Control (n=8)	RCT: pretest-posttest
Wolfer et al. (2014)	Germany	7-10	Mean: 13.3	Total (n=593) Long Version (n=194); Short Version (n=104); Control (n=295)	QE: pretest-posttest non-equivalent control group

[1] Abbreviations used in this table: MS (middle school); HS (high school); SS (secondary school); NR (not reported); QE (quasi-experimental study); RCT (randomized controlled trial)
[2] This column reports age ranges in years. Mean age is only reported if the mean, but not the range, is reported.
[3] Mean age was reported separately for intervention and control groups. An estimated mean age of the total sample was calculated.
[4] Mean age was reported separately for intervention and control groups. An estimated mean age of the total sample was calculated.
[5] The age range 13-15 years is for students in grades 7-9 in the school. The intervention was only implemented among students in grades 7-8.
[6] The study included students in both primary and secondary schools. The age range was not provided for secondary school students specifically.

Table 4. Instruments & Measures.[1]

Study	Instruments	Measures
Allen (2010)	Student self-report: 9 items from the student version of Olweus Bully/Victim Questionnaire (1996)	• Indication of whether they had been bullied/bullied in any of the 9 ways • 1-5 point Likert scale (1=It has not happened, 5=It happens several times a week) • Variables recoded into a binary variable (0=It has not happened or it happened only once or twice, 1=It has happened 2-3 times per month, once a week, or several times per week) • 9 original items combined a composite variable and recoded into a binary variable
Athanasiades et al. (2015)	Student self-report: Greek version of the TABBY checklist	• 29 questions that asked students to assess involvement in traditional and cyberbullying behaviors during the past six months either as victims or bullies • 5-point Likert scale (1=it happened many times, 5=it never happened; 1=totally agree, 5=totally disagree)
Baldry & Farrington (2004)	Student self-report: Italian version of the original questionnaire developed by Olweus in 1991 in the latest version revised by Smith and Shu (2000)	• Prevalence and frequency of bullying and victimization • Types of bullying and victimization (direct bullying: physical and verbal, indirect bullying: relational) • "Have you been bullied at school in the previous three months?" "Have you bullied others in the previous three months?" and questions for types of bullying and victimization • A) It never happened in this period, B) It has only happened once or twice, C) It has happened sometimes, D) It has happened about once a week, E) It has happened several times a week o A or B: not involved o C, D, or E: classified as bullies or victims • Composite measure for victimization (sum of 7 items measuring different types of victimization) and bullying (sum of 6 items measuring different types of bullying)
Bauer et al. (2007)	Student self-report: 4 items regarding relational and physical victimization from the Revised Olweus Bully/Victim Questionnaire	• 4 items regarding relational and physical victimization • 5-point Likert scale to assess frequency • Responses were dichotomized using the cut-off of "2-3 times a month" or greater to capture the repetitive nature • The 2 relational and 2 physical indicators were collapsed into separate composite measures o If at least one of the pair of indicators was responded to positively, it was coded as experiencing relational or physical victimization
Boulton & Flemington (1996)	Student self-report: one section of a questionnaire developed by the authors	• Tendency to bully others (8 items): how often in the last week they had behaved in specific ways (e.g., called someone a nasty name, left someone out of the group, laughed at someone, took someone's belongings, threatened someone and forced someone to do something they didn't want to do) • 3=never, 2=a bit, 1=a lot • Total score obtained from 7 items (eliminated 'laughed at someone')
Bowllan (2011)	Student self-report: Revised Olweus Bully/Victim Questionnaire (R-OBVQ)	• R-OBVQ: 39-item multiple-choice instrument with 36 items addressing aspects of bullying/victim problems • TQ: 29 items

Study	Instruments	Measures
	Teacher report: Teacher Questionnaire (TQ)	• Data from both instruments generated a profile that included incidence of bullying, etc. • Likert scale o ‘‘2 or 3 times a month’’ to ‘‘several times per week’’ over the past couple of months: victims/bullies o ‘‘Not being bullied or bullying others’’ or ‘‘only once or twice in the past couple of months’’: non-victims/non-bullies
Chaux et al. (2016)	Student self-report: European Cyberbullying Intervention Project Questionnaire	• Prompt: Have you experienced any of the following behaviors in the last 2 months? • Traditional Bullying Perpetration & Traditional Victimization: 7 items • Cyberbullying Perpetration & Cybervictimization: 11 items • Response options: no, once or twice, once or twice a month, once a week, more than once a week
Connolly et al. (2014)	Student self-report: Canadian Public Health Association Safe School Survey (Grades 4-7)	• 4-item questionnaire including physical, verbal, social, and electronic victimization • Frequency with which each type of bullying was experienced in the past 2 months on a 4-point Likert scale (0=never to 3=many times a week) • Scores on the 4-items were averaged to yield a summary score
Cowie & Olafsson (2000)	Student self-report: Olweus questionnaire (1991) as modified by Whitney and Smith (1993) for use in the UK	N/A
Cross et al. (2016)	Student self-report: cyberbullying scales (cyber victimization scale and cyberbullying perpetration scales) based on the work of Smith, Mahdavi, Carvalho, and Tippett (2006) and formative work conducted by the research team	• Both scales contained 11 items • Indication of the frequency of experiencing the behaviors in the past ten weeks: this did not happen to me/I did not do this, once or twice, every few weeks, about once a week, and several times a week or more
Del Rey et al. (2016)	Student-self report: Spanish version of the European Bullying Intervention Project Questionnaire (EBIPQ) and the European Cyberbullying Intervention Project Questionnaire (ECIPQ)	• EBIPQ: 14 Likert-type items with 5 answer options from “never” to “yes, more than once a week” and relates to the 2 months prior to taking the survey o Victimization subscale: 7 items o Aggression subscale: 7 items • ECIPQ: 22 Likert-type items with the same answer options and reference period as EBIPQ o Victimization subscale: 7 items o Abuse: 7 items
Dellasega & Adamshick (2005)	Student self-report: frequency of relational aggression in the week prior to survey administration	• Relational aggression (RA) measured by: number of times hurt by RA, number of times girl used RA, number of times RA message sent via computer
Domino (2013)	Student self-report: Peer Relations Questionnaire	• 12 items • Global measure and separate subscales for bullying and victimization (including physical, verbal, and relational) • Response: 0=never, 1=once in a while, 2=pretty often, 3=very often • Sum scores for each subscale range between 0 and 12
Espelage et al. (2013)	Student self-report: University of Illinois Bully Scale; University of Illinois	• University of Illinois Bullying Scale- verbal/relational bullying perpetration: 9 items • University of Illinois Victimization Scale- peer victimization: 3 items

Study	Instruments	Measures
	Victimization Scale; University of Illinois Fighting Scale; and Homophobic Content Agent Target Scale	• University of Illinois Fighting Scale- physical aggression: 4 items • Homophobic Content Agent Target Scale- homophobic name calling perpetration and victimization: 10 items • Frequency in the previous 30 days: never, 1 or 2 times, 3 or 4 times, 5 or 6 times, or ≥7 times • Outcome measures were converted to binary responses with a cut point of >2 items
Espelage et al. (2015)	See Espelage et al. (2013) above	• See Espelage et al. (2013) above
Fekkes et al. (2016)	Student-self report: standard questions on health behavior from the Dutch local and national health monitor (National Institute for Health Public and the Environment, 2011)	• 3 items regarding involvement in bullying victimization, cybervictimization, and bullying perpetration in the previous 3 months • Answer options: 0=never, 1=less than twice a month, 2=two or three times per month, 3=about once a week, 4=more times per week
Garaigordobil & Martinez-Valderrey (2015)	Student self-report: Cyberbullying: Screening of Peer Harassment (Garaigordobil, 2013)	• Bullying Scale: 4 types of presential bullying with 12 items grouped according to the role performed by the person being evaluated in the aggression situation (victim, aggressor, and observer) • Cyberbullying Scale: 15 behaviors with 45 items grouped according to the role performed in the aggression situation (victim, perpetrator, and observer) • Frequency: suffered, performed, or observed during the past year (0=never, 1=sometimes, 2=fairly often, 3=always) • Percentile scores of four indicators (victimization, perpetration, observation, aggressive-victimization) of traditional bullying and cyberbullying respectively
Gradinger et al. (2014)	Student self-report: cyberbullying scale & cybervictimization scale with items based on Smith et al. (2000); bullying perpetration scale & bullying victimization scale used in Strohmeier, Gradinger, Schabmann, & Spiel (2012); physical aggression scale & physical victimization scale using the peer nomination measure developed by Crick & Grotpeter (1995); relational aggression scale & relational victimization scale using the peer nomination measure developed by Crick & Grotpeter (1995)	• Cyberbullying and cybervictimization scales: 7 items • Bullying perpetration and bullying victimization scales: global item and 3 specific items covering different forms of bullying • Physical aggression and physical victimization scales: 3 items • Relational aggression and relational victimization scales: 5 items • Time span of 2 months • 5-point response scale: 0=not at all, 1=once or twice, 2=two or three times a month, 3=once a week, 4=nearly every day • Bullying perpetration and bullying victimization scales, Physical aggression and physical victimization scales, and Relational aggression and relational victimization scales were combined into "traditional aggression and victimization" and used as controls
Houlston & Smith (2009)	Student self-report on experiences and perceptions of bullying in the school	• Whether students had ever experienced bully/ victim problems (Y/ N) • If so how recently this had occurred (this week/ earlier this term/last term/ earlier this school year/ last school year/over one school year ago/ before starting this school) • If they thought bullying occurs in their school (yes often/ sometimes/ not sure/ not a lot/ hardly ever) • Whether they thought the school does anything about bullying (yes a lot/ yes a bit/ not sure/ no)
Hunt (2007)	Student self-report: Peer Relations Questionnaire (PQR)	• PRQ o Frequency with which students had been bullied by other students at their school, the nature of that bullying, and whom they confide in when they are bullied

Study	Instruments	Measures
		○ Frequency with which students bully others, the reasons they have for bullying others, and whether bullying is done individually or in groups
Karna et al. (2012)	Student self-report: global items from the revised Olweus' Bully/Victim Questionnaire (1996) Peer report: peer nominations	• "How often have you been bullied at school in the last couple of months?" and "How often have you bullied others at school in the last couple of months?" • Frequency: 0=not at all, 1=only once or twice, 2=two or three times a month, 3=about once a week, and 4=several times a week ○ 2, 3, 4: victims/bullies • Peer report ○ Students nominated classmates treated in the following ways ▪ "He/she is being pushed around and hit" ▪ "He/she is called names and mocked" ▪ "Nasty rumors are spread about him/her" ○ Peer nominations were totaled and divided by the number of classmates responding (score ranging from 0.00 to 1.00 for each student on each item)
Menesini et al. (2003)	Peer report: Italian reduced version of Salmivalli et al. (1996)- original scale adapted by Sutton and Smith (1999) previously validated in Menesini and Gini (2000)	• Participants asked to nominate classmates who more often behave in the way described by the item and to evaluate how often they behave in this way along a scale from 0 to 2 • 20 items + 1 on victimization • Individual scores obtained by summing total nominations by each child • Role scores: bully, reinforce, assistant, defender, outside, and victim scales
Menesini et al. (2012)	Student self-report: bullying and victimization scales described by Menesini, Calussi, and Nocentini (2012); cyberbullying perpetration and cybervictimization scales described by Menesis, Nocentini, and Calussi (2011)	• Bullying scale and victimization scale: 11 items • Cyberbullying perpetration scale and cybervictimization scale: 18 items • Ask how often respondents had experienced particular behaviors during the past couple of months on a 5-point scale from "never" to "several times a week"
Nese et al. (2014)	Observational data collected by trained graduate students	• Frequency of physical and/or verbal aggression during 20-min direct observations in the cafeteria during lunchtime • 2-4 direct observation sessions per week with no more than 5 days between sessions (unless school out-of-session)
Nixon & Werner (2010)	Student self-report: items from a measure originally designed by McDonald, D'Amico, and O'Laughlin (2000) and revised by Werner and Nixon (2005) with four subscales (relational aggression, physical aggression, relational victimization, and physical victimization)	• Participants indicate how often in the last 6 months they engaged in a series of behaviors or were the target of different behaviors • 5-point scale (1=never, 2=rarely, 3=monthly, 4=weekly, 5=at least once a day)
Ortega-Ruiz et al. (2012)	Student self-report: European Cyberbullying Intervention Project Questionnaire (ECIPQ); European Bullying Intervention Project Questionnaire (EBIPQ)	• ECIPQ: 22 Likert scale items • EBIPQ: 14 Likert scale items • 5 answer options for frequency ranging from never to more than once a week
Palladino et al. (2012)	Student self-report: bullying and	• Bullying and victimization scales: 11 items

Study	Instruments	Measures
	victimization scales (Menesini, Calussi, & Nocentini, 2012); revised version of the cyberbullying perpetration and cybervictimization scales (Menesini, Nocentini, & Calussi, 2011)	• Cyberbullying perpetration and cybervictimization scales: 18 items • Ask how often respondents had experienced behaviors as perpetrators or victims in the past couple months on a 5-point scale from "never" to "several times a week"
Palladino et al. (2016)	Student self-report: Florence Bullying-Victimization Scales (Palladino, 2013); Florence Cyberbullying/ Cybervictimization Scales (Palladino, Nocentini, & Menesini, 2015)	• Florence Bullying-Victimization Scales: 10 items o Three subscales: physical, verbal, and indirect • Florence Cyberbullying/Cybervictimization Scales: 14 items o Four subscales: written-verbal, visual, impersonation, and exclusion • Ask how often respondents had experienced a particular behavior as both perpetrator and victim during the past two months on a 5-point scale from "never" to 'several times a week"
Perkins et al. (2011)	Student self-report: the Survey of Bullying at Your Schools (Social Norms Surveys Online)	• Bullying perpetration: 8 items • Bullying victimization: 7 items • Response categories: 0=not in the last 30 days, 1=once, 2=2-3 times, 3=4 or more times • Index measure obtained by summing scores for responses to all items
Peterson & Rigby (1999)	Student self-report: Peer Relations Questionnaire (Victim Scale)	• 5-items • Frequency with which student experiences bullying from others at school
Richards et al. (2008)	Student self-report: questionnaire developed by Olweus (1991)	• 15 items
Salmivalli (2001)	Student self- and peer-report: questionnaire evaluating bullying experienced and observed by students	• Self- and peer-reports of bullying: "Who in your class is being bullied? Write the name(s) of the students here. If you think you are bullied yourself, write your own name here." • Self-report of types of bullying observed by students o 9 items o 4 scales: physical, verbal, indirect, and attacks on property o Ask respondents the extent to which they had observed types of bullying during the past 2 weeks o 4-point scale: 0=not at all, 1=sometimes, 2=quite often, 3=constantly o A total score (mean score of all types of bullying) was formed
Schroeder et al. (2012)	Student self-report: Olweus Bullying Questionnaire (OBQ) (Olweus, 2007) Teacher report: Teacher Questionnaire	• OBQ: 42 items o Key indicators: students reports of being bullied, students reports of engaging in bullying behavior
Splett et al. (2015)	Student self-report: Children's Social Behavior Scale-Self (CSBS-S) Teacher report: Children's Social Behavior Scale-Teacher Report (CSBS-T) School counselor report: Children's Social Behavior Scale-Teacher Report (CSBS-T)	• CSBS-S o 15 items o 6 subscales: relational aggression, physical aggression, verbal aggression, prosocial behaviors, inclusion, and loneliness o 5-point scale (1=never to 5=all the time) • CSBS-T o 13 items o 3 subscales: relational aggression, physical aggression, prosocial behavior

Study	Instruments	Measures
		○ 5-point scale (1=never to 5=all the time)
Stevens et al. (2000)	Student self-report: Bullying Inventory (Olweus, 1989; Liebrand, Van Ijzerdoorn, & Van Lieshout, 1991); Life in School checklist (Arora, 1994)	• Bullying Inventory ○ "How often have you been bullied in school?" and "How often have you taken part in bullying other students in school?" as well as "How often does it happen that other students don't want to spend recess with you and you end up being alone?" ○ Response categories range from "it has not happened" (1) over "now and then" (3) to "several times a week" (5) • Life in School checklist ○ Subdivides bullying and being bullied into verbal, physical, and indirect aggression and includes items that assess positive interactions among students ○ 3-point scale to measure the intensity of bullying and being bullied but 5-point scales were constructed to align with the Bullying Inventory • 3 scales were constructed as outcome measures: bullying scale, victim scale, positive interaction scale
Swaim & Kelly (2008)	Student self-report: verbal victimization and physical victimization scales	• Verbal victimization scale: 4 items • Physical victimization scale: 6 items • Ask participants the frequency of experiencing verbal/ physical assault in the last month • Response categories: 4-point Likert scale from "none" to "10 or more times"
Tanrikulu et al. (2015)	Student self-report: Cyberbullying Scale developed by Aricak et al. (2012)	• 24 items with Likert scale • Minimum score: 24; maximum score: 96
Wolfer et al. (2014)	Student self-report: questionnaire developed within the framework of a research project (Brighi et al., 2012; Del Rey et al., 2012)	• 11 items • Ask respondents to indicate how often they victimized their peers in the virtual context during the previous 2 months • 5-point Likert scale (0=never to 4=more than once a week)

[1] For additional information on references cited in the Instruments column, refer to the corresponding study.

Table 5. Intervention Description.

Study	Comparison Group	Description of Intervention	Length of Intervention; Duration between Pretest and Posttest
Allen (2010)	N/A	• Social Support System (SSS)- bullying reporting and response system • Viewing of student-made video, interactive assemblies, class discussion, presentation of SSS to students and parents	2 years; 2 years
Athanasiades et al. (2015)	No intervention	TABBY in Internet project • Four videos on cyberbullying followed by discussion on consequences of cyberbullying, proper internet use, and actions against cybervictimization implemented by trained teachers	2 hours; 6 months
Baldry & Farrington (2004)	No intervention	Bulli & Pupe (Bullies and Dolls) • Interactive lessons using three videos and a booklet with three modules (bullying among peers; witnessing domestic violence; the cycle of violence) with role-playing, group discussions, and focus groups	One 3-hour session per week for 3 weeks; 4 months
Bauer et al. (2007)	Less formal prevention efforts (peer mediation and curriculum about racist attitudes)	Olweus Bullying Prevention Program (OBPP) • School: assembly, staff meetings, coordinating committee, school rules, identification and monitoring of "hot spots," staff training, reporting system • Parent: notification of OBPP, parent education events • Classroom: discussions of school rules, curricular activities • Community: training with local businesses	1-2 years; 1-2 years
Boulton & Flemington (1996)	No intervention	Viewing of an anti-bullying video (*Sticks and Stones*) followed by discussion of bullying led by teacher	1 video viewing; 2 weeks
Bowllan (2011)	No intervention	Olweus Bullying Prevention Program (OBPP) • School: Olweus Bullying Coordinating Committee, routine onsite consultation, teacher and support staff team discussions, school-wide assembly, increase supervision in "hot spots" for bullying, system of position reinforcement for prosocial behavior and disciplinary process for bullying • Parent: written materials on OBPP, presentations at parent open house and at Parent Teacher Student Association meetings • Classroom: posting of schools rules in classrooms	1 year; 1 year
Chaux et al. (2016)	No intervention	Group 1: Media Heroes Program (long version) • Teacher-led curricular activities: role-playing, debates, analyses of written stories, news and films, cooperative learning, and student-parent presentations Group 2: Media Heroes Program (short version)	Long version: fifteen 45-min sessions Short version: four 90-min sessions in one day 9 months
Connolly et al. (2014)	Board-mandated usual practice (UP) • Implemented by adults but varied in format from school to school	Respect in Schools Every-where • Youth-led aggression prevention (YLP) classroom workshops for middle schools students led by trained high school students	YLP: 2 aggression prevention presentations for a total of 90 mins UP: 3 sessions for an estimated

Study	Comparison Group	Description of Intervention	Length of Intervention; Duration between Pretest and Posttest
	• Presentations from police about gangs and peer aggression; anti-bullying presentations by school staff or others; antibullying discussions facilitated by guidance counselor; group discussions of safety issues specific to girls	• One presentation on bullying and one presentation on gender-based aggression, including sexual harassment and dating aggression	time of 90 mins; 8 months
Cowie & Olafsson (2000)	N/A	Peer support program: trained peer supporters provided individual help sessions to students, looked out for peers being bullied during breaks, challenged bullies, intervened and mediated, and offered peer support	7.5 months; 7.5 months
Cross et al. (2016)	No intervention	Cyber Friendly Schools • Whole-school program led by trained student leaders and school staff: review of school policies, teaching staff about technologies used by students, increasing students' awareness of their rights and responsibilities online, providing students' and parents' cyberbullying prevention training • Teaching and learning program focused on enhancing online social skills	2 years (12 hours of teaching and learning program); Pretest-posttest 1: 1.5 years Posttest 1-posttest 2: 1 year
Del Rey et al. (2016)	Original lessons unrelated to cyber-behavior	ConRed Program • Curricular work aimed at developing social competencies • Sessions on information gathering and safe use of the Internet • Working session with teaching teams experienced in bullying prevention • Training sessions with students, teaching staff, and families on appropriate use of information and communications technologies • Whole-school awareness-raising campaign (posters, leaflets, and others)	8 training sessions conducted with students, 2 with teaching staff, and 1 with family over a 3 months; 3 months and 2 weeks
Dellasega & Adamshick (2005)	N/A	Club Ophelia™ • Arts-based curriculum • Mentoring by high school girls in an ERI (educate, relate, and integrate) model on reducing relational aggression	1 semester; 1 semester
Domino (2013)	No intervention	Take the Lead • Teacher-led classroom curriculum designed to increase social competencies, including self-awareness, self-management, social-awareness, relationship skills, decision making, problem solving, and leadership	45-min sessions once per week for 16 weeks; 1 semester
Espelage et al. (2013)	No intervention	Second Step-Student Success Through Prevention Program 6th grade curriculum • Teacher-led classroom curriculum including lessons on bullying, problem solving skills, emotion regulation, empathy, communication • Small-group discussions, dyadic exercises, class instruction, individual work • DVD with rich media content and video demonstrations of skills	Weekly or semi-weekly one 50 min or two 25-min sessions for 15 weeks throughout the school year; 1 school year (~10 months)
Espelage et al. (2015)	Stories of Us – Bullying Program • Two films and educational resources offered to all 18	Second Step-Student Success Through Prevention Program 6th & 7th grade curriculum - see Espelage et al. (2013) • Difference between 6th and 7th grade curricula: number of lessons on each topic;	Weekly or semi-weekly one 50 min or two 25-min sessions (15 weeks in grade 6; 13 weeks in grade 7)

Study	Comparison Group	Description of Intervention	Length of Intervention; Duration between Pretest and Posttest
	schools but adopted in only 1	length of intervention	throughout the school year; 2 school years
Fekkes et al. (2016)	No intervention	Dutch "Skills for Life" program • Teacher-led program on enhancing social, emotional, and moral skills: inter-personal problems, emotion regulation, giving and seeking help, dealing with bullying, setting and respecting boundaries, substance use, norms, values and friendships, sexuality, suicidal thoughts, and conflicts with teachers and peers • Teaching methods: active enactment, DVD, role play, discussion, feedback, making commitments	25 lessons given during the course of 2 school years; Pretest-posttest 1: 1 school year Pretest-posttest 2: 1 school year
Garaigordobil & Martinez-Valderrey (2015)	Regular tutorship program	Cyberprogram 2.0 • Adult-led sessions focused on reducing bullying/cyberbullying (identify and conceptualize bullying/cyberbullying; analyze consequences of bullying/cyberbullying; develop coping strategies and positive attributes) followed by discussion and guided reflection	19 one-hour sessions; ~19 weeks
Gradinger et al. (2014)	No intervention	ViSC Social Competence Program • Teacher trainings to address bullying and implement prevention measures • Class project o Part 1: lessons covering important aspects for bullying prevention o Part 2: creation of environment in which bullying is less likely to occur	2 semesters; 1 year
Houlston & Smith (2009)	N/A	• Peer support counseling: 20-30 min help sessions for resolving personal issues • Reformulation of school's antibullying policy • Curriculum-based activities related to bullying	~4 months (spring term); ~7 months (after autumn half term to after summer half term)
Hunt (2007)	No intervention	• Teacher and parent education meetings • Staff-led classroom discussion of bullying using workbook activities: increase identification of bullying, promote empathy for targets of bullying, help students think about antibullying strategies	One 2-hour discussion; 1 year
Karna et al. (2012)	No intervention	KiVa Antibullying Program (Grades 7-9) • Universal intervention o 13-23 lessons addressing four bullying themes o Virtual learning environment (KiVa Street) to provide knowledge, skills, and motivation to change behavior related to bullying o Visual reminders of the program (e.g., bright vests for recess supervisors) o Information guide for parents • Indicated interventions o Procedures for teachers/personnel for handling acute bullying cases o Teachers encouraged prosocial classmates to support victims	1 school year (~10 months); Pretest-posttest 1: 7 months Posttest1-posttest 2: 12 months
Menesini et al. (2003)	No intervention	• Raise awareness of prosocial behaviors and attitudes in the whole class • Peer supporters work in classrooms with class teachers	~8 months;

Study	Comparison Group	Description of Intervention	Length of Intervention; Duration between Pretest and Posttest
		○ Identify students' needs ○ Assign tasks involving victims and other students who may need help ○ Train other students as peer supporters	~9 months
Menesini et al. (2012)	No intervention	Study 1: Noncadiamointrappola Program – Phase 1 • Group 1: awareness-raising of bullying/cyberbullying • Group 2: awareness-raising of bullying/cyberbullying + peer educators (online & face-to-face educators) promoting antibullying/cyberbullying activities ○ Online: manage an online forum ○ Face-to-face: awareness-raising; meeting with local administrators, police, etc.; TV program about bullying/cyberbullying Study 2: Noncadiamointrappola Program – Phase 2 • Enhancements to Phase 1 • Teachers: support face-to-face educators; production of movie on cyberbullying, guide to safe use of e-mail and social networks, poster against cyberbullying • Peer-to-peer counseling space • Creation of a Facebook group to integrate the online forum	Study 1: ~7 months Study 2: ~6 months; Study 1: ~7 months Study 2: ~6 months
Nese et al. (2014)	N/A	Expect Respect Curriculum • Adult-led classroom lessons on importance of respectful behavior, process/ protocol of routines for responding and reporting bullying, and student-guided problem-solving situations • Faculty and staff training and coaching on responding to bullying	Three 1-hour lessons over a 6-month period; Entire duration: ~7 months Multiple posttests (observational data) during intervention period
Nixon & Werner (2010)	N/A	Creating a Safe School (CASS; The Ophelia Project) • Whole-school, mentor-delivered intervention to promote socioemotional competence and decrease relational aggression (RA) • Staff training on relational aggression, associated detrimental consequences, roles involved, effective strategies to reduce RA • Mentor-led classroom lessons to promote empathy and perspective taking, challenge beliefs about bullying behaviors, and provide opportunities to practice skills related to reducing relational aggression and empowering bystanders to take positive stand against aggression • School task force: review school policies, implement effective strategies to enhance accountability, organize school campaign to raise awareness (posters, banners, daily announcements, bulletin boards, information on school website)	~9 months Mentor-led lessons: 10-12 lessons delivered once or twice a month; ~9 months
Ortega-Ruiz et al. (2012)	No intervention	ConRed Program • Training sessions with students, teaching staff, and families on appropriate use of information and communications technologies • Whole-school awareness-raising campaign using posters, leaflets, bookmarks, stickers, and other materials	8 training sessions conducted with students, 2 with teaching staff, and 1 with family over a 3 months; N/A
Palladino et	No intervention	Noncadiamointrappola Program 2nd edition - see Noncadiamointrappola Phase 2 in	~ 6 months;

Study	Comparison Group	Description of Intervention	Length of Intervention; Duration between Pretest and Posttest
al. (2012)		Menesini et al. (2012)	~6 months
Palladino et al. (2016)	No intervention	Noncadiamointrappola Program 3rd edition - see Menesini et al. (2012) • Standardization of face-to-face activities led by peer educators • New peer-educator led group activities focused on empathy and problem solving, and bullying roles	Trial 1: ~7 months Trial 2: ~7 months; Trial 1 pretest-posttest 1: ~4 months posttest 1-posttest 2: ~3 months posttest 2-posttest 3: 6 months Trial 2: ~7 months
Perkins et al. (2011)	N/A	Social norms intervention • Print media posters displaying positive messages regarding bullying norms at each school based on results from pretest survey	3 schools: 1.5 academic years 2 schools: 1 academic year; 3 schools: ~1.5 academic years 2 schools: ~1 academic year
Peterson & Rigby (1999)	N/A	• School anti-bullying policy • Procedures for a reporting & response system • Teacher training • Inclusion of content and discussion about bullying as part of school curriculum • Student Activities: Anti-Bullying Committee; peer helper group; public speaking group; poster group; drama group, school welcomers for new students, Peer Support Program	~2 years; ~2 years
Richards et al. (2008)	Normal Personal, Social, and Health Education (PSHE) curriculum not including bullying issues	Positive Psychology • PSHE lessons on development and application of individual strengths and qualities within a social context based on eight interpersonal qualities (empathy, altruism, optimism, team spirit, amiability, fairness, social acceptance, patience)	8 lessons over a period of 9 weeks; 9 weeks
Salmivalli (2001)	N/A	• Peer counselor system (organized by Mannerheim League of Child Welfare in Finland) campaign led by peer counselors, teachers, and author of the MLCW • All-school assembly- lecture, drama and band performances related to bullying • Peer-led class discussions about classroom atmosphere, bullying problems, and strategies to reduce bullying • School news broadcast about bullying • Bullying-related posters on schools walls • Small-group contest to complete comic-strip of a bullying situation and solution	1-2 weeks; 5 weeks and 3 days
Schroeder et al. (2012)	N/A	Olweus Bullying Prevention Program • Individual: on-the-spot interventions and follow-up meetings with student who is bullied or student who is bullying • Parent: involvement in school-wide, classroom, and community activities, as well as during individual interventions • Classroom: discussion, class meetings, role playing, enforcement of school rules	HALT! Schools: 2 school years PA Cares: 1 school year; HALT! Schools Pretest-posttest 1: 1 school year Posttest 1-posttest 2: 1 school year

Study	Comparison Group	Description of Intervention	Length of Intervention; Duration between Pretest and Posttest
		• School: school staff training, coordinating committee, school rules • Community: involvement of local government, law enforcement, community agencies, media and other community partners	PA Cares Pretest-posttest: 1 school year
Splett et al. (2015)	No intervention	Growing Interpersonal Relationships through Learning and Systemic Supports • School-based group counseling by trained graduate clinicians, parent training and phone consultation targeting risk factors related to relational aggression in middle school girls	70-min group session per week for 10 weeks; 1 semester
Stevens et al. (2000)	No intervention	Group 1 (Treatment with Support) o Anti-bullying prevention program ▪ Anti-bullying policy ▪ Information sessions for teachers, staff, and parents to increase awareness of bullying ▪ Curricular-based activities: class rules, social skills training, etc. ▪ Targeted interventions for bullies (remediation) & victims (support, social skills enhancement) o Support: specific training sessions for teachers and staff; feedback on intervention strategies during implementation Group 2 (Treatment without Support) o See "anti-bullying prevention program" in Group 1	~1 year 8 months (curricular-based activities involved 4 sessions of almost 100 mins and booster sessions were encouraged; specific training sessions took ~25 hours); Pretest-posttest 1: ~8 months Pretest 1-posttest 2: 1 year
Swaim & Kelly (2008)	No intervention	"Resolve It, Solve It" Program • Media campaign featuring trained local high school youth in print, radio, and television PSAs targeting three themes: (1) respect for individual differences, (2) conflict resolution, and (3) anti-bullying • Distribution of promotional items with tag line • Presentations to local school boards • Classroom presentations on non-violence • All-school assemblies • Community-wide events focused on non-violence	~2 years (PSAs displayed twice monthly; ~8 classroom presentations conducted each year; 1 community event each year); Pretest-posttest 1: 1 year Posttest 1-posttest 2: 1 year
Tanrikulu et al. (2015)	No intervention	Sensibility Development Program against Cyberbullying • Adult-led group activities aimed at increasing cyberbullying awareness • Computer-simulated lecture aimed at increasing technical knowledge about cyberspace and expert-led discussion to increase awareness of cyber security	5 sessions (70-80 mins each); 5 weeks
Wolfer et al. (2014)	No intervention	Group 1: Media Heroes Cyberbullying Prevention Program (long version) • Teacher-led curriculum with 8 modules: psychoeducation of definitions, legal rights, online security options, social skills training, awareness concerning consequences and legal risks of cyberbullying, improving social responsibility or overall class climate, online strategies when confronted with cyberbullying o Module 7: students educate parents about new media and cyberbullying Group 2: Media Heroes Cyberbullying Prevention Program (short version)- same content as long version	Long version: 90-min session per week for 10 weeks Short version: four 90-min session for 1 day; 9 months

Table 6. Intervention Components.[1]

Study	Youth		Parent/Family				Classroom					School									Community				
	Adult-led support/counseling/remediation	Peer-led mentoring/support/counseling	Notification./information materials (online resources, information guide)	Presentation/meeting/information session/event	Training	Consultation	Presentation/meeting/information session	Adult-led curricular activities/training	Peer-led curricular activities/training	Class rules	Enforcement of school rules	Bullying committee	Assembly	Reporting & response system	Teacher/staff meeting	Teacher/staff training	School rules	Media campaign (print materials, public address system, social media)	Distribution of promotional items	Identification and monitoring of/increased supervision in targeted areas	Presentation/meeting with community officials (school boards, administrators, police)	Training	Event	Media campaign (print materials, radio, TV)	Distribution of promotional items
YOUTH ONLY (n=2)																									
Dellasega & Adamshick (2005) - Club Ophelia™		X																							
Splett et al. (2015)	X				X	X																			
CLASSROOM ONLY OR SCHOOL ONLY (n=14)																									
Athanasiades et al. (2015) – "TABBY in Internet" Project								X																	
Baldry & Farrington (2004) – Bullies & Pupe (Bullies and Dolls)								X																	
Boulton & Flemington (1996)								X																	
Chaux et al. (2016) – Medienhelden (Media Heroes)				X				X																	
Connolly et al. (2014) – Respect in Schools Every-where (RISE)									X																
Domino (2013) – Take the Lead (TTL)								X																	

Study	Youth		Parent/Family				Classroom					School									Community				
	Adult-led support/counseling/remediation	Peer-led mentoring/support/counseling	Notification./information materials (online resources, information guide)	Presentation/meeting/information session/event	Training	Consultation	Presentation/meeting/information session	Adult-led curricular activities/training	Peer-led curricular activities/training	Class rules	Enforcement of school rules	Bullying committee	Assembly	Reporting & response system	Teacher/staff meeting	Teacher/staff training	School rules	Media campaign (print materials, public address system, social media)	Distribution of promotional items	Identification and monitoring of/increased supervision in targeted areas	Presentation/meeting with community officials (school boards, administrators, police)	Training	Event	Media campaign (print materials, radio, TV)	Distribution of promotional items
Espelage et al. (2013) – Second Step-Student Success Through Prevention (SS-SSTP) Program								**X**																	
Espelage et al. (2015) – Second Step-Student Success Through Prevention (SS-SSTP) Program								**X**																	
Fekkes et al. (2016) – Dutch "Skills for Life" Program								**X**																	
Garaigordobil & Martinez-Valderrey (2015) – Cyberprogram 2.0								**X**																	
Perkins et al. (2011)																		**X**							
Richards et al. (2008)								**X**																	
Tanrikulu et al. (2015) – Sensibility Development Program against Cyberbullying								**X**																	
Wolfer et al. (2014) – Medienhelden (Media Heroes)				**X**				**X**																	

Study	Youth		Parent/Family				Classroom					School									Community				
	Adult-led support/counseling/remediation	Peer-led mentoring/support/counseling	Notification./information materials (online resources, information guide)	Presentation/meeting/information session/event	Training	Consultation	Presentation/meeting/information session	Adult-led curricular activities/training	Peer-led curricular activities/training	Class rules	Enforcement of school rules	Bullying committee	Assembly	Reporting & response system	Teacher/staff meeting	Teacher/staff training	School rules	Media campaign (print materials, public address system, social media)	Distribution of promotional items	Identification and monitoring of/increased supervision in targeted areas	Presentation/meeting with community officials (school boards, administrators, police)	Training	Event	Media campaign (print materials, radio, TV)	Distribution of promotional items
CLASSROOM + SCHOOL (n=9)																									
Cross et al. (2016) - Cyber Friendly Schools Program			X		X			X	X						X	X	X								
Del Rey et al. (2016) - ConRed Program					X			X								X		X							
Gradinger et al. (2014) - ViSC Social Competence Program								X								X									
Hunt (2007)				X				X							X										
Nese et al. (2014) - Expect Respect Curriculum								X								X									
Nixon & Werner (2010) - Creating A Safe School (CASS; The Ophelia Project)									X							X	X	X							
Ortega-Ruiz et al. (2012) - ConRed Program					X			X								X		X							
Salmivalli (2001)									X				X					X							
Swaim & Kelly (2008)									X				X					X	X			X	X	X	X
YOUTH + CLASSROOM OR YOUTH + SCHOOL (n=2)																									
Cowie & Olafsson (2000)		X											X					X							
Menesini et al. (2003)		X					X																		
YOUTH + CLASSROOM + SCHOOL (n=11)																									

Study	Youth		Parent/Family				Classroom					School									Community				
	Adult-led support/counseling/remediation	Peer-led mentoring/support/counseling	Notification./information materials (online resources, information guide)	Presentation/meeting/information session/event	Training	Consultation	Presentation/meeting/information session	Adult-led curricular activities/training	Peer-led curricular activities/training	Class rules	Enforcement of school rules	Bullying committee	Assembly	Reporting & response system	Teacher/staff meeting	Teacher/staff training	School rules	Media campaign (print materials, public address system, social media)	Distribution of promotional items	Identification and monitoring of/increased supervision in targeted areas	Presentation/meeting with community officials (school boards, administrators, police)	Training	Event	Media campaign (print materials, radio, TV)	Distribution of promotional items
Allen (2010)	X			X				X					X	X											
Bauer et al. (2007) - Olweus Bullying Prevention Program[2]	X		X	X				X			X	X	X	X	X	X	X			X		X			
Bowllan (2011) - Olweus Bullying Prevention Program[3]	X		X	X							X	X	X	X	X	X	X			X				X	
Houlston & Smith (2009)		X						X									X								
Karna et al. (2012) - KiVa Antibullying Program	X	X	X	X				X						X		X		X							
Menesini et al. (2012) - Noncadiamointrappola 1st & 2nd ed.		X					X						X					X			X		X		
Palladino et al. (2012) - Noncadiamointrappola 2nd ed.		X					X						X					X			X		X		
Palladino et al. (2016) - Noncadiamointrappola 3rd ed.		X					X		X				X					X			X		X		
Peterson & Rigby (1999)	X	X							X				X	X		X	X	X							
Schroeder et al. (2012) - Olweus Bullying Prevention Program[4]	X		X					X			X	X		X		X	X				X			X	
Stevens et al. (2000)	X			X				X		X					X	X	X								

[1] Studies conducted in the United States are highlighted in yellow.
[2] The OBPP was implemented at 7 sites. Results indicated varying levels of implementation fidelity among sites. All core components of the OBPP, regardless of the number of schools that implemented the component, were noted.
[3] The "Reporting & response system" category included the development of a system of positive reinforcement for prosocial behavior and disciplinary process for bullying as well as protocols for contacting parents when bullying incidences occurred.
[4] The areas of concentration of the OBPP were listed; however, implementation of interventions and intervention components were not clearly described.

Table 7. Study Results.

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
Allen (2010)	Before the intervention, 15.2% of students reported victimization; after the intervention, 18.3% reported victimization. The difference was not statistically significant (p=0.092). Stratifying the results by gender revealed that males reported more victimization after the intervention (21.0%) than before (15.9%), and the difference approached significance (p=0.065). There was no statistically significant difference in self-reported victimization for females after the intervention as compared to before the intervention (p>0.05). Stratifying the results by grade level indicated a statistically significant increase in reporting of victimization for ninth graders (p=0.009) with 26.0% reporting victimization after as compared to 16.3% before.	N/A	Results showed a statistically significant difference between the before- and after-intervention groups (p=0.001) with 7.3% of students reporting that they had bullied others after the intervention compared with 13.6% before. Stratifying the results by gender showed that the difference was statistically significant for both males and females (p<0.05). Stratifying by grade level also showed that the differences were statistically significant for every grade (p<0.05).	N/A
Athanasiades et al. (2015)	N/A	After the intervention, students in the intervention group scored significantly lower at the set of questions about the forms of cybervictimization they had experienced during the last six months (p=0.016).	N/A	N/A
Baldry & Farrington (2004)	Data were analyzed by looking at the differences between younger students (1st and 2nd year of middle schools) versus older students (3rd year of middle school and 1st year of high school). For the single item question about victimization ('Have you been bullied at school in the previous three months?'), there was a significant decrease in the intervention group compared to the control group for older students (p<0.01). For younger students, there was a significant increase in the intervention group compared to the control group (p<0.01).	N/A	Data were analyzed by looking at the differences between younger students (1st and 2nd year of middle schools) versus older students (3rd year of middle school and 1st year of high school). For the single item question about bullying ('Have you bullied others in the previous three months?'), there was a significant increase in the reported level of bullying in the intervention group compared to the control group for younger students (p<0.01), and no significant effect for older students.	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
	For the composite measure of total victimization, there was a decrease in the intervention group compared to the control group for older students ($p<0.05$). There was no significant difference between the intervention and control group for younger students. For the item related to physical victimization ('I was physically hurt, e.g. hit and kicked'), no significant effects were found for younger or older students. With regard to items related to verbal victimization, for 'I was called nasty names,' there was a decrease in the intervention group compared to the control group for older students ($p<0.05$), and no significant effect for younger students. For 'I was threatened,' no significant effects were observed for younger or older students. With regard to items related to relational victimization, no significant effects were found for 'Others did not talk to me on purpose' and 'Others spread rumors about me' for younger or older students. For 'No one would stay with me at recess time,' there was a decrease in the intervention group compared to the control group for younger students ($p<0.05$), and no significant effect for older students. For the item related to damage to property ('I had my belongings stolen or ruined'), there was a significant decrease in the intervention group compared to the control group for older students ($p<0.01$), and no significant effect for younger students.		For the composite measure of total bullying, no significant effects were found for younger or older students. For the item related to physical bullying ('I physically hurt, e.g. hit and kicked'), there was a significant increase in the intervention group compared to the control group for younger students ($p<0.01$). For older students, the intervention group decreased compared to the control group ($p<0.01$). With regard to items related to verbal bullying, for 'I called someone nasty names,' there was a significant increase in the intervention group compared to the control group for younger students ($p<0.01$), and no significant effect for older students. For 'I threatened,' no significant effects were found for younger or older students. For both items related to relational bullying ('I did not talk to someone on purpose' and 'I spread rumors about someone'), no effects were found for younger or older students. For the item related to damage to property ('I stole or ruined belongings'), there was an increase in the intervention group compared to the control group for younger students ($p<0.05$), and no significant effect for older students.	
Bauer et al. (2007)	Overall, there was no difference in relational (RR=0.96, 95% CI: 0.86-1.08) or physical (RR = 1.01, 95% CI: 0.87-1.17) victimization comparing the intervention schools to the control schools	N/A	N/A	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
	over the two-year period. When stratified by race/ethnicity, white students in intervention schools were 27.5% less likely to report relational (RR=0.72, 95% CI: 0.53-0.98) and 36.6% less likely to report physical victimization (RR=0.63, 95% CI: 0.42-0.97) compared to white students in control schools. No statistically significant results were found for students of other race/ethnicity groups. No significant effects were found when results were stratified by gender or grade.			
Boulton & Flemington (1996)	N/A	N/A	The mean (SE) scores on the "Tendency to bully others" scale in the intervention group were 9.0 (2.1) and 9.3 (2.2) for Time 1 and Time 2 respectively, and 14.8 (5.3) and 14.8 (5.1) for the control group respectively. Since none of the interactions that involved time and condition factors were significant, there was no evidence that the intervention led students to report less bullying of others.	N/A
Bowllan (2011)	The study only reported significant findings and findings with percentile changes of 15% or more. With regard to composite victimization, comparing 7th grade females post-intervention to those pre-intervention, there was a 31.1% decrease in reports of being bullied (p=0.022). Comparing 8th grade females post-intervention to those pre-intervention, there was a 25.0% increase in reports of the frequency of being bullied (p=0.038). With regard to physical victimization, comparing 8th grade females post-intervention to those pre-intervention, there was a 20.0% increase in reports of being physically bullied (p=0.035). With regard to verbal victimization, comparing 8th grade females post-	N/A	The study only reported significant findings and findings with percentile changes of 15% or more. With regard to composite victimization, comparing 8th grade females post-intervention to those pre-intervention, there was a 35.6% increase in reports of taking part in bullying others (p=0.003). For 7th grade males, there was a 21.8% increase in reports of taking part in bullying others; however, the difference did not reach statistical significance.	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
	intervention to those pre-intervention, there was a 35.0% decrease in reports of being indirectly verbally bullied (p=0.035). With regard to relational victimization, comparing 7th grade females post-intervention to those pre-intervention, there was a 34.4% decrease in reports of being excluded (p=0.009).			
Chaux et al. (2016)	Overall results- N/A (Pairwise comparisons significance tests were not conducted for this variable, given that no significant interactions were found in the main analyses). Subgroups analyses were conducted based on students' initial status in terms of their level of victimization and perpetration. For victimization, students were categorized as cybervictim only, traditional victim only, both cyber- and traditional victim, and non-victim. Pairwise comparisons revealed significant differences for traditional victims only, cybervictims only, and non-victims. For traditional victims, there was a decrease for the short (p=0.01) and long (p=0.02) interventions, while the control group did not change significantly (p=0.62). For cybervictims, the control (p=0.19) and long (p=0.72) intervention conditions did not change significantly; the short intervention showed an increase (p=0.00) in traditional victimization after the intervention. For non-victims, there was an increase for both the control (p=0.04) and short (p=0.03) intervention conditions, while the long intervention did not change significantly (p=0.30).	Overall results- NA (Pairwise comparisons significance tests were not conducted for this variable, given that no significant interactions were found in the main analyses). Subgroups analyses were conducted based on students' initial status in terms of their level of victimization and perpetration. For victimization, students were categorized as cybervictim only, traditional victim only, both cyber- and traditional victim, and non-victim. No significant interactions were found for cyberbullying victimization.	For traditional bullying, a significant decrease was found for students in the long intervention group, but students in the control group and in the short intervention group did not significantly change in this behavior after the implementation of the intervention. Subgroups analyses were conducted based on students' initial status in terms of their level of victimization and perpetration. For perpetration, students were categorized as cyberbully only, traditional bully only, both cyber- and traditional bully, and non-bully. Pairwise comparisons revealed significant differences for cyber- and traditional bullies and non-bullies. For cyber- and traditional bullies, there was a decrease in both short (p=0.00) and long (p=0.00) interventions, while the control group did not change significantly (p=0.24). For the non-bullies, both the control (p=0.01) and short (p=0.04) intervention conditions showed an increase in traditional bullying perpetration, while the long intervention did not change significantly (p=0.21).	For cyberbullying, students in the control group increased significantly in this behavior, while students in the long intervention group showed a significant decrease. Students in the short version group did not show a significant change. Subgroups analyses were conducted based on students' initial status in terms of their level of victimization and perpetration. For perpetration, students were categorized as cyberbully only, traditional bully only, both cyber- and traditional bully, and non-bully. No significant interactions were found for cyberbullying perpetration.
Connolly et al. (2014)	Reports of bullying victimization did not change significantly for students in the intervention or control group.	N/A	N/A	N/A
Cowie & Olafsson (2000)	No significant changes were found in the incidence of bullying victimization (been bullied 'sometimes' or more this term;	N/A	Comparing post-intervention to pre-intervention, no significant change was found for the percentage of students	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
	been bullied 'once' or more in the last 5 days) over the period when the intervention was in place. The students' average estimate of the number of victims (including self) in their own class was 2.64 (SD=2.13) before the intervention and 2.63 (SD=2.1) after the intervention (not significant).		reporting "bullied others 'sometimes' or more this term," but there was a significant increase for "bullied others 'once' or more in the last 5 days" (p=0.03). The students' average estimate of the number of bullies (including self) in their own class was 2.39 (SD=2.41) before the intervention and 2.46 (SD=2.23) after the intervention (not significant).	
Cross et al. (2016)	N/A	The intervention was associated with a steeper decline in the log odds of cybervictimization (p=0.028) between pretest and the first posttest. Trends in the log odds between the first posttest and the second posttest were similar (p=0.380). For involved students, the intervention had no impact on the frequency or extent of cyberbullying exposure.	N/A	The intervention was associated with a steeper decline in the log odds of cyber perpetration (p=0.012) between pretest and the first posttest. Trends in the log odds between the first posttest and the second posttest were similar (p=0.165). For involved students, the intervention had no impact on the frequency or extent of cyberbullying perpetration.
Del Rey et al. (2016)	Comparing the intervention to the control group of cyber-victims, significant reductions were observed for traditional bullying victimization (p=0.008). For cyberbully/victims, significant reductions were observed in traditional bullying victimization among boys (p=0.007).	Comparing the intervention to the control group of cyber-victims, significant reductions were observed for cyberbullying victimization (p=0.03). For cyberbully/victims, significant reductions were observed in cyberbullying victimization among boys (p=0.05).	N/A	Comparing the intervention to the control group of cyber-aggressors, significant decrease was observed for cyberbullying aggression among boys (p=0.04). Comparing the intervention to the control group of cyberbully/victims, significant decrease was observed for cyberbullying aggression (p=0.007).
Dellasega & Adamshick (2005)	On average, girls reported being hurt less by relational aggression in the week prior to survey administration (5.2 times pre-intervention and 3.04 times post-intervention). Girls also reported seeing others hurt by relational aggression less (6.3 times pre-intervention and 4.8times post-intervention). However, these changes did not reach statistical significance.	N/A	On average, no change was observed; girls reported using relational aggression the same number of times pre- and post-intervention (2.4 times) in the week prior to survey administration.	Girls reported sending hurtful relational aggression messages via the computer fewer times post-intervention (0.76 times) compared to pre-intervention (1.1 times) in the week prior to survey administration. However, the change did not reach statistical significance.
Domino (2013)	Results for the fall 2009 intervention revealed significant differences in mean victim sum scores (p<0.001) at posttest between the intervention (decrease from 2.48 to 1.26) group and control group (increase from 1.41 to 2.25) over the same time period.	N/A	Results for the fall 2009 intervention revealed significant difference in mean bully sum scores (p<0.001) at posttest between the intervention group (decrease from 1.15 to 0.68) and control group (increase from 1.39 to 1.98) over the same time period.	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
	Results for the spring 2010 intervention showed that controls receiving the intervention reported reduced victimization with a decrease in mean victim sum scores from 2.25 to 1.12 ($p<0.001$). Results remained significant after controlling for sex. Results by sex mimicked the results shown by the groups as a whole. For the intervention group, victimization was significantly reduced among males and females, with mean sum scores decreasing from 2.55 to 1.35 among males from pretest to posttest, and 2.41 to 1.18 among girls. Among controls, an initial increase in victim sum scores was seen during the fall 2009 intervention, followed by significant reductions after participation in the intervention.		Results for the spring 2010 intervention showed that controls receiving the intervention reported a significant decrease in mean bully sum scores from 1.98 to 1.04 in bullying ($p<0.001$). Results remained significant after controlling for sex. Results by sex mimicked the results shown by the groups as a whole. For the intervention group, significant bullying reductions were reported among males and females, with mean sum scores decreasing among males from 1.53 to 0.88 from pretest to posttest, and 0.84 to 0.52 among girls. Among controls, an initial increase in bully sum scores was seen during the fall 2009 intervention, followed by significant reductions after participation in the intervention.	
Espelage et al. (2013)	The results indicated no significant intervention effect for peer victimization. There was no significant intervention effect for homophobic name-calling victimization.	N/A	The results indicated no significant intervention effect for verbal/relational bullying perpetration. Relative to students in control schools, students from intervention schools were 42% less likely to report physical aggression ($p<0.05$). There was no significant intervention effect for homophobic name-calling perpetration.	N/A
Espelage et al. (2015)	Overall, no significant intervention effect was found for peer victimization (OR=0.94, 95% CI: 0.75-1.18). No reductions were found for Illinois or Kansas schools. Overall, there was no significant intervention effect for homophobic name-calling victimization (OR=0.85, 95% CI: 0.66-1.08). However, results indicated that students in Illinois schools were 53% less likely to be victimized by homophobic name-calling (OR=0.64, 95% CI: 0.50-0.82) when compared to students in control schools; results were non-	N/A	Overall, no significant intervention effect was found for verbal/relational bullying perpetration (OR=0.85, 95% CI: 0.63-1.15). No reductions were found for Illinois or Kansas schools. Overall, there was no significant intervention effect for physical aggression (OR=0.80, 95% CI: 0.59-1.08). No reductions were found for Illinois or Kansas schools. Overall, there was no significant intervention effect for homophobic name-calling perpetration (OR=0.92, CI: 0.73-	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
	significant for students in Kansas schools.		1.16). No reductions were found for Illinois or Kansas schools.	
Fekkes et al. (2016)	At the end of the first year, students who received the intervention reported less often being bullied compared to those in the control schools (OR=0.30, 95% CI: 0.10-0.92, p=0.03); the difference was not significant at the end of the second year (p=0.20).	At the end of the first year, more students in the intervention group reported being digitally bullied compared to the control group (OR=20.19, 95% CI: 1.20-338.92, p=0.03); the difference was not significant at the end of the second year (p=0.13).	At the end of the first year, no difference was found between the students in the intervention group and the control group (p=0.90). At the end of the second year, fewer students in the intervention group reported that they bullied other students compared to the control group (OR=0.08, 95% CI: 0.02-0.30, p<0.01). Stratified analyses in subgroups of educational level showed that lower educational level students in the intervention group indicated that they were less likely to bully other students compared to the control group at the end of the second year (OR=0.05, 95% CI: 0.01-0.25). This effect was not present among the higher educational level students.	N/A
Garaigordobil & Martinez-Valderrey (2015)	The intervention group significantly decreased while the control group increased in bullying victimization. The mean difference was statistically significant (p=0.024).	The intervention group significantly decreased while the control group increased in cyberbullying victimization. The mean difference was statistically significant (p=0.000).	The intervention group significantly decreased while the control group increased in bullying perpetration. The mean difference was statistically significant (p=0.021).	The intervention group significantly decreased while the control group increased in cyberbullying perpetration. The mean difference was statistically significant (p=0.000).
Gradinger et al. (2014)	N/A	Controlling for traditional aggression and victimization (Model 1), cybervictimization did not change between pre- and posttest in the control group (p=0.259), while it significantly decreased in the intervention group (p<0.01). The mean difference between the two groups was statistically significant (p<0.01). With the addition of age as a covariate (Model 2), the results did not differ substantially, only the effect size estimates. Subgroup analyses for girls showed similar results as Model 1 and Model 2 for cybervictimization; comparing the intervention group to the control group showed that the intervention significantly decreased cybervictimization (p<0.01). However, among boys, no statistical change was found in the differences between the control and intervention group	N/A	Controlling for traditional aggression and victimization as covariates (Model 1), cyberbullying increased in the control group (p<0.01), but decreased in the intervention group (p<0.01). The mean difference between the two groups was statistically significant (p<0.001). With the addition of age as a covariate (Model 2), the results did not differ substantially, only the effect size estimates. Subgroup analyses for girls and boys showed similar results as Model 1 and Model 2 for cyberbullying. Comparing the intervention group to the control group showed that the intervention significantly decreased cyberbullying in both girls (p<0.01) and boys (p<0.001).

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
		(p=0.061).		
Houlston & Smith (2009)	Across all grade levels, there was no significant difference between pretest and posttest in the number of students who reported recent victimization (p=0.54). Examining the results by grade level showed that reported recent victimization remained the same in year 7 (p=1), year 8 (p=0.24), and year 9 (p=0.82).	N/A	Across all grade levels, there was no significant difference between pretest and posttest in the number of students who reported recent bullying behavior (P<0.127). Examining the results by grade level showed that reported recent bullying remained the same in year 7 (p=0.53) and year 9 (p=0.81), but increased significantly in year 8 (p<0.05).	N/A
Hunt (2007)	No significant main or interaction effects were found.	N/A	Students in the intervention schools reported a significantly greater reduction in bullying others than students in the control groups with regard to bullying others alone (p<0.01). Boys showed greater reductions in their reported bullying others when alone (p<0.01). Significant intervention by sex interactions were also found for bullying others alone (p<0.01). Boys in the intervention group showed significant reduction in their reports of bullying compared to boys in the control schools and compared to girls in both conditions. The effect size of this decrease was large (0.90), but represented a small number of boys (n=25) in a single intervention school. For boys bullying others as part of a group, the main and interaction effects were significant at 0.05.	N/A
Karna et al. (2012)	The intervention showed no statistically significant effects on self-reported victimization. The intervention reduced peer-reported victimization (p<0.001) with an interaction with age of student (p<0.01). Victimization decreased significantly for younger students (at or below the average for students in Grade 8), but did not have an effect for older students (at the average age for Grade 9) (p=0.670).	N/A	The intervention showed no statistically significant effects on self-reported bullying. The intervention effect on peer-reported bullying was not statistically significant (p=0.854). Due to interaction effects, this result only applies to girls in classrooms with an average proportion of boys. At the student level, there was a significant interaction with gender (p<0.01), and the interaction was significantly stronger at the classroom than at the individual level	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
			(p=0.008). Through these interactions, bullying was found to be reduced for boys and the effect was stronger when the proportion of boys in the classroom was higher. Bullying was not reduced for girls, but the effect approached statistical significance when a girl was in a classroom with a high proportion of boys (p=0.060).	
Menesini et al. (2003)	Although the Victim scale increased in value in the control group, and decreased in the intervention group, the effect did not reach significance (p=0.19).	N/A	The Bully Scale increased in value in the control group, while it decreased in the intervention group. The interaction between time and group was significant (p<0.05). The increase in the control group is due mainly to the boys (p<0.05).	N/A
Menesini et al. (2012)	Study 1: No significant main or interaction effects were found for victimization. Study 2: For victimization, there was a significant interaction of time and group (p<0.01), showing a decrease over time in the intervention group as compared to the control group. Among all students in the intervention group, the intervention effect was found for both peer educators as well as other students in the intervention classes.	Study 1: No significant main or interaction effects were found for cybervictimization. Study 2: For cybervictimization, there was a significant interaction of time and group (p<0.05), showing a decrease over time in the intervention group as compared to the control group. Among all students in the intervention group, the intervention effect was found for both peer educators as well as other students in the intervention classes.	Study 1 No significant main or interaction effects were found for bullying. Study 2: For bullying, there was a significant interaction of time and group (p<0.05), showing a decrease over time in the intervention group as compared to the control group. Among all students in the intervention group, the intervention effect was found for both peer educators as well as other students in the intervention classes.	Study 1: Cyberbullying decreased significantly from pretest to posttest for the peer educator group only (not the awareness group or the control group) (p<0.05), and in particular for male peer educators (p<0.05). Study 2: No significant intervention effect was found for cyberbullying.
Nese et al. (2014)	N/A	N/A	Each school demonstrated reduction in rates of physical and verbal aggression after introduction of the intervention. Prior to the intervention, Schools 1, 2, and 3 averaged 4, 2.44, and 2.37 incidents of aggression respectively per 20-min observation. In the intervention phases, Schools 1, 2, and 3 averaged 0.89, 0.88, and 0.64 incidents respectively per 20-min observation. Taken together, Schools 1, 2, and 3 experienced a 78%, 64%, and 73% reduction in level of aggression respectively. However, statistical significance was not reported.	N/A
Nixon & Werner (2010)	Students were classified into the non-victimized, average, or high-victimized group based on their pretest relational victimization scores. Results showed that the intervention effect	N/A	Students were classified into the non-aggressive, average, or high-aggressive based on their pretest relational aggression scores. The intervention effect was significant for	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
	was significant for all three groups of students for both physical and relational victimization. Students in the non-victimized and average groups reported increasing levels of physical and relational victimization from pretest to posttest, while students in the high-victimized group reported decreases in both forms of victimization over time.		all three groups of students for both physical aggression and relational aggression with one exception: reports of physical aggression among students in the high-aggressive group did not change significantly from pretest to posttest. Students in the non-aggressive and average groups reported increases in physical aggression. Results showed that students in the non-aggressive and average groups reported increasing levels of relational aggression from pretest to posttest, whereas students in the high-aggressive group reported decreases in relational aggression over time. Results showed that although males reported higher levels of aggression than females did, both males and females reported slight increases in aggression between pretest and posttest.	
Ortega-Ruiz et al. (2012)	Comparing the intervention group to the control group, the level of traditional bullying victimization decreased significantly ($p=0.011$). This decrease occurred among both boys and girls ($p<0.05$), although the decrease was much greater among boys ($p<0.01$).	Comparing the intervention group to the control group, the level of cyberbullying victimization decreased significantly ($p=0.019$). Subgroups analyses by sex showed no significant effects.	Comparing the intervention group to the control group, the level of traditional bullying aggression did not change significantly ($p=0.882$). However, subgroup analyses showed that the decrease was significant in boys ($p<0.01$), but not girls.	Comparing the intervention group to the control group, the level of cyberbullying aggression decreased significantly ($p=0.014$). Subgroups analyses by sex showed no significant effects.
Palladino et al. (2012)	In comparison to the control group, the intervention group decreased significantly in victimization ($p<0.01$). Among all students in the intervention group, the intervention effect was found for both peer educators as well as other students in the intervention classes.	In comparison to the control group, the intervention group decreased significantly in cybervictimization ($p<0.05$). Among all students in the intervention group, the intervention effect was found for both peer educators as well as other students in the intervention classes.	In comparison to the control group, the intervention group decreased significantly in bullying ($p<0.05$). Among all students in the intervention group, the intervention effect was found for both peer educators as well as other students in the intervention classes.	Comparing the intervention group to the control group, no significant effect was found for cyberbullying.
Palladino et al. (2016)	Trial 1: Compared to the control group, the intervention group showed a significant decrease in victimization ($p<0.001$). The reduction was stable 6 months after the intervention ended. Trial 2: Compared to the control group, the intervention, the intervention group showed a significant decrease in victimization ($p<0.001$). No significant	Trial 1: Compared to the control group, the intervention group showed a significant decrease in cybervictimization ($p<0.001$). The reduction was stable 6 months after the intervention ended. Trial 2: Compared to the control group, the intervention group showed a significant decrease in cybervictimization ($p<0.001$). No significant interaction effect was found	Trial 1: Compared to the control group, the intervention group showed a significant decrease in bullying ($p<0.001$). The reduction was stable 6 months after the intervention ended. Trial 2: Compared to the control group, the intervention, the intervention group showed a significant decrease in bullying ($p<0.001$). A significant interaction effect	Trial 1: Compared to the control group, the intervention group showed a significant decrease in cyberbullying ($p<0.001$). The reduction was stable 6 months after the intervention ended. Trial 2: Compared to the control group, the intervention, the intervention group showed a significant decrease in cyberbullying ($p=0.02$). No significant

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
	interaction effect was found for time*group*gender (p=0.59).	for time*group*gender (p=0.62).	was found for gender. A significant decrease was found for both boys ($p<0.001$) and girls ($p<0.001$) in the intervention group, while the boys in the control group showed a significant increase ($p<0.004$) and the girls in the control group ($p=0.12$) did not change significantly.	interaction effect was found for time*group*gender (p=0.18).
Perkins et al. (2011)	Results were reported separately for each school. Bullying victimization decreased for all five schools (rates of change ranged from 9% to 34%). The decrease was statistically significant for three of the five schools. The extent of reductions across school sites was associated with the prevalence and extent of recall of seeing poster messages reporting positive peer norms based on pretest survey data. Rates of change were highest for the school with the highest recall by students after the intervention.	N/A	Results were reported separately for each school. Bullying perpetration decreased for all five schools (rates of change ranged from 4% to 35%). The decrease was statistically significantly for three of the five schools. The extent of reductions across school sites was associated with the prevalence and extent of recall of seeing poster messages reporting positive peer norms based on pretest survey data. Rates of change were highest for the school with the highest recall by students after the intervention.	N/A
Peterson & Rigby (1999)	Overall, there was not a decline in reported victimization at posttest. However, for students in Grade 7, the mean Victim Score decreased significantly from pretest to posttest ($p=0.05$). For students in Grade 9, the mean score increased significantly from pretest to posttest ($p<0.05$). No significant changes in victimization were found for students in Grades 10 and 11.	N/A	N/A	N/A
Richards et al. (2008)	No significant change was found for any of the bullying items between pretest and posttest in the control school. All results reported henceforth pertain to the intervention school. There was a significant reduction in reports of bullying with 70.6% of students saying they had not been bullied in the past two weeks at pretest and 79.2% at posttest ($p\leq0.05$). No significant difference was found for the item related to physical victimization ('I've been hit or kicked'). With regard to items related to verbal	N/A	N/A	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
	victimization, no difference was found for 'I've been called names about my ethnicity or color.' A significant decrease from 22.5% at pretest to 14.4% at posttest was found for 'I've been called other names' ($p \leq 0.05$). No significant differences were found for items related to relational victimization ('Rumors have been spread about me,' 'No one speaks to me,' and 'I've seen graffiti about me'). No significant differences were found for items related to damage to property ('I've had my belongings taken' and 'My homework has been taken or destroyed').			
Salmivalli (2001)	After the intervention, there was a decline in self-reported bullying victimization (pretest: 9.0%; posttest: 4.2%). A decline was seen in 7th grade girls (pretest: 14.6%; posttest: 2.1%) and in 7th grade boys (pretest: 8.5% and 4.3%). An increase was seen in 8th grade girls (pretest: 4.5%; posttest: 9.1%). No change was observed for 8th grade boys (pretest and posttest: 3.7%). However, statistical significance was not reported. Overall, there was no significant change in peer-reported bullying victimization measured by the average number of students the classmates reported as being bullied by others. However, among 7th grade girls, there was a significant decline in the average number of students classmates reported as bullied by others at posttest ($p<0.05$). No significant changes were found for 7th grade boys, 8th grade girls, and 8th grade boys. Peer-reported bullying measured by the number of students named as victims before and after the intervention by at least three classmates appeared to show no significant change before and after the intervention; statistical significance was not reported.	N/A	The total mean score of observed physical, verbal, and indirect bullying and attacks on property showed no significant difference before and after the intervention. Subgroup analyses showed that girls who were victims before the intervention reported a significant decrease in the mean score. Girls who were non-victims and boys who were victims did not report a significant change. Boys who were non-victims reported a significant increase.	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
Schroeder et al. (2012)	Schools that agreed to district-wide implementation became part of HALT!, while districts that chose to implement at the building level became part of PA CARES. Results were reported separately for the different sites. Results from 999 high school students in 3 schools in Cohort 1 after 2 years of program implementation of HALT! showed a statistically significant decrease in reports of being bullied. Results from 6048 high school students in 7 schools after 1 year of program implementation of PA CARES showed a significant decrease in reports of being bullied.	N/A	Schools that agreed to district-wide implementation became part of HALT!, while districts that chose to implement at the building level became part of PA CARES. Results were reported separately for the different sites. Results from 999 high school students in 3 schools in Cohort 1 after 2 years of program implementation of HALT! showed a statistically significant decrease in reports of bullying others. Results from 7446 high school students in 13 schools in Cohort 2 after 1 year of program implementation of HALT! showed statistically significant fewer reports of bullying others and fewer reports of students who could join in bullying. Results from 12972 middle school students in 15 schools in Cohort 2 after 1 year of program implementation of HALT! showed statistically significant fewer reports of students who could join in bullying. Results from 9899 middle school students in 13 schools after 1 year of program implementation of PA CARES showed a slight but non-significant decrease in the reports of students bullying others. Results from 6048 high school students in 7 schools showed a significant decrease in reports of bullying others.	N/A
Splett et al. (2015)	N/A	N/A	As reported by the school counselors, intervention participants demonstrated a statistically significant change in relational aggression in the desired direction compared to control participants (p=0.038). No significance was found for both self-report (p=0.991) and teacher report (p=0.283). The averaged teacher and school counselor report showed a significant change in the desired direction for the intervention group compared to the control group (p=0.038).	N/A
Stevens et al.	Study only reported significant effects.	N/A	Study only reported significant effects.	N/A

Study	Victimization		Perpetration/Aggression	
	Traditional Bullying	**Cyberbullying**	**Traditional Bullying**	**Cyberbullying**
(2000)	A significant difference was found for the Treatment with Support group vs. the Treatment Without Support group, showing an increase in mean scores in the Treatment with Support group at posttest 1 and no change at posttest 2 and a small decrease in the Treatment without Support group at posttest 1 and 2. Students in the control group did not differ from students in both condition groups.		A significant difference was found for the Treatment with Support group vs. Treatment without Support group ($p<0.004$), showing an increase at posttest 1 and 2 for the Treatment with Support group and a decrease at posttest 2 for Treatment without Support group. Students in the control group did not differ from students in both condition groups.	
Swaim & Kelly (2008)	Students in the intervention group reported a significantly higher rate of decline in verbal victimization compared to control students. The difference was only significant among males. For physical victimization, the decline in the intervention group compared to the control group was in the expected direction but did not reach statistical significance ($p=0.069$). This near significant difference was accounted for by males.	N/A	N/A	N/A
Tanrikulu et al. (2015)	N/A	N/A	N/A	There was no significant difference in the cyberbullying scale between the pretest and posttest scores of the intervention group.
Wolfer et al. (2014)	N/A	N/A	N/A	In comparison to the total sample, cyberbullying increased in the control group, remained stable in the short-intervention group, and decreased in the long-intervention group. Post hoc comparisons indicated that the control group differed on cyberbullying compared to the long-intervention group, while both intervention groups did not differ significantly from each other.

Table 8. Summary Study Results: Results for Studies Reporting Overall Findings.[1]

Study	Bullying Victimization						Bullying Perpetration/Aggression					
	Traditional Composite[2]	Physical	Verbal	Relational	Damage to Property	Cyber	Traditional Composite	Physical	Verbal	Relational	Damage to Property	Cyber
YOUTH ONLY												
Dellasega & Adamshick (2005)[3]				ns						ns		ns
Splett et al. (2015)[4]										ns, +[5]		
CLASSROOM ONLY OR SCHOOL ONLY												
Athanasiades et al. (2015)						+						
Boulton & Flemington (1996)							ns					
Chaux et al. (2016)							+[6]					+[7]
Connolly et al. (2014)	ns											
Domino (2013)	+						+					
Espelage et al. (2013)	ns		ns[8]				ns	+	ns[9]			
Espelage et al. (2015)	ns		ns[10]				ns	ns	ns[11]			
Fekkes et al. (2016)	+, ns[12]					–, ns[13]	ns, +[14]					
Garaigordobil & Martinez-Valderrey (2015)	+					+	+					+
Richards et al. (2008)	+	ns	ns, +[15]	ns	ns							
Tanrikulu et al. (2015)												ns
Wolfer et al. (2014)												+[16]
CLASSROOM + SCHOOL												
Cross et al. (2016)						+[17]						+[18]
Gradinger et al. (2014)						+						+
Hunt (2007)	ns						+					
Nese et al. (2014)							+[19]					
Ortega-Ruiz et al. (2012)	+					+	ns					+
Salmivalli (2001)	+, ns[20]						ns[21]					
Swaim & Kelly (2008)		ns	+									
YOUTH + CLASSROOM OR YOUTH + SCHOOL												
Cowie & Olafsson (2000)[22]	ns[23]						ns, –[24]					
Menesini et al. (2003)	ns						+					
YOUTH + CLASSROOM + SCHOOL												
Allen (2010)	ns						+					
Bauer et al. (2007)		ns		ns								
Houlston & Smith (2009)[25]	ns						ns					
Karna et al. (2012)	ns, +[26]						ns[27]					
Menesini et al. (2012)[28]	ns, +					ns, +	ns, +					+[29], ns
Palladino et al. (2012)	+					+	+					ns
Palladino et al. (2016)[30]	+					+	+					+
Peterson & Rigby (1999)	ns											
Stevens et al. (2000)	ns						ns					

[1] Studies that did not report on findings for the overall sample were excluded. These studies include: Baldry & Farrington (2004), Bowllan (2011), Del Rey et al. (2016), Nixon & Werner (2010), Perkins et al. (2011), and Schroeder et al. (2012). Studies conducted in the United States are highlighted in yellow. With regards to the symbols, "+" refers to a statistically significant favorable outcome on a p=0.05 level; "–"refers to a statistically significant unfavorable outcome on a p=0.05 level; "ns" refers to a non-significant outcome; and cells with a gray shade indicate that the outcome was not measured or reported.
[2] Traditional composite refers to a single measure of traditional bullying or any combination of physical, verbal, and relational bullying and damage to property.
[3] Study sample only included girls.
[4] Study sample only included relationally aggressive girls.
[5] School counselor report showed a favorable intervention effect; however, both student self-report and teacher report showed no significant changes. The averaged teacher and school counselor report showed a favorable intervention effect.
[6] A significant decrease was found for students in the long intervention group. Students in the control group and in the short intervention group did not significantly change in this behavior after the implementation of the intervention.
[7] Students in the control group increased significantly in this behavior, while students in the long intervention group showed a significant decrease. Students in the short intervention group did not show a significant change.
[8] Verbal bullying was measured/ operationalized by homophobic name-calling victimization.
[9] Verbal bullying was measured/ operationalized by homophobic name-calling perpetration.
[10] Verbal bullying was measured/ operationalized by homophobic name-calling victimization.
[11] Verbal bullying was measured/ operationalized by homophobic name-calling perpetration.
[12] Intervention effects were favorable at the end of the first year, but the effect was not significant at the end of the second year.
[13] Intervention effects were unfavorable at the end of the first year, but the effect was not significant at the end of the second year.
[14] Intervention did not show significant effects at the end of the first year, but had favorable effects at the end of the second year.
[15] No difference was found for 'I've been called names about my ethnicity or color'; a significant decrease was found for 'I've been called other names.'
[16] In comparison to the total sample, cyberbullying increased in the control group, remained stable in the short-intervention group, and decreased in the long-intervention group. Post hoc comparisons indicated that the control group differed on cyberbullying compared to the long-intervention group, while both intervention groups did not differ significantly from each other.
[17] The intervention was associated with a steeper decline in the log odds of cybervictimization between pretest and the first posttest. Trends in the log odds between the first posttest and the second posttest were similar.
[18] The intervention was associated with a steeper decline in the log odds of cyberaggression between pretest and the first posttest. Trends in the log odds between the first posttest and the second posttest were similar.
[19] Incidents of physical and verbal aggression were measured (but the two types were not separated). Study results reported large reductions in aggression; however, statistical significance was not reported.
[20] There was a large decline in self-reported victimization after the intervention; however, statistical significance was not reported. No significant change was found for peer-reported victimization (statistical significance was not reported for one of the measures).
[21] 'Bullying observed by students' was categorized as bullying perpetration (study reported on victimization separately). Types of bullying included physical, verbal, and indirect, but the effects for each type were not clearly reported. Hence, the composite category was selected.
[22] Study setting was at an all-boys school, so sample only included boys.
[23] No significant changes were found in the incidence of bullying victimization (been bullied 'sometimes' or more this term; been bullied 'once' or more in the last 5 days) over the period when the intervention was in place. No significant change was found in the students' average estimate of the number of victims (including self) in their own class.
[24] Comparing post-intervention to pre-intervention, no significant change was found for "bullied others 'sometimes' or more this term," but there was a significant increase in "bullied others 'once' or more in the last 5 days." No significant change was found in the students' average estimate of the number of victims (including self) in their own class.
[25] Study setting was at an all-girls school, so sample only included girls.
[26] The intervention showed no significant effects for self-reported victimization, but favorable results for peer-reported victimization.
[27] The intervention effect was not significant for both self-reported and peer-reported victimization.
[28] Study included two trials of different versions of the same intervention program. Results for both trials of the first and second version were indicated in the table.
[29] Cyberbullying decreased significantly for the peer educator group only (not the awareness group or the control group).
[30] Study included two trials of the same intervention program carried out in successive school years. Results for both trials were equivalent for all types of bullying measured.

Table 9. Summary Study Results: Results for Studies Reporting Any Favorable Findings for One or More Subgroup(s).[1]

Study	Bullying Victimization						Bullying Perpetration/ Aggression					
	Traditional Composite[2]	Physical	Verbal	Relational	Damage to Property	Cyber	Traditional Composite	Physical	Verbal	Relational	Damage to Property	Cyber
CLASSROOM ONLY OR SCHOOL ONLY												
Baldry & Farrington (2004)	Older students[3]		Older students[4]	Younger students[5]	Older students			Older students				
Chaux et al. (2016)	Traditional victims						Cyber- and traditional bullies					
Domino (2013)	Males; females						Males; females					
Espelage et al. (2015)			Illinois schools[6]									
Fekkes et al. (2016)							Lower educational level students					
Perkins et al. (2011)	Three schools (out of five)						Three schools (out of five)					
CLASSROOM + SCHOOL												
Del Rey et al. (2016)	Cyber-victims; male cyberbully/ victims					Cyber-victims; male cyberbully/ victims						Male cyber-aggressors; cyberbully/ victims
Gradinger et al. (2014)						Females						Males; females
Hunt (2007)							Males					
Nixon & Werner (2010)		High-victimized students		High-victimized students						High-victimized students		
Ortega-Ruiz et al. (2012)	Males; females						Males					
Salmivalli (2001)	7th grade girls[7]; 7th grade boys[8]						Girls who were victims before the intervention					
Swaim & Kelly (2008)			Males									
YOUTH + CLASSROOM + SCHOOL												
Allen (2010)							Males; females; Grades 9-12					
Bauer et al. (2007)		White students		White students								
Bowllan (2011)	7th grade females		8th grade females	7th grade females								
Houlston & Smith (2009)[9]												
Karna et al.	Younger						Males[11]					

Study	Bullying Victimization						Bullying Perpetration/ Aggression					
	Traditional Composite[2]	Physical	Verbal	Relational	Damage to Property	Cyber	Traditional Composite	Physical	Verbal	Relational	Damage to Property	Cyber
(2012)	students[10]											
Menesini et al. (2012)	Peer educators; other students in intervention classes[12]					Peer educators; other students in intervention classes[12]	Peer educators; other students in intervention classes[12]					Male peer educators[13]
Palladino et al. (2012)	Peer educators; other students in intervention classes					Peer educators; other students in intervention classes	Peer educators; other students in intervention classes					
Palladino et al. (2016)[14]							Males; females[15]					
Peterson & Rigby (1999)	Grade 7											
Schroeder et al. (2012)	HALT! Cohort 1 high school students; PA Cares high school students						HALT! Cohort 1 and Cohort 2 high school students; HALT! Cohort 2 middle school students; PA Cares high school and middle school students					

[1] Studies that did not report on subgroups findings were excluded. These studies included: Athanasiades et al. (2015), Boulton & Flemington (1996), Connolly et al. (2014), Cowie & Olafsson (2000), Dellasega & Adamshick (2005), Espelage et al. (2013), Garaigordobil & Martinez-Valderrey (2015), Menesini et al. (2003), Nese et al. (2014), Richards et al. (2008), Splett et al. (2015), Stevens et al. (2000), Tanrikulu et al. (2015), and Wolfer et al. (2014). Due to these exclusions, only three of the five groups of studies were reported ("Youth Only" and "Youth + Classroom or Youth + School" groups were excluded and therefore, not shown). Cells that are left blank without a gray shade refers to subgroups findings that were non-significant or unfavorable. Studies conducted in the United States are highlighted in yellow.

[2] Traditional composite refers to a single measure of traditional bullying or any combination of physical, verbal, and relational bullying and damage to property.

[3] A significant decrease was found for the single item question about victimization as well as the composite measure of total victimization.

[4] A significant decrease was found for the item 'I was called nasty names.'

[5] A significant decrease was found for the item 'No one would stay with me at recess time.'

[6] Verbal bullying victimization was measured/ operationalized by homophobic name-calling victimization.

[7] Seventh grade girls showed a decline in self-reported bullying victimization, but statistical significance was not reported. In terms of peer-reported bullying victimization measured by the average number of students the classmates reported as being bullied by others, there was a significant decline among 7th grade girls.

[8] Seventh grade boys showed a decline in self-reported bullying victimization, but statistical significance was not reported.

[9] Study setting was at an all-girls school, so sample only included girls.

[10] The intervention reduced peer-reported victimization for younger students.

[11] Peer-reported bullying was found to be reduced for boys.

[12] Results from Study 2

[13] Results from Study 1

[14] Study included two trials of the same intervention program carried out in successive school years. Results for both trials were equivalent for all types of bullying measured.

[15] Results from Trial 2

REFERENCES

1. National performance measure distribution. U.S. Department of Health and Human Services website. https://mchb.tvisdata.hrsa.gov/PrioritiesAndMeasures/NPMDistribution. Accessed August 8, 2016.

2. Kogan MD, Dykton C, Hirai AH, et al. A new performance measurement system for maternal and child health in the United States. *Matern Child Health J*. 2015;19(5):945-957.

3. Lu MC, Lauver CB, Dykton C, et al. Transformation of the Title V Maternal and Child Health Services Block Grant. *Matern Child Health J*. 2015;19(5):927-931.

4. Kann L. Youth Risk Behavior Surveillance—United States, 2015. *MMWR Surveill Summ*. 2016;65.

5. Lessne D, Cidade M. Student reports of bullying and cyber-bullying: Results from the 2013 School Crime Supplement to the National Crime Victimization Survey. Web tables. NCES 2015-056. 2015.

6. National Survey of Children's Health. NSCH 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. www.childhealthdata.org. Accessed August 16, 2016.

7. Gladden RM, Vivolo-Kantor AM, Hamburger ME, Lumpkin CD. Bullying surveillance among youths: Uniform definitions for public health and recommended data elements, version 1.0. Atlanta, GA; National Center for Injury Prevention and Control, Centers for Disease Control and Prevention and U.S. Department of Education; 2014.

8. Chisholm JF. Review of the status of cyberbullying and cyberbullying prevention. *Journal of Information Systems Education*. 2014;25(1):77-87.

9. Klomek AB, Sourander A, Gould M. The association of suicide and bullying in childhood to young adulthood: A review of cross-sectional and longitudinal research findings. *Can J Psychiatry*. 2010;55(5):282.

10. Dobry Y, Braquehais MD, Sher L. Bullying, psychiatric pathology and suicidal behavior. *Int J Adolesc Med Health*. 2013;25(3):295-299.

11. Kumpulainen K. Psychiatric conditions associated with bullying. *Int J Adolesc Med Health*. 2008;20(2):121-132.

12. Kim YS, Leventhal B. Bullying and suicide. A review. *Int J Adolesc Med Health*. 2008;20(2):133-154.

13. Kaltiala-Heino R, Fröjd S. Correlation between bullying and clinical depression in adolescent patients. *Adolesc Health Med Ther*. 2011;2:37-44.

14. van Geel M, Goemans A, Vedder PH. The relation between peer victimization and sleeping problems: A meta-analysis. *Sleep Med Rev*. 2016;27:89-95.

15. Gini G, Pozzoli T. Bullied children and psychosomatic problems: A meta-analysis. *Pediatrics*. 2013;132(4):720-729.

16. Glew GM, Fan M, Katon W, Rivara FP, Kernic MA. Bullying, psychosocial adjustment, and academic performance in elementary school. *Arch Pediatr Adolesc Med*. 2005;159(11):1026-

1031.

17. Holt MK, Finkelhor D, Kantor GK. Multiple victimization experiences of urban elementary school students: Associations with psychosocial functioning and academic performance. *Child Abuse Negl*. 2007;31(5):503-515.

18. Juvonen J, Wang Y, Espinoza G. Bullying experiences and compromised academic performance across middle school grades. *J Early Adolesc*. 2011;31(1):152-173.

19. Espelage DL, Hong JS, Rao MA, Low S. Associations between peer victimization and academic performance. *Theory Pract.* 2013;52(4):233-240.

20. Wolke D, Lereya ST. Long-term effects of bullying. *Arch Dis Child*. 2015;100(9):879-885.

21. Ttofi MM, Farrington DP, Lösel F, et al. Do the victims of school bullies tend to become depressed later in life? A systematic review and meta-analysis of longitudinal studies. *J Aggress Confl Peace Res*. 2011;3(2):63-73.

22. Klomek AB, Sourander A, Elonheimo H. Bullying by peers in childhood and effects on psychopathology, suicidality, and criminality in adulthood. *Lancet Psychiatry*. 2015;2(10):930-941.

23. Rivara F, Le Menestrel S. National Academies of Sciences, Engineering, and Medicine. 2016. Preventing Bullying Through Science, Policy, and Practice. Washington, DC: The National Academies Press.

24. Farrington DP, Ttofi MM. School-based programs to reduce bullying and victimization.

Campbell Systematic Reviews. 2009:6. doi: 10.4073/csr.2009.6.

25. Evans CB, Fraser MW, Cotter KL. The effectiveness of school-based bullying prevention programs: A systematic review. *Aggress Violent Behav*. 2014;19(5):532-544.

26. Hahn R, Fuqua-Whitley D, Wethington H, et al. Effectiveness of universal school-based programs to prevent violent and aggressive behavior: A systematic review. *Am J Prev Med*. 2007;33(2):S114-S129.

27. Ttofi MM, Farrington DP. Effectiveness of school-based programs to reduce bullying: A systematic and meta-analytic review. *J Exp Criminol*. 2011;7(1):27-56.

28. Vreeman RC, Carroll AE. A systematic review of school-based interventions to prevent bullying. *Arch Pediatr Adolesc Med*. 2007;161(1):78-88.

29. Ttofi MM, Farrington DP. Bullying prevention programs: The importance of peer intervention, disciplinary methods and age variations. *J of Exp Criminol*. 2012;8(4):443-462.

30. Stevens V, De Bourdeaudhuij I, Van Oost P. Bullying in flemish schools: An evaluation of anti-bullying intervention in primary and secondary schools. *Br J Educ Psychol*. 2000;70:195-210.

31. Baldry AC, Farrington DP. Evaluation of an intervention program for the reduction of bullying and victimization in schools. *Aggress Behav*. 2004;30(1):1-15.

32. Mytton J, DiGuiseppi C, Gough D, Taylor R, Logan S. School-based secondary prevention programmes for preventing violence. *Cochrane Database Syst Rev*. 2006;3(2).

33. Stopbullying.gov. U.S Department of Health and Human Resources website. http://www.stopbullying.gov/. Accessed August 12, 2016.

34. The Robert Wood Johnson *What Works for Health* Project. County Health Rankings website. http://www.countyhealthrankings.org/roadmaps/what-works-for-health. Accessed August 17, 2016.

35. Athanasiades C, Kamariotis H, Psalti A, Baldry AC, Sorrentino A. Internet use and cyberbullying among adolescent students in greece: The 'tabby' project. *Hellenic Journal of Psychology*. 2015;12(1):14-39.

36. Splett JD, Maras MA, Brooks CM. GIRLSS: A randomized, pilot study of a multisystemic, school-based intervention to reduce relational aggression. *J Child Fam Stud*. 2015;24(8):2250-2261.

37. Tanrıkulu T, Kınay H, Arıcak OT. Sensibility development program against cyberbullying. *New Media Soc*. 2015;17(5):708-719.

38. Boulton MJ, Flemington I. The effects of a short video intervention on secondary school pupils' involvement in definitions of and attitudes towards bullying. *Sch Psychol Int*. 1996;17(4):331-345.

39. Chaux E, Velásquez AM, Schultze-Krumbholz A, Scheithauer H. Effects of the cyberbullying prevention program media heroes (medienhelden) on traditional bullying. *Aggress Behav*. 2016;42(2):157-165.

40. Connolly J, Josephson W, Schnoll J, et al. Evaluation of a youth-led program for preventing bullying, sexual harassment, and dating aggression in middle schools. *J Early Adolesc*. 2014:0272431614535090.

41. Cross D, Shaw T, Hadwen K, et al. Longitudinal impact of the cyber friendly schools program on adolescents' cyberbullying behavior. *Aggress Behav*. 2016;42(2):166-180.

42. Espelage DL, Low S, Polanin JR, Brown EC. The impact of a middle school program to reduce aggression, victimization, and sexual violence. *J Adolesc Health*. 2013;53(2):180-186.

43. Espelage DL, Low S, Polanin JR, Brown EC. Clinical trial of second step© middle-school program: Impact on aggression & victimization. *J Appl Dev Psychol*. 2015;37:52-63.

44. Fekkes M, van de Sande M, Gravesteijn J, et al. Effects of the dutch skills for life program on the health behavior, bullying, and suicidal ideation of secondary school students. *Health Educ*. 2016;116(1):2-15.

45. Garaigordobil M, Martínez-Valderrey V. Effects of cyberprogram 2.0 on" face-to-face" bullying, cyberbullying, and empathy. *Psicothema*. 2015;27(1):45-51.

46. Gradinger P, Yanagida T, Strohmeier D, Spiel C. Prevention of cyberbullying and cyber victimization: Evaluation of the ViSC social competence program. *J Sch Violence*. 2015;14(1):87-110.

47. Hunt C. The effect of an education program on attitudes and beliefs about bullying and bullying behaviour in junior secondary school students. *Child Adolesc Ment Health*. 2007;12(1):21-26.

48. Kärnä A, Voeten M, Little TD, Alanen E, Poskiparta E, Salmivalli C. Effectiveness of the KiVa antibullying program: Grades 1–3 and 7–9. *J Educ Psychol*. 2013;105(2):535.

49. Stevens V, Bourdeaudhuij I, Oost P. Bullying in flemish schools: An evaluation of anti-bullying intervention in primary and secondary schools. *Br J Educ Psychol*. 2000;70(2):195-210.

50. Swaim RC, Kelly K. Efficacy of a randomized trial of a community and school-based anti-violence media intervention among small-town middle school youth. *Prev Sci*. 2008;9(3):202-214.

51. Allen KP. A bullying intervention system in high school: A two-year school-wide follow-up. *Studies in Educational Evaluation*. 2010;36(3):83-92.

52. Cowie H, Olafsson R. The role of peer support in helping the victims of bullying in a school with high levels of aggression. *Sch Psychol Int*. 2000;21(1):79-95.

53. Houlston C, Smith PK. The impact of a peer counselling scheme to address bullying in an all-girl london secondary school: A short-term longitudinal study. *Br J Educ Psychol*. 2009;79(1):69-86.

54. Nixon CL, Werner NE. Reducing adolescents' involvement with relational aggression: Evaluating the effectiveness of the creating A safe school (CASS) intervention. *Psychol Sch*. 2010;47(6):606-620.

55. Perkins HW, Craig DW, Perkins JM. Using social norms to reduce bullying: A research intervention among adolescents in five middle schools. *Group Process Intergroup Relat*.

2011:1368430210398004.

56. Peterson L, Rigby K. Countering bullying at an Australian secondary school with students as helpers. *J Adolesc*. 1999;22(4):481-492.

57. Salmivalli C. Peer-led intervention campaign against school bullying: Who considered it useful, who benefited? *Educ Res*. 2001;43(3):263-278.

58. Dellasega C, Adamshick P. Evaluation of a program designed to reduce relational aggression in middle school girls. *J Sch Violence*. 2005;4(3):63-76.

59. Bauer NS, Lozano P, Rivara FP. The effectiveness of the Olweus Bullying Prevention Program in public middle schools: A controlled trial. *J Adolesc Health*. 2007;40(3):266-274.

60. Del Rey R, Casas JA, Ortega R. Impact of the ConRed program on different cyberbulling roles. *Aggress Behav*. 2016;42(2):123-135.

61. Menesini E, Codecasa E, Benelli B, Cowie H. Enhancing children's responsibility to take action against bullying: Evaluation of a befriending intervention in Italian middle schools. *Aggress Behav*. 2003;29(1):1-14.

62. Menesini E, Nocentini A, Palladino BE. Empowering students against bullying and cyberbullying: Evaluation of an Italian peer-led model. *Int J Conf Violence*. 2012;6(2):313-320.

63. Ortega-Ruiz R, Del Rey R, Casas JA. Knowing, building and living together on internet and social networks: The ConRed cyberbullying prevention program. *Int J Conf Violence*. 2012;6(2):302-312.

64. Palladino BE, Nocentini A, Menesini E. Evidence-based intervention against bullying and cyberbullying: Evaluation of the NoTrap! program in two independent trials. *Aggress Behav*. 2016;42(2):194-206.

65. Palladino BE, Nocentini A, Menesini E. Online and offline peer led models against bullying and cyberbullying. *Psicothema*. 2012;24(4):634-639.

66. Richards A, Rivers I, Akhurst J. A positive psychology approach to tackling bullying in secondary schools: A comparative evaluation. *Educational and Child Psychology*. 2008;25(2):72-81.

67. Wölfer R, Schultze-Krumbholz A, Zagorscak P, Jäkel A, Göbel K, Scheithauer H. Prevention 2.0: Targeting cyberbullying@ school. *Prev Sci*. 2014;15(6):879-887.

68. Bowllan NM. Implementation and evaluation of a comprehensive, school-wide bullying prevention program in an urban/suburban middle school. *J Sch Health*. 2011;81(4):167-173.

69. Domino M. Measuring the impact of an alternative approach to school bullying. *J Sch Health*. 2013;83(6):430-437.

70. Nese RN, Horner RH, Dickey CR, Stiller B, Tomlanovich A. Decreasing bullying behaviors in middle school: Expect respect. *Sch Psychol Q*. 2014;29(3):272.

71. Schroeder BA, Messina A, Schroeder D, et al. The implementation of a statewide bullying prevention program: Preliminary findings from the field and the importance of coalitions. *Health Promot Pract*. 2012;13(4):489-495.

72. Bradshaw CP, Waasdorp TE, Leaf PJ. Examining variation in the impact of school-wide positive behavioral interventions and supports: Findings from a randomized controlled effectiveness trial. *J Educ Psychol*. 2015;107(2):546.

73. Waasdorp TE, Bradshaw CP, Leaf PJ. The impact of schoolwide positive behavioral interventions and supports on bullying and peer rejection: A randomized controlled effectiveness trial. *Arch Pediatr Adolesc Med*. 2012;166(2):149-156.

74. Carlyle KE, Steinman KJ. Demographic differences in the prevalence, Co-occurrence, and correlates of adolescent bullying at school. *J Sch Health*. 2007;77(9):623-629.

75. Mueller AS, James W, Abrutyn S, Levin ML. Suicide ideation and bullying among US adolescents: Examining the intersections of sexual orientation, gender, and race/ethnicity. *Am J Public Health*. 2015;105(5):980-985.