

The effectiveness of school-based bullying prevention programs: A systematic review



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ABSTRACT

Bullying is a social phenomenon. About 30% of school children are involved in bullying as victims, bullies, or bully/victims. The victims of bullying suffer multiple negative consequences, including poor social and academic adjustment, depression, and anxiety. This paper extends Farrington and Ttofi's (2009) meta-analysis of controlled trials of 44 bullying interventions, which suggests that bullying programs are effective in decreasing bullying and victimization. We review controlled trials of bullying interventions published from June, 2009 through April, 2013, focusing on substantive results across 32 studies that examined 24 bullying interventions. Of the 32 articles, 17 assess both bullying and victimization, 10 assess victimization only, and 5 assess bullying only. Of the 22 studies examining bullying perpetration, 11 (50%) observed significant effects; of the 27 studies examining bullying victimization, 18 (67%) reported significant effects. Although the overall findings are mixed, the data suggest that interventions implemented outside of the United States with homogeneous samples are more successful than programs implemented in the United States, where samples tend to be more heterogeneous. Few studies have measured bullying with sufficient precision to have construct validity. Finding strong measures to assess the complex construct of bullying remains a major challenge for the field.

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1. Introduction

School bullying is a serious social problem. Bullying includes both direct aggressive behavior (e.g., physical intimidation, verbal threats) and indirect aggressive behavior (e.g., exclusion, rejection). Typically,

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bullying has four related forms or dimensions: physical (i.e., physical force such as hitting or kicking), verbal (i.e., oral or written communication such as teasing or name calling), relational (i.e., direct or indirect actions intended to harm the victims' reputation and relationships such as rumor spreading or physically or electronically posting embarrassing images of the victim), and damage to property (i.e., stealing or damaging the possessions or property of victims; Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014). In addition, bullying has three defining features: intent to harm (i.e., the bully intends to harm the victim), imbalance of power (i.e., the bully is physically stronger and/or has more social power than the victim), and repetition (i.e., the bullying is focused on particular children and occurs repeatedly; Olweus, 1993).

As a social dynamic, bullying involves a large proportion of elementary, middle, and high school students. Given the lack of national studies, the prevalence of bullying among elementary school-aged children must be estimated from local and state survey studies. For example, in a sample of 3530 students in Grades 3 thru 5 enrolled in an urban school district on the West Coast of the United States, 22% of students reported involvement in bullying as a bully, a victim, or a bully/victim (Glew, Fan, Katon, Rivara, & Kernic, 2005). The majority of national studies of bullying have used samples from middle and high schools. A national survey of 15,686 students in Grades 6 thru 10 reported 30% of students appeared to be involved in bullying as a bully, victim, or bully/victim in the current semester (Nansel et al., 2001). A more recent national survey, the School Crime Supplement to the National Crime Victimization Survey, examined 4326 adolescents and found 28% reported bullying victimization (National Center for Educational Statistics, 2011). In addition, the national Health Behavior in School Aged Children survey of 7182 students in Grades 6 thru 10 reported that the most prevalent form of bullying was verbal bullying (e.g., teasing, name calling) with 54% of students reporting involvement in the past 2 months. Other prevalent forms of bullying included relational bullying (i.e., exclusion; 51%), physical bullying (21%), and victimization using electronic media or cyber bullying (14%; Wang, Iannotti, & Nansel, 2009).

Bullying is a peer-group process and children can be actively involved as bullies, victims, or bully/victims. Moreover, children can be passively involved as bystanders, offering varying degrees of support to bullies or victims (Salmivalli, 2010). Research has suggested that a child's active participation in bullying has negative developmental consequences (Gladstone, Parker, & Malhi, 2006; Ttofi, Farrington, & Losel, 2012; Ttofi, Farrington, Losel, & Loeber, 2011a). As discussed later, these negative sequelae include depression, anxiety, relationship difficulties, and criminal behavior. As these negative outcomes have become more widely recognized among policy makers, educators, and scholars, a variety of school-based bullying intervention programs have been developed.

Farrington and Ttofi (2009) conducted a systematic review of 44 bullying interventions tested in controlled trials. The results of their meta-analysis showed that, on average and when compared with routine school services, these programs decreased bullying between 20% and 23% and reduced victimization between 17% and 20%. For example, in a cluster randomized trial of elementary students in Grades 3 thru 5 ($N = 1345$), Fonagy et al. (2009) estimated the program effect of the Creating a Peaceful School Learning Environment (CAPSLE) intervention on bullying and victimization. Using a cluster sample of nine elementary schools, Fonagy and colleagues randomly assigned the schools to participate in one of two treatment conditions (i.e., CAPSLE or psychiatric consultation, in which psychiatrists provided individual consultation to children with problematic behaviors), or the treatment-as-usual control condition. The study results showed that after 2 years of program implementation, the CAPSLE program reduced bullying victimization. A comparison of victimization reports showed that 19% of students in the CAPSLE program reported victimization compared with 25% of children who received psychiatric consultation and 26% of children in the control condition.

From their review, Farrington and Ttofi (2009) distilled elements of effective anti-bullying programs such as: presence of parent and teacher training, use of classroom disciplinary methods (i.e., strict rules for handling bullying), implementation of a whole-school anti-bullying policy, and the use of instructional videos. These elements were positively correlated with a reduction in bullying and victimization. In addition, Farrington and Ttofi found that program duration and intensity were related to decreased bullying and victimization, and interventions inspired by the work of Dan Olweus appeared to be more successful.

Characteristics of studies were also related to bullying outcomes. Farrington and Ttofi (2009) found that studies using more rigorous designs produced lower effect estimates. Expressed as an odds ratio (OR), the average effect size for bullying was 1.10 for randomized experiments, 1.60 for before–after experimental control, 1.20 for other experimental-control, and 1.51 for age-cohort designs. Across designs, the mean OR was 1.36 (Farrington & Ttofi, 2009). On average, intervention groups had bullying rates 1.36 times lower than control groups. Programs focused on older children (i.e., 11 years or older) had larger effect sizes. In fact, when age was divided into four categories (i.e., 6–9 years, 10 years, 11–12 years, and 13–14 years) the weighted mean OR steadily increased for both bullying and victimization. In addition Farrington and Ttofi observed that programs implemented in Europe were more successful than programs implemented in the United States.

1.1. Developmental sequelae of victims, bullies, and bully/victims

Compared with youth who reported no involvement in bullying, those youth who reported involvement as bullies, victims, or bully/victims reported poorer psychosocial adjustment (Aluede, Adeleke, Omoike, & Afen-Akpaide, 2008; Gini, 2008; Kaltiala-Heino, Rimpela, Marttunen, Rimplea, & Rantanen, 1999; Nansel et al., 2001). Although bullies, victims, and bully/victims share some risk-related characteristics, outcomes vary. For example, in elementary school, victims and bully/victims have been shown to have more serious adjustment problems than bullies. In a sample of 565 students in Grades 3 thru 5, teacher reports and child self-reports indicated that as compared with noninvolved children, both victims and bully/victims experienced higher levels of psychosomatic symptoms (e.g., feeling tired, dizzy, tense) whereas only victims experienced greater psychosocial difficulties (e.g., conduct problems, hyperactivity, problems with peers). Bullies were similar to noninvolved youth, but bullies reported higher levels of sleeping problems, feeling tense, and hyperactivity (Gini, 2008).

Consistent with these findings, a study with a sample of Grade 6 students found that victims of bullying reported the highest levels of depression, social anxiety, and loneliness as compared with bullies, bully/victims, and noninvolved youth (Juvonen, Graham, & Schuster, 2003). This pattern of negative outcomes appears to persist into high school, as evidenced by a study with a sample of older youth (i.e., mean age 15 years) in which youth who were consistently victims and bully/victims, reported higher levels of depression, anxiety, and withdrawal as compared to bullies and noninvolved youth. In contrast, a different study with bullies reported the perpetrators experienced more externalizing problems (e.g., aggression) than their victims or bully/victims (Menesini, Modena, & Tani, 2009). The data tend to support a description of victims as lonely, anxious, and insecure (Olweus, 1993) and suggest that victimization is associated with deficits in social competence, feelings of powerlessness, rejection by peers (Kvarme, Helseth, Saeteren, & Natvig, 2010; Nation, Vieno, Perkins, & Santinello, 2008) and decreased academic achievement (Glew et al., 2005).

In contrast to victims, bullies tend to be more aggressive (Olweus, 1993). For example, in a study with a sample of 23,345 students in elementary, middle, and high school comparing bullies and noninvolved youth, O'Brennan, Bradshaw, and Sawyer (2009) found that bullies were more likely to endorse reacting to provocation with aggression.

Bullies often have a low level of school commitment and are at increased risk of dropping out and using substances (Vanderbilt & Augustyn, 2010). Moreover, bullies tend to display higher levels of hyperactivity than either victims or bully/victims (Gini, 2008).

Both internalizing disorders and suicidal ideation have been reported among bullies as well as their victims. In a sample of 16,410 Finnish adolescents ages 14 to 16 years, depression and suicidal ideation were observed more frequently among bully/victims, followed by victims, and then bullies relative to adolescents with no bullying involvement (Kaltiala-Heino et al., 1999). Controlling for age, gender, and depression to assess risk for suicidal cognition, Kaltiala-Heino et al. created a statistical model, in which bullies were found to have the highest risk of suicidal ideation, followed by bully/victims, and then victims. These Northern European data suggest that bullies may be at higher risk for suicide than previously thought (Kaltiala-Heino et al., 1999).

1.2. Long-term effects of bullying involvement

The effects of bullying involvement appear to persist into young adulthood (Ttofi et al., 2012). Indeed, those who were bullies or who were the victims of bullies during childhood or adolescence face increased risk as adults for health problems and poor social and emotional adjustment (Vanderbilt & Augustyn, 2010). Although the threshold level of exposure is not clear, studies suggest that victimization is associated with both internalizing and externalizing problems. For example, a meta-analysis of 29 studies found that childhood bullying victimization led to increased rates of depression that persisted up to 36 years post-victimization, with an average duration of 6.9 years post-victimization (Ttofi et al., 2011a). In addition, as adults, the victims of childhood bullying were at increased risk for experiencing internalizing disorders such as anxiety (Gladstone et al., 2006). A meta-analysis of 51 reports of 28 longitudinal studies found that childhood victimization was associated with the continued presence of aggressive (e.g., fighting) and violent (e.g., assault, robbery, rape, carrying or shooting a firearm) behaviors with an average of 6 years after victimization (Ttofi et al., 2012).

A recent meta-analysis of 28 studies comparing nonbullies and bullies found that bullies displayed increased levels of criminal offending up to 11 years post-bullying perpetration (Ttofi, Farrington, Losel, & Loeber, 2011b). One study included in this meta-analysis used a sample of 957 youth from the Healthy Children Project, which recruited participants from 10 suburban public elementary schools in the U.S. Pacific Northwest region (Kim, Catalano, Haggerty, & Abbott, 2011). The researchers found that bullying in Grade 5 predicted increased rates of problem behaviors at age 21 years, including violence (e.g., started a fight, hit someone to seriously harm them, carried a hand gun), heavy drinking (e.g., consuming more than 4 [females] or 5 [males] drinks in a row), and marijuana use. Moreover, the study found moderate correlations between bullying in Grade 5 and young adults' (i.e., 21 years) problematic behaviors such as impulsivity ($r = .27$), poor family management ($r = .39$), and antisocial peer association ($r = .41$; Kim et al., 2011). In summary, the data suggest that victimization and bullying are related to ongoing difficulties with social, psychological, and academic adjustment. Early reports suggested that bully prevention programs might be effective in reducing bullying. Because bullying appears to be part of a cascade of risks related to negative developmental sequelae, the effectiveness of bullying prevention programs can be important in promoting positive youth and life course outcomes.

1.3. Current study

Since the publication of Farrington and Ttofi's (2009) meta-analysis, additional bullying prevention programs have been evaluated. The aim of the current study was to extend the work of Farrington and Ttofi by assessing controlled trials of bullying interventions published from June, 2009 through April, 2013.

2. Method

2.1. Search strategy

Our review followed AMSTAR (A Measurement Tool to Assess Systematic Reviews) guidelines for conducting systematic reviews (e.g., an established research question, a documented list of inclusion criteria, a comprehensive literature search; Shea et al., 2007). We identified potential articles, book chapters, and dissertations for review by searching 12 databases: Campbell Collaboration, Cochran Library, Dissertation Abstracts, ERIC, Google Scholar, Index to Thesis Database, PsycInfo, PubMed, Social Sciences Citation Index, Social Services Abstracts, Sociological Abstracts, and Social Work Abstracts. The same keywords were used for each database and were identical to the keywords used by Farrington and Ttofi (2009), with the exception of our addition of the search term "lower OR elementary OR middle." We restricted our search to elementary and middle schools because those schools serve children in the developmental period when bullying peaks. Our searches included the following keywords:

bully OR bullies OR anti-bullying OR bully-victims OR bullying

AND: school

AND: lower OR elementary OR middle

AND: intervention OR program OR outcome OR evaluation OR effect OR prevention OR tackling OR anti-bullying.

We limited the publication dates to studies published between 2009 and 2013. When possible to specify a month, dates were limited to June, 2009 through April, 2013. In addition, we contacted 15 experts in the field of bullying intervention research to obtain gray literature. Before beginning the review process, this systematic review was registered with and accepted by PROSPERO, an international register of systematic reviews in health and social care. In addition, our research team consulted with a research librarian to ensure that our search terms were entered correctly into each database and to confirm the viability of the search strategy.

2.2. Search steps

In September, 2012, the primary reviewer used the above search terms and searched eight databases (i.e., Campbell Collaboration, Cochran Library, ERIC, PsycInfo, PubMed, Social Sciences Citation Index, Social Services Abstracts, and Social Work Abstracts). In May, 2013, the research team expanded the review through April, 2013 and added four additional databases (i.e., Dissertation Abstracts, Google Scholar, Index to Thesis Database, Sociological Abstracts). A secondary reviewer joined the research team. The primary reviewer performed a second search of the original eight databases plus the four new databases, and the secondary reviewer searched all 12 databases. After conducting their independent searches, the reviewers ensured that they had obtained the same number of results from each database. In addition, the primary reviewer compared search results from the May, 2013 search to the results from the September, 2012 search to ensure all articles found in the 2012 search were captured in the 2013 search.

The two reviewers independently and systematically searched the results of each database for relevant articles, book chapters, and dissertations. Both reviewers read the titles of every result in each database and consulted the abstract in the event that the title did not yield sufficient information. If the abstract did not indicate whether the study should be included, the reviewers consulted the full-text of the article, book chapter, or dissertation. The two reviewers then compared the source documents found in each database. Five discrepancies were discussed with a third reviewer until a consensus was reached. See Fig. 1 for a flow chart of this search process.

The primary reviewer read all source documents found in the 2012 search and created a table showing the methodology, sampling, sample,

measures, and results used in each study. The secondary reviewer cross checked this table for accuracy by randomly selecting a study and ensuring that the primary reviewer entered the correct information. The primary and secondary reviewers divided up the new articles, book chapters, and dissertations that were found in the 2013 search, read them, put them into the table and crosschecked each other's work. This working table is available at: <http://ssw.unc.edu/about/faculty/fraser>.

In addition to gray literature obtained by contacting 15 bullying intervention experts, we obtained gray literature by entering our keywords in Google Scholar and searching the first 250 results scored by relevance. Further, the research team manually searched the reference lists of articles identified from the 12 databases to identify other potential source documents that were not returned in our other search results. These searches yield 24 interventions that we included in our review. Last, we contacted the creators of each of the 24 bullying intervention included in this study to verify that the research team had correctly categorized and described the intervention. We received responses from 15 out of the 24 researchers responsible for developing the interventions included in the study (one researcher was deceased; seven did not respond).

2.3. Inclusion and exclusion criteria

The following criteria were used for inclusion or exclusion of studies in this systematic review:

1. The study was an evaluation of a program designed to reduce bullying in an elementary school or middle school setting; reducing bullying did not have to be the primary focus of the intervention, but could be one of multiple aims or a secondary aim. High school programs were excluded because children's normative beliefs about aggression become stable in elementary school and beliefs about aggression are correlated with observed aggressive behavior (Huesmann & Guerra, 1997), such as bullying. In addition, reported rates of bullying are highest among Grade 6 students (Robers, Zhang, & Truman, 2012). Therefore, we focused on vulnerable age groups in which intervention programs might disrupt risk cascades.
2. Bullying perpetration and/or victimization were required to be measured using self-report questionnaires, peer ratings, teacher ratings,

or observational methods. Studies that did not include a measure of bullying were excluded.

3. Programs designed to decrease aggression or increase social-emotional skills that were also implemented to decrease bullying and used a bullying measure to gauge program effectiveness were included.
4. The study was published from June, 2009 through April, 2013. Dissertations written before June, 2009 but not published on ProQuest until after June, 2009 were included.
5. At a minimum, the study used a control and intervention group design.
6. Program effectiveness was measured by comparing students who received the intervention (i.e., treatment or intervention group) with students who did not receive the intervention (i.e., control group).
7. Only studies published in English were included.
8. An intervention was specified and treatment integrity was reported. That is, the treatment was defined and delivered according to established criteria. For example, a study examining the effect of an anti-bullying policy was excluded because no intervention was specified and outcomes could not be associated with an identifiable change strategy (Greytak, Kosciw, & Boesen, 2013).

3. Results

Displayed in Table 1, the search protocol yielded 32 articles that evaluated 24 distinct bullying interventions. Each article described a controlled trial of a bullying prevention program and measured (a) perpetration and victimization (17 studies), (b) victimization only (10 studies), or perpetration only (five studies). Results are discussed in terms of changes in victimization or perpetration. Thus, 27 studies measured victimization (17 examined both perpetration and victimization, 10 examined victimization only) and 22 measured perpetration (17 studies examined both perpetration and victimization, five examined perpetration only).

All articles reviewed interventions administered in middle schools (eight articles), elementary schools (17 articles), or both school settings (seven articles). Efforts to prevent bullying are global in nature. Of the 32 articles, 15 studies were conducted in the United States, seven in Finland, three in Canada, three in Australia, one in

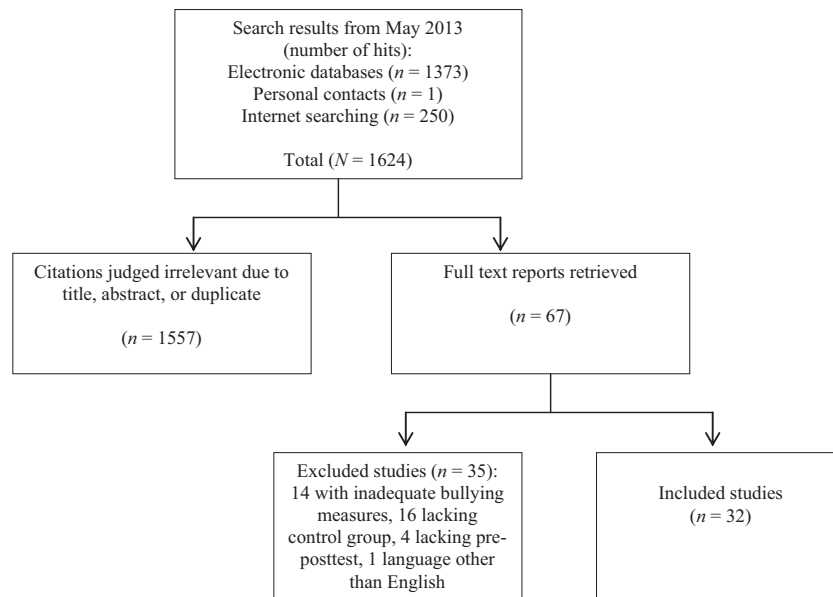


Fig. 1. Flow chart of systematic review results.

both England and Germany, one in Turkey, one in China, and one in Norway.

In addition to the measures of bullying and/or victimization (a study inclusion criterion), 23 studies measured other theoretically relevant outcomes (e.g., aggression and internalizing disorders [WITS intervention]; Hoglund, Hosan, & Leadbeater, 2012). Data were collected using a variety of reporting mechanisms: 19 studies used student self-reports only, four used student and teacher reports, two used teacher reports only, two used student and peer reports, one used student and parent reports, one used peer reports only, one used researcher observations only, one used student self-reports and observations, and one used peer, student, and teacher reports. Twelve studies used the word *bullying* in data collection, 10 provided a definition of bullying, 17 used neither word nor definition, eight provided both word and definition, four used the word bullying without a definition, two provided a definition but did not use the word bullying, and one used observational methods and did not use a survey.

Of the 32 studies, 18 used an experimental design with random assignment whereas 14 used quasi-experimental designs. The quasi-experimental designs included age-equivalent time-lagged contrast and matched-group designs. The designs of five studies included follow-up data collection after a posttest measure (e.g., 1 year, 3 months, 2 months, 1 month; Battey, 2009; Berry & Hunt, 2009; Jensen, Dieterich, Brisson, Bender, & Powell, 2010; Sahin, 2012; Sapouna et al., 2010). One study used a 2-year and 3-year follow-up (Hoglund et al., 2012), and one had 12-month and 18-month follow-ups for the intervention group only (Frey, Hirschstein, Edstrom, & Snell, 2009).

Shown in Table 2, the interventions were classified according to the typology developed by Farrington and Ttofi (2009). No clear patterns across programs were observed. Although many early programs were reportedly influenced by the work of Olweus, the lack of a pattern suggests that efforts to prevent bullying have expanded beyond the core features of Olweus' programs.

3.1. Studies measuring bullying perpetration

Program effectiveness was assessed in 22 studies by measuring changes in bullying perpetration, yielding mixed findings. Of the 22 studies, 11 trials (50%) reported significant program effects on perpetration, 10 (45%) reported no significant differences between intervention and control conditions, and one (5%) reported mixed results (i.e., both significant increases and decreases in bullying were observed when comparing intervention and control conditions). In one quasi-experimental time-lagged study with a sample of middle-school girls, the Grade 7 girls who participated in the Olweus anti-bullying program reported a 34% decrease in victimization by peer exclusion and a 31% decrease in reports of bullying as compared with girls who did not participate in the intervention (Bowllan, 2011). However, for girls in Grade 8, a comparison of those in the intervention and control groups showed an increase in victimization among those who participated in the anti-bullying program. Specifically, this study reported a 20% increase in physical bullying victimization and a 25% increase in reports of overall bullying victimization among eighth grade girls who participated in the program.

Of the 22 studies measuring bullying perpetration, six (27%) used a single-item measure to assess bullying outcomes. Of these six, three involved tests of the KiVa program. Although single items, these measures were drawn from the Olweus Bullying Questionnaire (Olweus, 1996) and included questions related to both bullying victimization and perpetration: "How often have you been bullied at school in the past couple of months? How often have you bullied others at school in the past couple of months?" The remaining 16 studies used multi-item scales to measure bullying perpetration (e.g., School Experiences Survey, Peer Relations Questionnaire). Of the six studies using a single-item scale,

four studies (67%) observed significant effects on bullying perpetration. Of the 16 using multi-item scales, seven studies (44%) observed significant effects.

3.2. Studies measuring bullying victimization

Of the 32 studies reviewed, 27 assessed bullying victimization. Eighteen of the 22 studies (67%) reported significant program effects on bullying victimization whereas eight (30%) reported no significant effects, and one (4%) reported mixed findings.

Six studies used a single item measure to assess victimization. The remaining studies used multi-item scales. Three studies used the Social Experiences Questionnaire; example items include, "Other kids hit you or pull your hair" and "Other kids tell lies about me" (Crick & Grotpeter, 1996). Three studies used a modified version of the Olweus Bullying Questionnaire; example items include, "I was hit, kicked, pushed, shoved around, or locked indoors" and "I was called mean names, was made fun of or teased in a hurtful way" (Olweus, 1996). Two studies used the School Experiences Questionnaire; example items include, "Has anyone in your class ever hit you at school" and "Has anyone in your class ever told other kids not to be your friend" (Kochenderfer-Ladd, 2004). The remaining studies used conceptually broader scales to measure bullying victimization (e.g., University of Illinois Victimization Scale; Espelage & Holt, 2001). Five (83%) of the six studies using a single-item measure observed significant effects on bullying victimization, whereas 12 (57%) of the 21 studies using multi-item scales observed significant effects.

4. Discussion

Overall, the findings from evaluations of anti-bullying programs are mixed. Of the 22 controlled trials with measures of bullying perpetration, 11 trials (50%) reported significant program effects on bullying behavior, and one reported mixed results. Of the 27 studies that assessed victimization, 18 (67%) reported significant program effects, and one reported mixed results. To be sure, the evidence is sufficiently strong to indicate that bullying interventions can be effective. At the same time, many programs appear to be ineffective.

From their review, Farrington and Ttofi (2009) distilled a number of intervention characteristics (e.g., whole school approach, parent involvement, teacher training, classroom rules against bullying) that were associated with significant reductions in bullying perpetration and/or victimization. Although we used that framework, we did not find successful interventions, relative to unsuccessful interventions, any more likely to possess the characteristics distilled by Farrington and Ttofi (see Table 2). Given the increasing concern about the developmental sequelae of bullying, we may be observing more experimentation and a blossoming of programs with a variety of creative features. Thus, earlier frameworks for classifying programs might not fully encode the variation in program design. For example, the FearNot! intervention tested an interactive video game designed to strengthen positive bystander interventions. The Lunch Buddies mentoring program, which reported a significant effect, paired bullied students with college students as a means of disrupting negative peer dynamics and providing support for victims. These creative and nontraditional bullying interventions have innovative program designs that appear to have affected bullying behaviors.

4.1. Study location and sample composition

For a variety of reasons, interventions might function differently in different regions of the world (e.g., Sundell, Ferrer-Wreder, & Fraser, 2013). Of the 18 studies that reported significant effects on bullying victimization, 13 (72%) were conducted outside of the United States (i.e., Australia, Canada, Finland, Germany, Turkey, and United Kingdom). Conversely, six (75%) of the eight studies with nonsignificant

Table 1
Intervention significance and methodology.

| Intervention | Significant change in bullying | Significant change in victimization | Program description | Random assignment | Sample/setting | Measures # of items; defines bullying/uses word bullying |
|--|--|--|--|-------------------|--|--|
| | a. Self-report b. Teacher c. Parent d. Peer e. Observation | a. Self-report b. Teacher c. Parent d. Peer e. Observation | | | | |
| Bully Prevention Challenge Course (Battey, 2009) | N/A | a. No b. N/A c. N/A d. N/A e. N/A | A challenge ropes course focused on peer support, self-esteem, and personal skills. | Yes | N = 249 (Grade 7)/U.S. | 16 items; no/no |
| Bully Proofing Your School (Toner, 2010) | a. No b. N/A c. N/A d. N/A e. N/A | a. No b. N/A c. N/A d. N/A e. N/A | Program focused on bystander involvement and school climate; includes an intervention component for bullies | No | N = 640 (Grade 6)/U.S. | 22 items; yes/yes |
| Cool Kids Program (Berry & Hunt, 2009) | N/A | a. Yes b. N/A c. Yes d. N/A e. N/A | Skills-based lessons focused on anxiety management, bullying education, and self-esteem | Yes | N = 46 (Grades 7–10)/Australia | 10 items; no/no |
| Drama Program (Joronen, Konu, Rankin, & Astedt-Kurki, 2011) | a. No b. N/A c. N/A d. N/A e. N/A | a. No b. N/A c. N/A d. N/A e. N/A | 8 drama sessions focused on empathy, social competence, student–teacher interaction and, child–parent interaction. | No | N = 134 (Grades 4–5)/Finland | 1 item; no/yes |
| Empathy Training Program (Sahin, 2012) | a. Yes b. N/A c. N/A d. N/A e. N/A | N/A | 10 sessions designed to increase student empathy by using psycho-education and small group activities. Emotion identification, emotion regulation, and empathy are discussed and taught through interactive lessons. | Yes | N = 38 (Grade 6)/Turkey | 37 items; no/no |
| FearNot! (Sapouna et al., 2010) | a. No b. N/A c. N/A d. N/A e. N/A | a. Yes b. N/A c. N/A d. N/A e. N/A | Current study used only the FearNot! video game, which exposes students to hypothetical bullying situations and teaches them how to respond to bullying situations as a victim and bystander. Students view video game characters facing bullying challenges, formulate advice for character on how to behave, and see whether their advice was effective. | No | N = 1129 (Primary School)/U.K. & Germany | 2 items; no/no |
| Friendly Schools (Cross et al., 2011) | a. No b. N/A c. N/A d. N/A e. N/A | a. Yes b. N/A c. N/A d. N/A e. N/A | 3 lessons (3 h each) implemented at the start of each of the 10-week school trimesters for 2 years. Lessons focus on building prosocial skills, peer discouragement of bullying, social support of victims, conflict resolution, and empathy. Family intervention (e.g., 16 newsletters sent to parents), staff team responsible for leading school in program delivery. | Yes | N = 1968 (Grades 4–6)/Australia | 1 item; yes/yes |
| Friendly Schools, Friendly Families (Cross et al., 2012) | a. Yes b. N/A c. N/A d. N/A e. N/A | a. Yes b. N/A c. N/A d. N/A e. N/A | Structured activities focused on individual victimization and bullying behavior, family awareness, classroom awareness, and school climate. | Yes | N = 2552 (Grades 4–6)/Australia | 1 item; no/yes |
| KiVa (Williford et al., 2012) | N/A | a. NA b. N/A c. N/A d. Yes e. N/A | 20 h of student lessons designed to enhance empathy, self-efficacy, and anti-bullying attitudes of bystanders. Modalities include discussions, group work, role playing, films, and a KiVa video game. | Yes | N = 7741 (Grades 4–6)/Finland | 3 items; yes/no |
| KiVa (Salmivalli, Karna, & Poskiparta, 2011) | N/A | a. Yes b. N/A c. N/A d. N/A e. N/A | See above | Yes | N = 5651 (Grades 4–6)/Finland | 9 items; yes/no |
| KiVa (Karna, Voeten, Little, Poskiparta, Alanen, et al., 2011) | a. Yes b. N/A c. N/A d. N/A e. N/A | a. Yes b. N/A c. N/A d. N/A e. N/A | See above | Yes | N = 8237 (Grades 4–6)/Finland | 1 item ^a ; yes/yes |
| KiVa (Karna et al., 2013) | a. Yes b. N/A c. N/A d. Yes | a. Yes b. N/A c. N/A d. Yes | See above | Yes | N = 23,430 (Grades 1–3 & 7–9)/Finland | 1 item ^a ; yes/yes |

(continued on next page)

Table 1 (continued)

| Intervention | Significant change in bullying | Significant change in victimization | Program description | Random assignment | Sample/setting | Measures # of items; defines bullying/uses word bullying |
|--|--|--|--|-------------------|---------------------------------------|--|
| | a. Self-report b. Teacher c. Parent d. Peer e. Observation | a. Self-report b. Teacher c. Parent d. Peer e. Observation | | | | |
| KiVa (Sainio et al., 2012) | e. N/A N/A | e. N/A a. Yes b. N/A c. N/A d. N/A e. N/A | See above | Yes | N = 21,778 (Grades 4–6 & 8–9)/Finland | 11 items; yes/yes |
| KiVa (Karna, Voeten, Little, Poskiparta, Kaljonen, et al., 2011) | a. Yes b. N/A c. N/A d. No e. N/A | a. Yes b. N/A c. N/A d. Yes e. N/A | See above | Yes | N = 150,000 (Grades 1–9)/Finland | 1 item ^a ; yes/yes |
| Lunch Buddies (Elledge et al., 2010) | N/A | a. No b. No c. N/A d. Yes e. N/A | Twice weekly, participating students ate lunch with an assigned college student mentor. | No | N = 36 (Grades 4–5)/U.S. | 9 items; no/no |
| Olweus Anti-Bullying Program (Bowllan, 2011) | a. Mixed ^b b. No c. N/A d. N/A e. N/A | a. Mixed ^b b. N/A c. N/A d. N/A e. N/A | Program focused on bystanders, bullies, victims, and the school climate. | No | N = 270 (Grades 7–8)/U.S. | 36 items; yes/yes |
| Ophelia Project (Wright et al., 2012) | N/A | a. N/A b. Yes c. N/A d. N/A e. N/A | 6 lessons focused on relational aggression among girls. | No | N = 18 (Grade 5)/U.S. | 12 items; no/no |
| Playworks (Bleeker et al., 2012) | a. No b. N/A c. N/A d. N/A e. N/A | a. N/A b. Yes c. N/A d. N/A e. N/A | Full-time recess coaches provide organized recess activities. Teaches conflict resolution and gives children structure during recess, when bullying commonly occurs. | Yes | N = 1982 (Grades 4–5)/U.S. | 7 items; no/no |
| Positive Action (Li et al., 2011) | a. Yes b. N/A c. N/A d. N/A e. N/A | N/A | 140 brief lessons (15 min) taught 4 days per week. Example topics include cyber bullying prevention, bullying prevention, violence prevention, and school improvement. | Yes | N = 510 (Grades 3–5)/U.S. | 12 items; no/no |
| Restorative Whole School Approach (Wong et al., 2011) | a. Yes b. N/A c. N/A d. N/A e. N/A | N/A | Focuses on establishing a peaceful school climate by using a restorative justice framework to handle all bullying incidents. Focuses on victim empowerment, bully reintegration, school safety, and involving parents. | No | N = 1480 (Grades 7 & 9)/China | 12 items; no/no |
| School Wide Positive Behavioral Interventions and Supports (Waasdorp et al., 2012) | a. N/A b. Yes c. N/A d. N/A e. N/A | N/A | Non-curricular program focused on establishing school-wide expectations for positive behavior (e.g., respect, responsibility). Teachers reinforce expectations through praise and rewards. | Yes | N = 12,344 (K-2)/U.S. | 4 items; no/no |
| Second Step (Espelage et al., 2013) | a. No b. N/A c. N/A d. N/A e. N/A | a. No b. N/A c. N/A d. N/A e. N/A | 15 interactive lessons focused on social emotional learning skills. | Yes | N = 3616 (Grade 6)/U.S. | 3 items; no/no |
| Social Norms Project (Lishak, 2011) | a. No b. N/A c. N/A d. N/A e. N/A | a. No b. N/A c. N/A d. N/A e. N/A | Targeted marketing campaign (i.e., assemblies, presentations, quizzes, contests) providing data about bullying collected in specific school. | No | N = 121 (Grades 6–8)/U.S. | 44 items; no/yes |
| Steps to Respect (Brown et al., 2011) | a. No b. Yes c. N/A d. N/A e. N/A | a. No b. N/A c. N/A d. N/A e. N/A | 11 semi-scripted, 50-minute lessons focusing on positive peer relationships; emotion management; recognizing, refusing, and reporting bullying; assertiveness; empathy; and emotion regulation. | Yes | N = 2940 (Grades 3–5)/U.S. | 13 items; no/no |
| Steps to Respect (Frey et al., 2009) | a. No b. N/A c. N/A d. N/A e. Yes a. N/A | a. No b. N/A c. N/A d. N/A e. Yes N/A | 11 semi-scripted, 50-minute lessons focusing on positive peer relationships; emotion management; recognizing, refusing, and reporting bullying; assertiveness; empathy; and emotion regulation. | Yes | N = 1126 (Grades 3–4)/U.S. | 8 items; no/no |
| | | | | No | | |

Table 1 (continued)

| Intervention | Significant change in bullying | Significant change in victimization | Program description | Random assignment | Sample/setting | Measures # of items; defines bullying/uses word bullying |
|--|--|--|--|-------------------|--------------------------------|--|
| | a. Self-report | a. Self-report | | | | |
| | b. Teacher | b. Teacher | | | | |
| | c. Parent | c. Parent | | | | |
| | d. Peer | d. Peer | | | | |
| | e. Observation | e. Observation | | | | |
| Take a Stand, Lend a Hand, Stop Bullying Now (Krueger, 2010) | b. N/A c. N/A d. N/A e. No | | 5 lessons focused on identifying and intervening in bullying situations. This study applied the program to bullying on the school bus. | | N = 110 (Grades K-5)/U.S. | Observational measure |
| Take the LEAD (Domino, 2011) | a. Yes b. N/A c. N/A d. N/A e. N/A | a. Yes b. N/A c. N/A d. N/A e. N/A | 16 sessions focused on positive youth development and social-emotional learning. Empowers students to tackle life challenges by increasing self-awareness, interpersonal communication skills, cognitive competencies, parent and peer relations, social awareness, and personal efficacy. | No | N = 232 (Grade 7)/U.S. | 6 items; no/no |
| WITS (Giesbrecht et al., 2011) | N/A | a. Yes b. N/A c. N/A d. N/A e. N/A | Children are sworn into the WITS program in the fall by a local police officer. Once per month, a story book-based lesson plan is implemented. A WITS book (the main character faces a bullying situation) is incorporated into the classroom curriculum. | No | N = 432 (Grade 1)/Canada | 5 items; no/no |
| WITS (Leadbeater & Sukhathanakul, 2011) | N/A | a. Yes b. N/A c. N/A d. N/A e. N/A | See above | No | N = 830 (Grades 1-3)/Canada | 5 items; no/no |
| WITS (Hoglund et al., 2012) | N/A | a. Yes b. N/A c. N/A d. N/A e. N/A | See above | No | N = 432 (Grade 1)/Canada | 5 items; no/no |
| Youth Matters (Jenson et al., 2010) ^c | a. No b. N/A c. N/A d. N/A e. N/A | a. No b. N/A c. N/A d. N/A e. N/A | 2-year intervention with a curriculum of 4 instructional models emphasizing skills and issues salient to bullying and victimization (e.g., asking for help, empathy, being a good friend). Each module is 10 sessions and culminates with a school wide or classroom project focusing on the negative consequences of bullying and aggression. | Yes | N = 876 (Grades 4-5)/U.S. | 6 items; no/yes |
| Zero Program Against Bullying (Roland et al., 2010) | a. No b. N/A c. N/A d. N/A e. N/A | a. No b. N/A c. N/A d. N/A e. N/A | Weekly, 15-minute classroom discussions about bullying designed to increase student empathy. Program incorporates increased adult supervision and authority (teachers wear yellow vests during break time). Established protocol for handling bullying situations. | No | N = 20,430 (Grades 2-7)/Norway | 4 items; yes/yes |

^a Multi-item measure used for data collection, but data analyzed using only one item.

^b Indicates an iatrogenic effects (i.e., victimization or perpetration increased).

^c In a previous study (Jenson & Dieterich, 2007) the rate of decline in victimization was significantly higher in intervention schools compared to control school.

findings were conducted in the United States. The only study with mixed results, including an iatrogenic finding, was conducted in the United States. A similar pattern was observed among the studies that examined bullying perpetration. Of the 11 studies reporting significant effects, six (55%) were conducted outside of the United States. Among the studies that reported nonsignificant findings, six (60%) of the 10 studies were conducted in the United States. The one study with mixed results, including an iatrogenic finding, was conducted in the United States. Consistent with previous reports (e.g., Farrington & Tofi, 2009), the majority of studies that observed significant effects on bullying behavior appear to have been conducted outside of the United States.

This pattern of findings suggests that it might be more challenging to design and deliver effective bullying prevention programs in the United States, where the samples reflect greater heterogeneity. For example, the U.S. population shows increasing disparities between high-income and low-income groups (DeNavas-Walt, Proctor, & Smith, 2012). This rising disparity is fueled, at least in part, by comparatively low U.S. governmental spending on social welfare programs (Alesina & Glaeser,

2004). Despite the fact that the United States has a high gross national product per capita, it has higher levels of poverty than nations in Northern and Western Europe (Iceland, 2006), which are the regions in which most bullying prevention studies have been conducted. Indeed, the United States has higher relative poverty than almost every European country (Iceland, 2006). These elevated rates of U.S. poverty complicate both design and implementation of bullying prevention programs. Poverty is associated with childhood behavioral problems, elevated school dropout rates, PTSD, depression, criminal behavior, and low educational attainment (Iceland, 2006; Leventhal & Brooks-Gunn, 2000; Nikulina, Widom, & Czaja, 2011). Further, income inequality is linked with bullying. A study of 66,910 eleven year old children across 37 countries found that every one standard deviation increase income inequality was associated with increased bullying by males (OR = 1.17) and females (OR = 1.24; Elgar, Criag, Boyce, Morgan, & Vella-Zarb, 2009). Schools in the United States face complex challenges and, for many, bullying prevention programs might be insufficient to address the elevated levels of family and community risks to which a large percentage of students are exposed daily.

The findings also vary by race/ethnicity. In general, significant effects were more likely to be observed in studies with racially/ethnically homogeneous samples. Of the 14 studies that reported both race/ethnicity and significant program effects on bullying victimization, 13 had samples that were at least 70% White participants and one had an all African American sample. Of the six studies that reported race/ethnicity and nonsignificant program effects on bullying victimization, five had diverse samples (i.e., less than 70% of the sample represented a single race/ethnicity) and the one reporting mixed findings also had a sample with less than 70% of participants of a single race/ethnicity. Of the six studies that reported race/ethnicity and reported significant effects on bullying perpetration, four had samples that were 70% or more of the same race/ethnicity. Last, of the seven studies that reported race/ethnicity and reported nonsignificant program effects on bullying perpetration, five had diverse samples (i.e., less than 70% of a single race/ethnicity) and the single study with iatrogenic effects also had a racially diverse sample. To summarize, the majority of studies reporting significant program effects on bullying perpetration and/or victimization had relatively homogeneous samples, whereas the majority of studies reporting nonsignificant effects on bullying perpetration and victimization had samples that were relatively more heterogeneous. Although based on a small number of studies, these findings suggest that the design and delivery of bullying prevention programs in schools with diverse student populations is more challenging than the design and delivery of prevention programs in culturally homogeneous schools.

Clearly, the development of prevention programs in culturally complex settings requires greater capacity and resources. Implementing effective bullying interventions in schools with heterogeneous populations presents unique challenges. In the United States, schools with heterogeneous populations tend to be economically disadvantaged (Saporito & Sohoni, 2007). In these settings, bullying prevention programs should probably be embedded in a broad array of prevention efforts designed to address risk factors at the individual, family, neighborhood, and school levels. To be effective in schools with heterogeneous populations, interventions need to be culturally sensitive (Botvin, Schinke, Epstein, & Diaz, 1994; Botvin, Schinke, Epstein, Diaz, & Botvin, 1995). Indeed, outside the field of bullying, prevention researchers have argued, "... a prevention approach that is targeted and culturally focused may be more effective than one developed for a general population" (Botvin et al., 1995; p. 117).

4.2. Measurement of bullying perpetration and victimization

4.2.1. One-item measures

Bullying is a complex, dynamic social behavior that involves intent to harm, repetition, and power imbalance. In addition, bullying can take a number of forms, including physical, relational, verbal, and cyber bullying. Given its multidimensionality, it is surprising that six studies included in the current review used a single item to measure bullying perpetration and/or victimization (e.g., "How often you been bullied/bullied others over the past few months?"). Notably, 4 of the 6 studies also provided a definition of bullying.

In spite of widespread agreement that bullying is an important social problem, the measurement of bullying lacks both construct and content validity in many studies. For example, researchers disagree on whether a definition of the word bullying should be provided to participants. One side has argued that youth might be reluctant to label their behaviors as bullying and providing a definition could produce reactivity with the potential to deter honest disclosure (Bosworth, Espleage, & Simon, 1999; Espleage & Holt, 2001). In contrast, other researchers have argued that a definition is needed because otherwise youth are left to subjectively interpret the concept of bullying (Solberg & Olweus, 2003). The most commonly used definition of bullying provided on surveys is from the *Olweus Bullying Questionnaire* (2009):

Here are some questions about being bullied by other students. First we explain what bullying is. We say a student is being bullied when another student, or several other students: Say mean and hurtful things, or make fun of him or her, or call him or her mean and hurtful names; completely ignore or exclude him or her from their group of friends or leave him or her out of things on purpose, hit, kick, push, shove around, or lock him or her inside a room, tell lies or spread false rumors about him or her or send mean notes and try to make other students dislike him or her, and do other hurtful things like that. When we talk about bullying, these things happen more than just once, and it is difficult for the student being bullied to defend himself or herself. We also call it bullying when a student is teased more than just once in a mean and hurtful way. We do not call it bullying when the teasing is done in a friendly and playful way. Also, it is not bullying when two students of the same strength or power argue or fight (p. 24).

This definition describes the construct of bullying, and specifies the content required for a valid measure. That is, a valid measure of bullying will assess forms of aggressive behavior that are repetitive in nature, conditioned on a power imbalance, and intended to produce harm. If researchers use one-item measures of bullying, it is vital to include a comprehensive definition so that youth do not conflate routine aggressive behavior (e.g., fighting among peers) with bullying behavior. Further, a definition should be provided because youth and researchers often define bullying differently (Boulton, Bucci, & Hawker, 1999; Guerin & Hennessy, 2002; Madsen, 1996; Monks & Smith, 2006; Smith, Cowie, Olafsson, & Liefoghe, 2002; Smith & Levan, 1995). Unlike researchers, the majority of youth might not consider repetition, power imbalance, or intent to harm as hallmarks of bullying. Use of a one-item bullying measure without a definition requires participants to respond on the basis of their subjective understandings. Yet, even the majority of multi-item bullying measures do not provide a definition of bullying. The Center for Disease Control (CDC) created a compendium of 33 "psychometrically sound" assessment tools and only five include a definition of bullying (Hamburger, Basile, & Vivolo, 2011; p. 2).

Moreover, even if a definition of bullying is provided with a one-item measure, multiple forms of bullying (i.e., physical, verbal, relational, extortion, cyber) are likely to be measured inadequately. Although Olweus's definition mentions the multiple forms of bullying, one-item measures cannot assess involvement in each form of bullying. Rather, one-item measures assess overall participation. When constructs are complex, multiple items are preferred. For example, the construct of delinquency would rarely be assessed by asking respondents, "How often have you engaged in delinquent behavior over the past few months?" Even if a definition of delinquency were provided with examples of delinquent behavior (e.g., theft, truancy, substance use), researchers would be interested in the type (e.g., property vs. person offenses) of delinquent behavior and not simply whether youth have broken the law.

This logic can be applied to bullying research. Different forms of bullying vary from physically harming victims to sending hurtful messages in social media. Without gathering specific information on each form, it is impossible to ascertain if there are specific developmental risk factors and sequelae associated with each of the various forms of bullying. It is difficult to design prevention interventions if their impact on types of bullying is not adequately measured and understood.

Truly stringent measures of bullying assess physical, verbal, relational, property damage, and cyber forms of bullying and provide a comprehensive definition that includes power imbalance, repetition, and intent to harm. However, out of the 33 bullying measures included in the CDC's compendium, Olweus's Bullying Questionnaire (Solberg & Olweus, 2003) is the only measure included that assesses all forms of bullying behavior. None of the current studies used measures assessing all five

Table 2
Bullying intervention characteristics previously associated with positive intervention results.

| Program | School wide approach | Classroom/ school rules against bullying | Parent involvement | Established protocol for handling bullying situations | Posters or other visible markers of anti-bullying campaign | Adequate implementation intensity (more than 20 h) | Curriculum materials provided | Videos or computer based activities | Peer oriented approach (e.g. bystanders intervention) | Teacher training/ manual | Improved playground supervision | School wide anti-bullying assemblies |
|--|----------------------|--|--------------------|---|--|--|-------------------------------|-------------------------------------|---|--------------------------|---------------------------------|--------------------------------------|
| Bully Busters | No | Yes | Yes | Yes | No | Yes | Yes | No | Yes | Yes | No | No |
| Bully Prevention Challenge Course Curriculum | No | No | No | No | No | Yes | No | No | No | No | No | No |
| Bully Proofing Your School | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | No | No |
| Cool Kids Program | No | No | Yes | No | No | No | No | No | No | No | No | No |
| Drama Program | No | No | Yes | No | No | No | No | No | Yes | Yes | No | No |
| Empathy Training Program | No | No | No | No | No | No | No | No | No | No | No | No |
| FearNot! | No | No | No ^a | No | No | No | Yes | Yes | Yes | No ^a | No | No |
| Friendly Schools | Yes | Yes | Yes | Yes | Yes | No | Yes | No | Yes | Yes | No ^b | Yes |
| Friendly Schools, Friendly Families | Yes | Yes | Yes | Yes | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| KiVa | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| Lunch Buddies Mentoring | No | No | No | No | No | No | No | No | No | No | No | No |
| Olweus Bullying Prevention Program | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Ophelia Project | No | No | Yes | No | No | No | No | No | No | No | No | No |
| Playworks | Yes | No | No | No | No | Yes | No | No | No | No | Yes | No |
| Positive Action | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | No | Yes |
| Restorative Whole School Approach | Yes | Yes | Yes | Yes | No | Yes | Yes | No | Yes | Yes | No | No |
| School-Wide Positive Behavioral Intervention/Support | Yes | No | No | Yes | Yes | Yes | No | No | No | Yes | No | No |
| Social Norms Project | Yes | No | No | No | Yes | Yes | No | Yes | Yes | Yes | No | Yes |
| Steps to Respect/Second Step | Yes | Yes | Yes | Yes | Yes | No | Yes | No | Yes | Yes | No | No |
| Take the LEAD | No | Yes | Yes | Yes | No | Yes | Yes | No | No | Yes | No | No |
| Take a Stand, Lend a Hand, Stop Bullying Now! | No | No | No | No | No | No | No | No | No | No | No | No |
| WITS | Yes | No | Yes | No | Yes | Yes | No | Yes | No | Yes | No | Yes |
| Youth Matters | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No | Yes | No | No |
| Zero Program Against Bullying | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes |

Note. Evaluation criteria established by Farrington and Ttofi (2009).

^a Intervention possesses characteristic, but study used a form of intervention without it.

^b Revised version of program now has characteristic.

types of bullying. However, four studies provided a comprehensive definition and measured at least three forms of bullying (Bowllan, 2011; Roland, Bru, Midthassel, & Vaaland, 2010; Sainio, Veenstra, Huitsing, & Salmivalli, 2012; Toner, 2010); and only Sainio et al. (2012) reported significant effects. The lack of significant findings among studies using more comprehensive measurement models suggests that weak measures may inflate reports of program effectiveness.

4.2.2. Measurement pitfalls: aggression versus bullying measures

Suggested above, bullying is a form of aggressive behavior. Bullying is a repeated pattern of aggression intended to harm a person of lower social status or less physical power. Despite this distinction, bullying research literature has many studies that use measures of aggression to assess so-called bullying behavior. Further, many of these studies do not provide a definition of bullying nor do they include the word bullying. The failure to distinguish bullying from other types of aggression may inflate claims of effectiveness.

Eleven (34%) of the 32 studies used aggression or peer relationship measures to assess so-called bullying perpetration and victimization without either providing a definition or including the word bullying in items (i.e., Battey, 2009; Domino, 2011; Elledge, Cavell, Ogle, & Newgent, 2010; Frey et al., 2009; Giesbrecht, Leadbeater, & Macdonald, 2011; Høglund et al., 2012; Leadbeater & Sukhawathanakul, 2011; Li et al., 2011; Waasdorp, Bradshaw, & Leaf, 2012; Wong, Cheng, Ngan, & Ma, 2011; Wright, Bailey, & Bergin, 2012). For example, using a sample of 12,344 elementary school children, Waasdorp et al. (2012) tested the efficacy of the Schoolwide Positive Behavioral Interventions and Supports (SWPBIS) program on “bullying-related behaviors.” Teacher perceptions of bullying behaviors were assessed using four items from the Teacher Observation of Classroom Adaptation – Checklist (TOCA-C; Koth, Bradshaw, & Leaf, 2009). Items included the following: “teases classmates, yells at others, harms others, and fights.” Based on this measure, the authors concluded that “... children in the SWPBIS schools displayed significantly less bullying behavior... [versus] children in the comparison schools” (Waasdorp et al., 2012; p. 153). Although the problematic behaviors of children in the intervention schools might have improved, changes on the TOCA-C do not warrant the claim that SWPBIS is an effective bullying prevention program.

The TOCA-C is often used as a measure of classroom behaviors, but it does not assess bullying. In a confirmatory factor analysis of the full TOCA-C, Koth et al. (2009) found that items loaded onto three factors: concentration problems, disruptive behavior, and prosocial behavior. The four items used in Waasdorp et al.'s (2012) study loaded onto the disruptive behavior factor (Koth et al., 2009). Although bullying is a form of disruptive behavior, the TOCA-C fails to measure power imbalance, repetition, and intent to harm. At best, SWPBIS appears to reduce disruptive behavior. From a construct validity perspective, claims of program effects on bullying cannot be substantiated with the TOCA-C.

The measurement tools used in many studies also lacked content validity. That is, the tools failed to measure the nuances of the bullying dynamic. Although three studies used scales that reportedly measured bullying, little except the word bullying in the title distinguished those scales from other measures of aggression. Second Step (Espelage, Low, Polanin, & Brown, 2013) used the University of Illinois Bullying/Victimization Scale (Espelage & Holt, 2001), Steps to Respect (Brown, Low, Smith, & Haggerty, 2011) used the School Experiences Survey, an adapted version of the Colorado Trust Bullying Prevention Initiative (Csuti, 2008), and the Cool Kids Program (Berry & Hunt, 2009) used the Bullying Incident Scale (Berry & Hunt, 2009). Although these surveys have bullying in their titles, they do not provide a definition of bullying or use the word bullying in the survey items. On balance, the items are comprised of measures for various forms of aggressive behavior. For example, the University of Illinois Bullying/Victimization Scale includes nine items assessing relational (e.g., I spread rumors about other students), physical (e.g., I get hit

and pushed by other students), and verbal (e.g., I helped harass other students) aggression described as bullying. However, these items fail to address the power imbalance, repetition, and intent inherent in the social dynamics of bullying. These items measure poor behavior – relational, physical, and verbal aggression – but they do not necessarily measure bullying.

To examine the issue, Kert, Coddling, Tryon, and Shiyko (2010) administered three versions of a bullying survey to a group of 114 students in Grade 5 thru Grade 8. Version 1 used the word bullying and provided a definition; Version 2 provided only the definition; and Version 3 provided neither the word nor the definition of bullying. All three versions contained identical items. Students who received Version 3 (without the word or the definition) had significantly higher bullying scores as compared with the group that received Version 1 (with the word and the definition). The Version 2 (definition only) and Version 1 groups did not differ significantly (Kert et al., 2010). The findings suggest that students who were not provided the word bullying conflated all aggressive behavior with bullying. That is, lacking a word cue or a definition, when students read a list of behaviors (e.g., hit someone, teased someone, spread rumors), it may not be readily apparent that items refer to bullying.

To provide greater guidance to researchers, educators, and school administrators, the CDC published a manual on the measurement of bullying behavior (Gladden et al., 2014). The manual establishes fundamental definitional components of bullying to be included on bullying measures: 1) unwanted aggressive behavior; 2) observed or perceived power imbalance; 3) repeated multiple times or has a high likelihood of being repeated; 4) causes physical, psychological, social, or educational harm; and 5) occurs between youth who are not siblings or dating partners. Further, the CDC argues that bullying measures should contain core elements including items that assess the frequency of all forms of bullying (i.e., physical, verbal, relational, property damage, and electronic). To better understand the impact of bullying interventions, better measurement is needed, and the CDC's guidelines, if followed, should contribute to more consistent and accurate assessments of bullying behavior.

5. Conclusion

Overall, the findings are mixed. Although effective bullying interventions were identified, up to 45% (i.e., 10 of 22 studies) of the studies showed no program effects on bullying perpetration and 30% (i.e., 8 of 27 studies) showed no program effects on victimization. Of the studies reporting significant effects, compromised measurement reduces the confidence policymakers and others might have that programs are reducing bullying behavior. Among the more rigorously measured programs (i.e., those that measured different types of bullying behavior and provided a comprehensive definition of bullying), only Sainio et al. (2012) reported significant effects. Notably, the Sainio et al. study was conducted in Finland with a homogeneous sample. On balance, interventions implemented outside of the United States and with a homogeneous sample were more likely to report significant effects.

In the United States, the findings convey a somber message. The dearth of significant findings in the United States, and in more culturally diverse settings, warrants greater investigation and renewed efforts to develop bullying prevention programs. In general, measures of bullying fail to fully reflect the construct bullying and to distinguish bullying from other forms of aggressive behavior. To develop a more comprehensive understanding of the effects of bullying prevention programs, program evaluations must also measure physical, verbal, relational, property damage, and cyber forms of bullying behavior. Improved measurement is needed to make stronger inferences about the effects of recent efforts to prevent bullying in elementary and middle schools in the United States.

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