School Psychology Review,
2015, Volume 44, No. 4, pp. 445–463

Replication and Extension of the Early Childhood Friendship Project: Effects on Physical and Relational Bullying

Jamie M. Ostrov, Stephanie A. Godleski, Kimberly E. Kamper-DeMarco, Sarah J. Blakely-McClure, and Lauren Celenza
University at Buffalo, The State University of New York

Abstract. A replication of a preventive early childhood intervention study for reducing relational and physical aggression and peer victimization was conducted (Ostrov et al., 2009). The present study expanded on the original 6-week program, and the revised Early Childhood Friendship Project (ECFP) 8-week program consisted of developmentally appropriate puppet shows, active participatory activities, passive activities, and in vivo reinforcement periods. Both teacher and observer reports were obtained at pretest and posttest for relational and physical bullying, as well as relational and physical peer victimization, for each participating child. The initial sample ($N = 141$; age $M = 45.53$ months; age $SD = 7.29$) included 80 children randomly assigned to the intervention group (six classrooms) and 61 children randomly assigned to the control group (six classrooms). The present study found that the ECFP reduced relational bullying in the intervention group relative to the control group and reduced relational and physical victimization for girls in the intervention group relative to the control group. The importance of early intervention and implications for educators and clinicians are discussed.

A developmental psychopathology perspective emphasizes the importance of early childhood peer relationships and the skills acquired during this key developmental period for setting the stage for later peer interactions and relationships (Sroufe, Egeland, & Carlson, 1999). Therefore, intervening with preschool-aged children to help them begin on a positive trajectory of interpersonal relationships is of critical importance. However, little research to date has investigated intervention programs for reducing aggressive behavior in typically developing preschoolers. Other intervention work with younger children, such as the Incredible Years Dina Dinosaur Classroom (Reid & Webster-Stratton, 2001; Webster-

We acknowledge the many research assistants in the University at Buffalo Social Development Laboratory who have contributed to the collection and management of the data reported in this article. Thanks to Emily J. Hart for her assistance with intervention components of this project. We acknowledge Drs. Greta Massetti and Kirstin Gros for intellectual contributions in the development of the initial ECFP program. Special thanks to the families, teachers, and school directors for their participation and support of our research.

Correspondence regarding this article should be directed to Jamie M. Ostrov, Department of Psychology, University at Buffalo, 227 Park Hall, Buffalo, NY 14260; e-mail: jostrov@buffalo.edu

Stratton, Reid, & Stoolmiller, 2008), has primarily addressed physically aggression (i.e., using physical force to harm others, including hitting and kicking; Dodge, Coie, & Lynam, 2006). When relational aggression (i.e., using removal or the threat of removal of the relationship to harm, including performing social exclusion, making friendship withdrawal threats, ignoring, and spreading malicious rumors, gossip, secrets, and lies; Crick & Grotpeter, 1995) is addressed (for review, see Leff, Waasdorp, & Crick, 2010), the work has primarily been conducted with older children (e.g., Leadbeater, Hoglund, & Woods, 2003; Leff, Goldstein, Angelucci, Cardaciotto, & Grossman, 2007; Leff et al., 2009). Finally, when negative peer behaviors in young children are targeted, mixed results have been demonstrated (Harrist & Bradley, 2003). Specifically, Harrist and Bradley (2003) found some success in their intervention "You can't say you can't play" but also reported difficulty in changing the targeted behavior. Peer acceptance rates improved in the intervention classrooms relative to the control classrooms, but the children did not like the new rule, social dissatisfaction was higher among the intervention classrooms, and rates of social exclusion did not significantly change (Harrist & Bradley, 2003). These mixed findings indicate the need for early childhood programs to highlight how to interact with peers rather than prohibit exclusion.

EARLY CHILDHOOD FRIENDSHIP PROJECT

The primary impetus for the development of the Early Childhood Friendship Project (ECFP) was to design a classroom-based intervention program for early childhood to reduce physical and relational forms of both aggression and victimization. Early childhood was targeted given the notion that the earlier we intervene for aggression, the greater the probability there is for adaptive outcomes (Sroufe, 2013). This initial work was also conducted given the growing literature documenting that physical aggression and relational aggression are uniquely associated with significant social–psychological adjustment problems across development (e.g., peer rejection) and are associated with symptoms of psychopathology (for review, see Murray-Close, Nelson, Ostrov, Casas, & Crick, in press).

Table 1. Weekly Program Themes

Week	Content
1	Introduction and physical aggression
2	Relational aggression: Social exclusion
3	Prosocial behavior: Social inclusion
4	Relational aggression: Friendship withdrawal
5	Friendship formation
6	Reporting versus tattling (mean names)
7	Prosocial behavior: Sharing and helping
8	Conclusions, review, and graduation

The ECFP was developed based on the available evidence-based literature and prior programs (see Ostrov et al., 2009) designed to reduce aggression and conduct problems among young children (e.g., Reid & Webster-Stratton, 2001; Webster-Stratton et al., 2008), as well as several core principles (see Ostrov & Kamper, 2015). These principles include the following: (a) Social modeling of problem-solving and conflict-resolution strategies in a developmentally appropriate manner (e.g., puppets and stories) should decrease bullying and peer victimization subtypes; (b) reductions in classroom-level bullying and victimization behavior would result from modifying reinforcement contingencies within the peer context; and (c) social and emotional skills training would reduce bullying and peer victimization. Moreover, a key belief was that the program should explicitly address both physical and relational forms of aggression to effect change in both behaviors. A focus on reducing both aggression and victimization subtypes was adopted rather than assuming that a reduction in aggression would in turn produce a reduction in peer victimization. In addition, we balanced our program between positive (e.g., inclusion) and negative (e.g., friendship withdrawal) themes (see Table 1) to

reduce the aggressive behavior and avoid iatrogenic effects (i.e., modeling novel aggressive interactions could unintentionally increase aggressive behavior; see Ostrov, Gentile, & Mullins, 2013). A number of these principles are reflected in other school-based bullying and peer victimization intervention programs, and these programs have been found to be efficacious for older samples (e.g., Espelage, Low, Polanin, & Brown, 2013; Leadbeater & Hoglund, 2006; Lochman & Wells, 2004; van Schoiack-Edstrom, Frey, & Beland, 2002).

BULLYING IN EARLY CHILDHOOD

In addition to distinguishing between the general forms of aggression (i.e., physical or relational), we may also make distinctions between general aggression and bullying. Bullying is a subtype of aggression so that all bullying is aggression but not all aggression is bullying (see Leff et al., 2010; Ostrov & Kamper, 2015). The current Centers for Disease Control and Prevention (CDC) uniform definition of *bullying* highlights components of power imbalance and repetition or the likelihood of repetition as the primary distinguishing factors (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014). This definition is important to obtain valid prevalence rates and has numerous clinical and legal implications given the zeitgeist. Thus, aggressive behavior among equal-status friends would not be considered bullying, and even though, as aggression, it should be taken seriously, it would not currently trigger mandated reporting to legal authorities within the United States. We also acknowledge that bullying is an interpersonal relationship process (Pepler, 2006) that involves a focus greater than the sole bully and thus our school-based intervention addresses the peer relations of the entire classroom to address concerns specific to both bullies and victims, which is a common approach in the recent literature (Ttofi & Farrington, 2011). It is important to note that bullying may present in multiple forms (Bradshaw, Waasdorp, & Lindstrom Johnson, 2015; Gladden et al., 2014; Low & Espelage, 2013), and in the present study, both physical and relational forms of bullying were examined. Investigating bullying during early childhood may be particularly important given that it is understudied (for review, see Vlachou, Andreou, Botsoglou, & Didaskalou, 2011). The research that has been conducted has shown not only that bullying is prevalent during this period (Vlachou et al., 2011) but also that experiencing bullying during early childhood is associated with negative social outcomes, such as unhappiness at school (Arseneault et al., 2006).

CURRENT STUDY AND HYPOTHESES

The current randomized controlled trial (RCT) serves as an opportunity for replication and extension of the initial trial of the ECFP program. The initial 6-week trial showed that intervention classrooms had large reductions in relational aggression and physical victimization relative to control classrooms. Intervention rooms also showed moderate reductions in physical aggression and increases in prosocial behavior relative to randomly assigned control classrooms. Only small decreases were documented for relational victimization (Ostrov et al., 2009). Although an important first step in creating an intervention that addresses relational and physical aggression and victimization, the initial findings were only reported at the level of the classroom (Ostrov et al., 2009). The current study addresses the efficacy of an expanded program at the individual child level in a new sample, as suggested by Leff, Waasdorp, and Crick (2010) in their evaluation of the ECFP for reducing relational aggression and peer victimization. The core principles and features of the program are similar to the initial trial (Ostrov et al., 2009), but several additional substantive changes were adopted for the present study. First, on the basis of prior feedback from our key stakeholders, we expanded the program from 6 to 8 weeks to add two new social skills lessons (i.e., 1 week focusing on tattling versus reporting and 1 week emphasizing sharing and helping). Second, to ad-

dress the aforementioned key limitation (see Leff, Waasdorp, & Crick, 2010), we collected our data in a manner that permitted the individual child to serve as the unit of analysis. Third, we examined whether the intervention was effective at reducing bullying behavior. To this end, we developed a new measure of bullying subtypes for this developmental period, and the present study is one of the first to examine both physical and relational subtypes of bullying among 3 to 5 year olds. That is, a few prior studies have purported to examine the presence of bullying behaviors among young children (e.g., Monks et al., 2009), but prior studies have rarely adopted the present definition of bullying and, thus, the current study is one of the first known studies to examine the presence of bullying among very young children using a specific definition of bullying rather than a general aggression–victimization construct (Gladden et al., 2014). The psychometric properties of this measure will be introduced and present an additional contribution of our study independent of the intervention goals. Fourth, in the present study, we examined the moderating influence of gender, which has rarely been examined in this developmental period and with similar intervention programs. Therefore, the present study provided an opportunity to extend the literature by examining the impact of an expanded ECFP on physical and relational bullying (as well as peer victimization) for boys and girls in preschool.

Given the success of the initial RCT, we anticipated confirmation of our two specific hypotheses representing the extension of the program to the study of bullying behaviors. First, we hypothesized that children in the intervention classrooms would show a significant reduction in physical bullying relative to children in the control classrooms. Second, we hypothesized that children in the intervention classrooms would show a significant reduction in relational bullying compared with children in the control group. Finally, we examined the moderating role of gender. Given significant within-gender differences for aggression subtypes during early childhood (i.e., the modal form of aggression is relational for girls; Ostrov, Kamper, Hart, Godleski, & Blakely-McClure, 2014), we anticipated the possibility of gender moderation. However, given the lack of prior work and theory regarding bullying behaviors during early childhood, these questions were exploratory.

METHOD

Children were recruited from six schools that were recently accredited or are currently accredited by the National Association for the Education of Young Children (12 classrooms) throughout the western New York area. These schools serve children from primarily middle-class families and comprise four schools associated with universities and two institutions with religious affiliations. These schools are located in urban areas (two schools) and suburban areas (four schools). Schools were selected to represent the larger diverse community, but to reduce confounding variables, only centers deemed above average in quality (i.e., as indexed by their current or recent national accreditation status and informal observations made by the first author) were invited to participate. In addition, all schools had previously participated in prior basic or applied research by the research team, but no active intervention work had occurred within the schools for roughly five years and three schools (eight classrooms) had not participated in prior intervention research. Schools were contacted directly by the principal investigator and invited to participate in the study. All of the schools and classrooms that were contacted participated in the study.

Participants and Measures

Recruitment yielded an initial sample of 141 participants (67 girls) (age $M = 45.53$ months; age $SD = 7.29$). The participating families represented diverse ethnic backgrounds (3% African American, 11% Asian, 69% White, 2% Hispanic, 14% biracial, 1% other). Randomization occurred at the level of the classroom, with each classroom being assigned a number and those numbers being randomized (with a random number generator) to either intervention or control. Six class-

rooms were randomized to the intervention group ($n = 80$; 57%), and six classrooms were randomized to the control group ($n = 61$; 43%). There were a few schools that contained both an intervention classroom and a control classroom, but concerns about contamination were low given that the children and staff did not interact during the day and had different playground times. There were two cases in which classrooms were next to each other with a partitioning divider between the rooms. These rooms were known to have joint free-play periods and shared staff during the day; therefore, these rooms were combined prior to randomization. One classroom was a multiage room (i.e., 3 to 5 years), whereas the others were designated for 3 or 4 year olds. There were equal numbers of girls ($n = 40$) and boys ($n = 40$) assigned to the intervention but slightly (although not statistically significant) more boys ($n = 34$) than girls ($n = 27$) in the control group. Classroom size was not significantly different between the intervention ($M = 13.33$, $SD = 4.68$) and control ($M = 10.17$, $SD = 2.23$) groups, but the effect size was large, $t(10) = 1.50$, $p = .17$, $d = 0.86$. There were no group differences in demographic information such as ethnicity, highest parent occupation level (used as a proxy for socioeconomic status and based on the index of Hollingshead, 1975), and gender. Even though there was randomization at the level of the classroom, there was a significant difference between the intervention and control groups regarding age such that children in the intervention group ($M = 43.47$ months, $SD = 6.96$) were significantly younger than children in the control group ($M = 47.99$ months, $SD = 6.97$), $t(116) = -2.30$, $p = .023$, $d = -0.65$. Over the course of the school year, attrition within the study was low (eight children [four girls] within intervention group and two children [one girl] within control group), with 92.7% of the sample continuing their participation at Time 2. However, there were some missing data resulting from teacher packets that were not returned at the posttest and were excluded from the study, which resulted in a reduction in the intervention sample by 16 children (10 girls). Ultimately, this resulted in a final study sample of 56 children (26 girls) in the intervention group and 59 children (26 girls) in the control group. Those children who dropped out of the study did not significantly differ on any key study variables.

General Aggression Subtypes

Relational and physical aggression was measured using the Preschool Proactive and Reactive Aggression (PPRA) scale (Ostrov & Crick, 2007). The Preschool Proactive and Reactive Aggression–Teacher Report (PPRA-TR), originally based on the Forms and Functions of Aggression Measure (Little, Jones, Henrich, & Hawley, 2003), includes 14 items used to assess aggressive behavior. Subscales include three items to assess both forms and functions (i.e., proactive physical aggression, reactive physical aggression, proactive relational aggression, reactive relational aggression) of aggressive behavior in early childhood and two positively toned items. This measure was completed by teachers as well as by observers (i.e., PPRA–Observer Report; see Ostrov, Murray-Close, Godleski, & Hart, 2013). Previous research has supported the use and validity of observer reports of aggressive behavior (e.g., Murray-Close & Ostrov, 2009; Ostrov et al., 2013). A composite of both teacher and observer reports was used to assess general aggressive behavior for validity purposes. Observers were given the same instructions as teachers when completing all of the observer report forms. Because it was impossible to conceal the group status (i.e., intervention versus control) from the teachers whereas observers were blind to intervention status throughout the entire study, observer report was used to better account for any bias that teachers might have. Teachers were unaware of the study hypotheses, which provided more reassurance that a composite was the best solution to incorporate teachers—the typical informants when reporting on aggression in early childhood—and observers. Observers included nine female undergraduate and three graduate students.

To inform observer reports, trained observers conducted a series of eight 10-min observations using focal child sampling with

continuous recording procedures over a 2-month period to record physical and relational aggression, as well as physical and relational victimization (see Ostrov & Keating, 2004). Observations were similar in length of time and setting across the schools, with minor variations in length based on the number of participants in a given classroom. These structured observations were not used in the present study and were only designed to familiarize observers with the children and their behavior prior to completion of the observer reports that were adopted in the present article. On completion of all of the observations, one observer from each classroom was randomly selected to complete the reports for each participant. Within the current study, each of the four subscales was internally consistent at both time points (Cronbach's $\alpha s > 0.87$) and the correlation between teacher and observer reports was moderate and significant at Time 1 (i.e., for relational aggression, $r = 0.35$, $p < .001$; for physical aggression, $r = 0.52$, $p < .001$). For ease of communication, only Time 1 findings are presented for all validity analyses; Time 2 findings are available on request by contacting the first author.

Bullying Subtypes

Both teachers and observers also completed a newly revised rating of bullying that expands on the PPRA scale (see above) originally developed by Ostrov and Crick (2007). This adapted measure, the Preschool Bullying Subscales Measure (PBSM; Ostrov & Kamper, 2012), uses the aforementioned CDC definition to distinguish it from items measuring aggressive behavior. Wording from the PPRA-TR was modified to include repetition and power imbalance [e.g., "to get what this child wants, s/he *repeatedly* will take things (e.g., toys) away from others with *less power* (e.g., smaller, younger, or has fewer friends)"]. The measure has 18 items evaluating the forms and functions of bullying on a 5-point Likert scale from 1 (*never or almost never*) to 5 (*always or almost always*). Specifically, the measure includes four subscales: proactive physical bullying (four items; e.g., "this child *repeatedly* hits, kicks, or punches others with *less power* to get what s/he wants"); reactive physical bullying (four items; e.g., "if other children make this child mad, s/he will *often* physically hurt those with *less power*"); proactive relational bullying (four items; e.g., "this child *repeatedly* keeps other with *less power* from being in her/his group of friends to get what s/he wants"); and reactive relational bullying (four items, e.g., "if other children hurt this child, s/he *often* keeps those with *less power* from being in his/her group of friends"). Two positively toned filler items were also included. For the current study, function (e.g., proactive and reactive) was not analyzed separately and physical and relational bullying composites were made by summing those items from both teacher and observer reports. Teacher (PBSM-TR) and observer (PBSM-OR) reports were significantly correlated at Time 1 for relational bullying ($r = 0.27$, $p = .002$) and physical bullying ($r = 0.46$, $p < .001$). These composites showed high reliability for physical bullying at Time 1 (Cronbach's $\alpha = 0.94$) and Time 2 (Cronbach's $\alpha = 0.91$) and for relational bullying at both time points (Cronbach's $\alpha s = 0.93$ and 0.91, respectively).

As part of the measurement revision for assessing bullying subtypes, the PBSM was evaluated by several aggression and bullying experts at a national research conference. Initially, the content experts evaluated the measure for content validity and provided ample feedback and ideas to improve the measure. Feedback was integrated to address all aspects of the definition of bullying. Pilot work regarding the measure has shown good reliability (Cronbach's $\alpha s > 0.80$) and validity (e.g., significant associations between teacher and observer ratings). In addition, the physical and relational subscales of the PBSM were significantly correlated with the physical and relational subscales of the PPRA (rs ranged from 0.54 to 0.67). These correlation coefficients show significant ($p s < .01$) association between aggression and bullying behavior but highlight that the PBSM captures a subset of aggressive behavior different than general physical and relational aggression.

Peer Victimization

For each time point, both teachers and observers completed a revised version (see Godleski, Kamper, Ostrov, Hart, & Blakely-McClure, 2015) of the Preschool Peer Victimization Measure (PPVM)–Teacher Report (Crick et al., 1999). The revised measure used in the present study contained twelve items, which included four items assessing relational victimization (e.g., "This child gets left out of the group when someone is mad at them or wants to get back at them") and four items assessing physical victimization (e.g., "This child gets pushed or shoved by peers"). There were also four positively toned filler items. On a 5-point scale from 1 (*never to almost never true*) to 5 (*always or almost always true*), both teachers and observers rated how frequently the focal children experienced physical or relational victimization. Past research has shown acceptable reliability for this measure (Godleski et al., 2015; Ostrov, 2010). Teacher and observer report measures on the PPVM were significantly and moderately correlated at Time 1 for both subscales (e.g., physical victimization at Time 1, $r = 0.30$, $p < .001$). Each subscale was summed across both informants, and a composite of teacher and observer reports was created. For the current study, Cronbach's αs were 0.83 for relational victimization and 0.80 for physical victimization at Time 1 and 0.82 for relational victimization and 0.81 for physical victimization at Time 2.

Program Implementation

To assess the fidelity and integrity of program implementation, the interventionists maintained weekly logs, which were reviewed by the first and second authors and discussed during weekly supervision meetings. Furthermore, during implementation, each of the interventionists met together for small-group weekly supervision with the first and second authors to address any ethical or clinical concerns, including any potential issues brought up in the weekly interventionist logs, as well as to practice upcoming lessons and activities in the program manual. The first and second authors each conducted observations of the interventionists implementing the weekly lesson using a randomly generated schedule. These observations formally assessed the fidelity of the implementation by each interventionist at least twice. A checklist was used to verify completion of required program components (e.g., the interventionist introduced the puppet and conducted the puppet show, the interventionist asked at least two comprehension questions). This checklist comprised the content component of the fidelity assessment. In addition, the first and second authors completed a series of ratings of the implementation style used by the interventionist on the following domains: interventionist warmth, communication style (pacing and modulation), developmental appropriateness, and child engagement and interest. A 7-point rating scale from 1 (*superior*) to 7 (*inappropriate*) comprised the process component of this assessment.

Teacher Evaluations

At the conclusion of the intervention, teachers were given evaluation forms. For each question (e.g., "The children in my classroom benefited from the program"), a 5-point Likert rating scale from 1 (*strongly disagree*) to 5 (*strongly agree*) was used. All head teachers completed the evaluation form.

Interventionist Evaluations

At the conclusion of the intervention, the interventionists completed an evaluation of the intervention. The interventionists responded to several questions (e.g., "Teachers were actively engaged in the program") on a 5-point rating scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Procedure

The study was approved by the university's social and behavioral sciences institutional review board (IRB), and parents provided written consent prior to participation. For children to participate in the study and to receive the intervention, consent forms were sent home for each student within all 12 classrooms and parents were required to complete and return the written consent forms. Given the nature of the classroom intervention, ef-

forts were made to recruit all children within each classroom; however, a small number of children (<10%) did not receive parental consent. During the implementation of the intervention, in accordance with local IRB stipulations, these children would often engage in another activity with a teacher rather than participate in the intervention (described below). Children's head teachers also provided written informed consent prior to completing reports. Teacher reports were always distributed when approximately half of the observations were completed. Teachers were provided an honorarium ($10 to $25 gift certificate depending on class size) after completing packets at each time point. Participants and school personnel received newsletters summarizing the major results of the project.

Observer Training

Observers were trained to recognize physical and relational aggression and victimization in early childhood (Ostrov & Keating, 2004). They went through training consisting of in-depth readings, coding of videotaped aggressive and nonaggressive interactions, discussion with the principal investigator, and practice observations within the classroom (see Crick et al., 2006). After completing six standard observation sessions using videotapes (without pausing or rewinding) from prior studies, as well as passing a multiple-choice and matching examination testing understanding of the definitions of the constructs and appropriate use of the observation codes (with discussion regarding any errors or omissions), observers spent a minimum of 2 days within the classroom to decrease reactivity and allow the participants to acclimate to the observers' presence.

Intervention Details

The intervention comprised 8 weeks of lessons and activities designed to address physical and relational aggression, physical and relational victimization, and prosocial behavior among 3 to 5 year olds. Each week involved 4 intervention blocks: an interventionist-led lesson facilitated by puppets, in vivo practice through reinforcement during free play, a passive participatory activity (e.g., craft), and an active participatory activity (e.g., game). For the group lessons, developmentally appropriate animal puppets were used to aid discussion and learning about the week's topic (e.g., physical aggression, exclusion, inclusion, friendship withdrawal, and friendship loss; see Table 1), through either puppet shows or positive role-playing, to help children practice appropriate skills with the puppets. The interventionist and puppets then actively positively reinforced the targeted skills during free play. Active and passive activities were meant to solidify the week's lesson with the preschoolers while also facilitating teacher collaboration. The activities were tailored to the teacher's needs and classroom structure and function, which allowed for flexibility in implementation within different classroom settings. That is, the core of the program (i.e., puppet shows, reinforcement periods) was identical across classrooms. Slight variations were occasionally offered (e.g., passive activities could be modified such that students in one classroom could make their own puppets and practice the weekly lesson and participants in another room could read a book created for the project that reinforced the lesson of the week). As mentioned earlier, the intervention manual was updated and revised from the pilot study (Ostrov et al., 2009) to include additional lessons: a lesson focusing on helping and sharing behavior as well as a lesson on verbal aggression with an emphasis on understanding the difference between tattling and reporting.

Interventionists were all PhD students in child clinical psychology or early childhood education with extensive knowledge of child development. They were trained prior to implementation through readings, in vivo training, demonstrations, and guided practice and role-playing of skills. Training generally focused on knowledge of the lessons and manual, use of the puppets as part of the lessons and reinforcement periods, and use of developmentally appropriate labeled praise. Weekly training sessions with the puppets were videotaped for review and later discussion. Preintervention and postintervention reports of

child behavior were assessed to document change over the course of the intervention; baseline (Time 1) data were collected 2 to 3 weeks before the intervention, and follow-up (Time 2) was conducted 2 to 3 weeks after implementation of the intervention concluded. Teachers and interventionists completed evaluations of the program once all program and formal assessments were finished. Control classrooms operated as they typically would. For ethical reasons, classrooms that were initially assigned to the control condition were given the intervention a few months later, but no outcome data were collected.

RESULTS

First, preliminary analyses (i.e., descriptive statistics, stability, correlations between study variables) were conducted. Less than 1% of subscale items were missing, and mean imputation was used when 75% of the participant's responses were available for a given scale. Second, analyses of fidelity and acceptability, as well as teacher engagement, were run. Third, the key study models were run with a series of analyses of covariance (ANCOVAs).

Preliminary Analyses

First, descriptive statistics were calculated; these are found in Table 2. Outliers (>3 *SD*s above the mean) were reduced to the value of 3 *SD*s above the mean (Kline, 2011). Skew was less than 3 (range = 0.31 to 2.30) and kurtosis was less than 8 (range = –1.18 to 6.2), suggesting that nonnormality of the data was not a concern (Kline, 2011) for all variables.

Second, attrition analyses (a series of independent-group *t* tests) did not indicate any significant differences between children who stayed in the study and those who left the study ($n = 10$) on any of the key study variables, $ts < 1.40$, $ps > 0.16$. Third, correlations between study variables were conducted; these are presented in Table 2. They are separated by intervention status to examine differential associations at pretest (see Table 2), and Fisher *r*-to-*z* tests were conducted comparing the groups for all intercorrelations at pretest. Only one of the six associations was significantly different. That is, the intercorrelation between physical and relational victimization at pretest was significantly higher for the control group relative to the intervention group, $z = -2.46$, $p < .05$. In general, the groups displayed similar patterns of association for all behaviors of interest at pretest.

Fourth, a series of independent-group *t* tests was run to compare initial levels of the four main dependent variables (i.e., physical and relational bullying as well as physical and relational victimization). Only one difference emerged between the intervention and control groups at pretest, and this was found for physical victimization, $t(137) = -2.51$, $p = .013$, $d = -0.43$, suggesting that despite our randomization procedures, the intervention group ($M = 11.83$, $SD = 3.67$) started off lower on the level of physical victimization than the control group ($M = 13.52$, $SD = 4.22$). This finding underscored the importance of controlling for initial levels of the outcome in all subsequent models.

Fidelity and Acceptability

The content checklists indicated that the interventionists covered all key program requirements as dictated in the program manual for each weekly lesson (i.e., 100% of material covered in each session). The process ratings indicated that the average rating was 1.44 ($SD = 0.63$), suggesting superior performance. The interventionists were rated as being warm, being developmentally appropriate, having good pacing and communication style, providing praise to the children, and being engaged in the task.

The evaluations from teachers were positive as the mean response was above 4.5 (on a 5-point scale) on all items. The findings suggest that the teachers believed the interventionists were effective and the program was beneficial, supporting the acceptability of the program (see Table 3). Although there was variability with the interventionist evaluations suggesting some differences in teacher engagement across the classrooms, the interventionists indicated that, on average, the teachers

Table 2. Descriptive Statistics and Correlations Between Key Study Variables

	Physical Bullying at T1	Physical Bullying at T2	Relational Bullying at T1	Relational Bullying at T2	PVICT at T1	PVICT at T2	RVICT at T1	RVICT at T2	*M*	*SD*	Range
Physical bullying at T1	—	.51***	.44***	.14	.54***	.36**	.57***	.34**	23.21	10.69	16.00–66.00
Physical bullying at T2	.75***	—	.42**	.68***	.12	.43***	.28*	.53***	21.80	7.80	16.00–52.00
Relational bullying at T1	.70***	.57***	—	.59***	.24*	.13	.68***	.48***	26.41	10.06	16.00–48.00
Relational bullying at T2	.46***	.65***	.62***	—	−.09	.32*	.35**	.61***	24.17	9.58	16.00–49.00
PVICT at T1	.48**	.47**	.35**	.18	—	.44***	.41***	.12	11.83	3.67	8.00–22.00
PVICT at T2	.18	.48***	.09	.29*	.52***	—	.25	.65***	12.29	3.22	8.00–18.00
RVICT at T1	.46***	.45***	.64***	.35**	.71***	.22	—	.56***	15.22	5.42	8.00–29.00
RVICT at T2	.23	.48***	.26*	.56***	.09	.64***	.16	—	15.58	5.74	8.00–30.00
M	22.86	23.74	25.44	28.58	13.52	13.84	14.84	17.25			
SD	10.16	8.53	9.72	9.62	4.22	4.34	4.31	5.14			
Range	16.00–59.00	16.00–55.00	16.00–63.00	16.00–55.00	8.00–24.00	8.00–26.00	8.00–26.00	8.00–31.00			

Note. All variables represent composites of observer and teacher reports. Above the diagonal is the intervention group, and below the diagonal is the control group. PVICT = physical victimization; RVICT = relational victimization; T1 = Time 1 (pretest); T2 = Time 2 (posttest).
*$p < .05$, **$p < .01$, ***$p < .001$.

Table 3. Descriptive Statistics for Teacher and Interventionist Evaluations

	M	*SD*
Teacher evaluations		
The program was entertaining for the children.	5.00	0.00
The interventionist was knowledgeable and skilled in handling program topics and content.	4.83	0.41
The program was developmentally appropriate for my classroom.	5.00	0.00
The children in my classroom benefited from the program.	4.67	0.52
I would recommend this program to other teachers in my school.	4.83	0.41
Interventionist evaluations		
Teachers were supportive of the program and provided classroom management when needed.	3.83	0.75
Teachers were actively engaged in the program.	3.50	0.84
Children in the classroom benefited from the program.	4.17	0.75
Children actively attended and participated in weekly intervention tasks.	4.33	0.82
Children in the classroom were engaged with the program components.	4.33	0.52

Note. Responses were recorded on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

were engaged and supportive of the program and that the children seemed engaged with the content and, in the interventionists' view, benefited from the program (see Table 3).

Key Study Models

A series of 2 (Intervention status) × 2 (Gender) ANCOVA models with baseline levels of the outcome variable serving as the covariate was conducted. In addition, each model controlled for baseline levels of the alternative subtype of bullying or victimization. The dependent variable was the posttest assessment. Four main models were examined, and three follow-up models were run for comparison purposes with the prior trial. For ease of interpretation and comparison with prior studies, Time 2 estimated marginal means are provided and Cohen's *d* statistics are reported as a measure of the magnitude of the effect (see Table 4). Cohen's (1988) effect size recommendations define $d = 0.2$ as small, $d = 0.5$ as medium, and $d = 0.8$ as large effects. Given the variability in class size ($M = 11.75$, $SD = 3.86$, range = 7 to 18) and the aforementioned significant difference between the intervention and control groups with respect to age of the participants, we ran all models controlling for age and class size and the overall pattern of effects was similar; thus, for ease of communication and parsimony, the models without these covariates are shown.

In the first model, physical bullying at posttest was the dependent variable. A nonsignificant main effect for intervention status was revealed, $F(1, 101) = 1.78$, $p = .185$, $\eta_p^2 = 0.017$. The effect size suggests a small effect. The intervention group did not show lower levels of posttest physical bullying compared with the control group, controlling for initial levels of bullying behavior.

In the second model, relational bullying at posttest was the dependent variable. A significant main effect for intervention status emerged, $F(1, 100) = 7.03$, $p = .009$, $\eta_p^2 = 0.07$ (see Table 4). The effect size suggests a medium effect. The children in the intervention group had significantly lower levels of relational bullying at posttest compared with the control group, controlling for initial levels of bullying behavior. An inspection of the means (see Table 2) indicates that those in the intervention group decreased in their rates of relational bullying compared with the control group, which increased in their rates of relational bullying.

Table 4. Summary of Intervention Effects and Effect Sizes

Model (Dependent Variable)	Key Finding	M_{INT} (*SD*)	M_{CON} (*SD*)	Effect Size (Cohen's *d*)
Physical bullying at T2	Main effect for intervention status	21.83 (6.26)	23.48 (6.39)	−0.26
Relational bullying at T2	Main effect for intervention status	24.41 (7.86)	28.45 (7.86)	−0.51
Physical victimization at T2	Gender × Intervention status			
	Simple effect for girls	11.21 (2.91)	13.35 (2.89)	−0.74
	No effect for boys	14.01 (3.76)	13.60 (3.73)	0.11
Relational victimization at T2	Gender × Intervention status			
	Simple effect for girls	14.33 (5.72)	18.29 (5.70)	−0.69
	No effect for boys	16.74 (4.50)	16.56 (4.48)	0.04

Note. All dependent variables represent composites of observer and teacher reports. All models controlled for pretest (baseline) levels of the outcome variable, and estimated marginal means at Time 2 are presented. Standard deviations and Cohen's d values were calculated for ease of communication and for comparison purposes with the initial Early Childhood Friendship Project trial. The full analysis of covariance findings are reported within the text. CON = control group; INT = intervention group; T2 = posttest.

The third model tested for intervention effects with physical victimization at posttest as the dependent variable, and a significant two-way interaction between intervention status and gender emerged, $F(1, 105) = 4.37$, $p = .039$, $\eta_p^2 = 0.04$. Follow-up tests showed a significant simple effect of intervention status for girls, $F(1, 47) = 6.96$, $p = .011$, $\eta_p^2 = 0.13$, but no effect for boys, $F(1, 57) = 0.18$, $p = .67$, $\eta_p^2 = 0.003$. The effect size indicates a medium effect. An examination of the means (see Table 4) shows that girls in the intervention group showed a significantly lower level of physical victimization relative to girls in the control group, controlling for initial levels. Moreover, an inspection of the pretest and posttest means for girls (see Table 4 for posttest) indicates that those in the intervention group ($M_{pretest} = 11.46$, $SD_{pretest} = 3.48$) decreased in their rates of physical victimization whereas those in the control group ($M_{pretest} = 12.35$, $SD_{pretest} = 3.79$) increased in their rates of physical victimization.

The fourth model tested for intervention effects with relational victimization at posttest as the dependent variable. A significant main effect for intervention status emerged, $F(1, 107) = 3.94$, $p = .050$, $\eta_p^2 = 0.035$, but this effect was qualified by a significant two-way interaction between intervention status and gender, $F(1, 107) = 4.55$, $p = .035$, $\eta_p^2 = 0.041$. Follow-up tests indicated a significant simple effect of intervention status for girls, $F(1, 48) = 6.25$, $p = .016$, $\eta_p^2 = 0.12$, but no effect for boys, $F(1, 57) = 0.02$, $p = .880$, $\eta_p^2 < 0.001$. The effect size indicates a medium effect for girls. An inspection of the means (see Table 4) shows that girls in the intervention group had significantly lower levels of relational victimization at posttest than girls in the control group, controlling for initial levels of victimization. Moreover, an inspection of the pretest and posttest means for girls (see Table 4 for posttest) indicates that those in the intervention group ($M_{pretest} = 15.03$, $SD_{pretest} = 5.10$) decreased in their rates of relational victimization whereas those in the control group ($M_{pretest} = 14.26$, $SD_{pretest} = 3.98$) increased in their rates of relational victimization.

DISCUSSION

The goal of the current study was to replicate and extend the initial ECFP program. As previous research had identified, there was a need to examine the efficacy of the program at an individual level (Leff, Waasdorp, & Crick, 2010) because the initial results were reported with only the classroom as the unit of analysis (Ostrov et al., 2009). The present

study examined the efficacy of an expanded version of the ECFP, an 8-week randomized trial (expanded from the original 6-week trial) to address physical and relational bullying, as well as physical and relational victimization, among 3 to 5 year olds.

First, the present RCT showed appropriate levels of fidelity and acceptability. Second, in support of our hypotheses, the program was found to be effective at significantly lowering relational bullying in the children receiving the intervention relative to the control group. These findings were robust to age differences between the intervention and control groups at Time 1 because controlling for age did not change the pattern of effects. Moreover, these reductions were considered medium effects. Nonsignificant reductions were documented for physical bullying among the intervention group participants relative to the control group participants, who appeared to increase in their rates of physical bullying. This pattern of effects was in the predicted direction, but the effect size suggested only a small effect. Third, for both physical and relational victimization, there was a significant interaction of gender and intervention status. Significant differences were found in relation to physical and relational victimization levels in the intervention and control classrooms only for girls, but not for boys. That is, for girls in the intervention classrooms, there were significantly lower levels of receiving physical aggression and receiving relational aggression compared with girls in the control classrooms. It is important to note that the intervention group also had significantly lower levels of physical victimization at baseline, or Time 1; however, the findings were based on changes in physical victimization given initial levels. Thus, despite this initial difference, the level of change was significantly different between the groups over the course of the intervention. Specifically, girls in the intervention group had significantly lower levels of physical victimization and showed decreases in their physical victimization levels over time compared with girls in the control group, whose physical victimization levels increased. It is not entirely clear why the program decreased peer victimization only for girls and not for boys. Past programs with older children have shown similar findings regarding boys. A study of the Preventing Relational Aggression in Schools Everyday (PRAISE; Leff et al., 2010) program, a 20-session classroom-based universal prevention program for use within urban school contexts, also found that the program was not as effective for boys relative to girls. Leff et al. (2010) reported that boys found the materials and concepts to be engaging, but the authors argued that additional generalization strategies and supports, especially for high-risk boys, may be needed for the boys to benefit from the school-based program. In addition, they posited that for programs such as PRAISE to be more effective for boys, it may need to be focused on problem-solving strategies within the context of competitive sport activities (Leff et al., 2010). It is conceivable that similar approaches would be helpful and should be considered when implementing future programs for young boys.

In contrast to the original investigation of the ECFP, the effect sizes were generally lower in our study. That is, the initial trial showed that intervention classrooms had large reductions in relational aggression relative to control classrooms, whereas the present trial showed significant but medium effects for relational bullying. Intervention rooms also showed moderate reductions in physical aggression relative to randomly assigned control classrooms in the initial study, whereas the present trial yielded small and nonsignificant effects for physical bullying. It is notable that we saw reductions in bullying behavior in the current trial, which may be more difficult to change given the lower base rate of bullying experiences relative to general aggressive behavior. The initial trial showed large reductions in physical victimization for intervention classrooms relative to control classrooms, whereas the current study showed moderate effects only for girls. Only small decreases were documented for relational victimization in the initial trial (Ostrov et al., 2009), and moderate effects were found in the present RCT but only for girls. In general, it is hard to compare the two RCTs because measuring at

the individual child level instead of the classroom level, as well as accounting for more fine-grained analyses of peer behavior (i.e., including bullying as well as victimization), may account for the slightly different effect sizes in the current RCT. The focus of our intervention was more so on relational aggression (i.e., 2 weeks are dedicated to the topic) relative to physical aggression (i.e., only 1 week explicitly addresses physical aggression; see Table 1). Future trials should expand the coverage of physical aggression, and perhaps with a greater dosage, the magnitude of the effects will improve. However, despite the small to medium effects in the current trial, we assert that the findings have clinical significance. It is notable that we saw significant reductions in relational bullying, which is perhaps a more insidious form of aggression relative to general relationally aggressive behavior. Moreover, for relational bullying, the documented average drop for children in the intervention classrooms coupled with an average increase for children in the control classrooms suggests that the program leads to meaningful changes. Bullying behavior has serious legal and clinical implications for children and families (see Lovegrove, Bellmore, Green, Jens, & Ostrov, 2013), and this suppression or reduction in the behavior has the potential to help children avoid most bullying behavior.

The present study makes several important contributions to the developmental, school psychology, and clinical science literature. First, this study is a replication and extension of the first preliminary ECFP study. The current trial of the ECFP showed efficacy in reducing negative peer behaviors at the level of the child. This extends on the past research that found positive effects at the classroom level (Ostrov et al., 2009). It is important to note that the present study is also the first known study to investigate both relational and physical forms of bullying with an early childhood sample. Furthermore, the study measure developed for the assessment of multiple forms of bullying during the early childhood period conforms to the current CDC definition of bullying (Gladden et al., 2014) instead of assessing general aggression or victimization. The introduction of the PBSM was another contribution of the present study. The PBSM was determined to be valid (i.e., based on significant moderate associations across informants) and internally consistent but also showed sensitivity to change over the course of the intervention. The PBSM is based on existing early childhood aggression methods with strong psychometric properties (e.g., Ostrov & Crick, 2007), and with parallel teacher and observer report options, it should be useful to school-based scholars and practitioners. In particular, the ECFP program facilitated a reduction in relational bullying in intervention classrooms whereas control classrooms exhibited an increase in relational bullying. Given the differing implications for and definitions of *general aggression* versus *bullying*, it is important to consider forms of both types of peer behavior. This is especially the case because children who are bullied may be at particularly greater risk of negative outcomes than children who experience aggression without chronicity or the power imbalance and, as such, these children may warrant an increased urgency to intervene (Hunter, Boyle, & Warden, 2007; Solberg & Olweus, 2003).

Limitations

Although the current study addressed a number of weaknesses articulated in preliminary work conducted using the ECFP (Ostrov et al., 2009), including conducting analyses at the level of the child, there are still several limitations that should be focused on in future work. First, although naturalistic observations would be the best measure of our outcome variables, because our observers were unaware of classroom condition and were well trained in observing aggression and victimization, our secondary analysis designed to explicitly code for bullying behaviors resulted in a relatively small number of behaviors and could not be used in the present study because of restricted range concerns, as well as reliability problems. In the future, if a new system is developed that explicitly trains observers to recognize power differentials and repetition,

some of the concerns might be avoided. A number of significant obstacles (and threats to validity and reliability) are present in this work, including a decision regarding how to properly operationalize and document repetition (i.e., Should repetition occur only within the 10-min observational sampling session, or might it be based on prior knowledge or observation of repetition?).

It is important to note that the current intervention is only a short, 8-week intervention conducted by study staff in the classroom. As previously mentioned, the staff conducting the intervention were trained in the procedures and reinforcement strategies thought to be most effective in the intervention. Teachers did not receive any additional training regarding the lessons or reinforcement strategies implemented by the staff throughout the week. This decreased the likelihood that teachers were engaging in reinforcement and intervention strategies aimed at reducing bullying and victimization within these classrooms. Future work should consider including seminars to help teachers engage in similar reinforcement strategies when program staff are not in the classroom. This would likely help increase teacher engagement in the program as well as help yield general reductions in levels of bullying, aggression, and victimization over the course of the intervention. In turn, teachers might feel more connected to the program as well as change the overall classroom climate to encourage friendship formation and be more vigilant concerning problem behaviors. For the ECFP to be disseminated on a larger scale, teachers need to be involved throughout the intervention.

Similarly, there was no emphasis on behavior change outside of the classroom. Given that many empirically supported behavioral treatments in early childhood often focus on parent training or training within the home, incorporation of these treatment packages may increase behavior change. In line with these articulations, interventions with a focus on changing social behaviors are often examined among peers. Interventions incorporating peer relations outside of the classroom environment might help children generalize these outcomes and help influence behavior more globally.

In terms of methodology, there are a few considerations that need to be raised. First, we did lose 10% (eight individuals) of the sample within the intervention group because of attrition and an additional 16 children because of missing teacher packets from one intervention classroom. We also had fewer than 60 participating children in the control group. This reduced sample size does increase concern that our study was underpowered for the analyses conducted. This could help to explain the limited findings concerning physical bullying and victimization for boys. Increased sample sizes in the future would likely help account for this limitation. Second, the overall effect sizes were small to medium and were smaller than those in the initial ECFP trial. We attribute these small effect sizes to our use of the child as our unit of analysis, something not done in the prior trial with the ECFP. It is important to acknowledge that this community sample from high-quality early childhood programs is not likely to be engaging in high levels of aggressive or bullying behavior, making large effect sizes harder to establish. This study might have shown different outcomes if examined in a more at-risk population in which aggression and bullying are more prevalent. Classroom size may also be an important factor to consider when implementing intervention strategies. On average, the sizes of the classrooms were not significantly different from one another, but the magnitude of the effect size suggested a meaningful difference. Intervention rooms tended to have a larger number of children in them. The larger class size may have facilitated greater peer interactions and the potential for more friendship dyads emerging over the course of the trial, which might have facilitated the intervention effects, but these speculations cannot be formally tested in the current study. Lastly, it is important to acknowledge that the participants in the current study were nested within classrooms. Because the data are hierarchically structured, it may be beneficial to examine these results using multilevel modeling in future work with a

larger sample to more fully understand what components of the classroom are most influential for behavior change within the intervention.

Future Directions

The present study introduces a number of questions and aims to be addressed in future studies. Even though the observers spent months engaged in formal and informal observation and the use of observer reports has been successful in prior studies (e.g., Murray-Close & Ostrov, 2009), future attempts should be made to design a new naturalistic observational system that reliably captures bullying behavior. That is, the use of systematic observations would provide a relatively unbiased assessment of bullying behaviors. Second, greater attention is needed on identifying other individual differences that may moderate the intervention effects. For example, are the children who are the most aggressive benefiting from the program in the same way that the children who are victimized may benefit? It is also conceivable that older children (4 and 5 year olds) may have benefited more from the program than younger preschoolers (3 year olds), who might have had a more difficult time remembering the weekly social skill steps. Our study was not powered for testing these developmental differences, and future work should examine these questions. In addition, given that the focus of the program is to change the reinforcement contingencies in the peer group and classroom, the program may benefit children who primarily engage in proactive or goal-oriented aggression or bullying, but without an explicit program emphasis on emotion regulation, we may not be targeting reactive functions of aggression (see Ostrov et al., 2013) in the same way that other programs might (e.g., Coping Power, Lochman & Wells, 2004; Friend2Friend, Leff et al., 2009). Third, although the initial version of the program was replicated by an independent research group at the University of Nebraska at Omaha (Moody, Casas, & Kelly-Vance, 2012), further replication of the intervention effects by an independent research laboratory is needed to support the program as an evidence-based intervention. Fourth, future work is needed to add a teacher training component that might enhance the amount of behavioral reinforcement that occurs beyond that conducted by program staff. These efforts might also help to enhance teacher engagement, which is a possible moderator not explicitly tested in the present study but should be the focus of future research. Fifth, a parent training and home component might also enhance the efficacy of the program and should be examined in the future. Finally, the program only lasted 8 weeks, and teachers indicated that a greater dosage and an expanded program that further emphasized practice and repetition of the core social skills would have helped those children most in need of the program.

Implications for Educators and Clinicians

Young children benefit from consistency, and the messages being conveyed regarding bullying behaviors are not always consistent across contexts. The present program offers teachers a possibility—a curriculum that they could be trained to use and implement in their own classrooms to help their students understand the social world around them, as well as how each of them plays a role in the classroom community as they build it together. The program could be easily taught to teachers through training and teaching of the dynamics of the program, as well as the potential benefits, as illustrated by this study. Having teachers implement the program consistently and efficiently in their own classrooms could potentially be more effective than having outside staff do so because these teachers are with their students on a daily basis. Teachers spend significantly more time with their students than the interventionists were able to, allowing these teachers the opportunity to teach, observe, reinforce, and assess the content of the program on a more comprehensive level. The potential benefit of sending a consistent, uniform message to children through their teachers regarding friendship and social behaviors related to changes in

bullying and victimization is an empirical question that has yet to be explored within this project. However, as we look to the future, the impact of incorporating school-wide teacher training programs will be important to explore.

The present study also has implications for clinicians, especially school-based practitioners. School psychologists and school-employed mental health professionals may be able to help to shape educators' and parents' beliefs and attitudes about the importance of addressing multiple forms of aggression and bullying (Espelage & Swearer, 2003). Furthermore, clinicians can implement or support the implementation of the ECFP in preschool classrooms to help reduce negative social behaviors, such as bullying and aggression, and potentially prevent future social–emotional maladjustment for both aggressors and victims.

CONCLUSIONS

In sum, the current study showed significant decreases in bullying behavior and victimization for children participating in the ECFP. This project extends previous work (Ostrov et al., 2009) examining a similar intervention by examining changes at the individual level rather than using general classroom-wide analyses. The findings also support the psychometric properties of the PBSM instrument. Overall, these results support the use of early intervention in community classrooms to reduce aggression and bullying behavior and help children learn to cultivate friendships at an early stage in development. The ECFP gives young children the opportunity to ask questions in a safe environment, in motivating, developmentally appropriate ways, through the use of puppets, stories, and play. Future randomized studies are needed to provide additional empirically supported evidence of the efficacy of the ECFP and the proliferation of the intervention as a tool for teachers to help foster social development in early childhood.

REFERENCES

Arseneault, L., Walsh, E., Trzesniewski, K., Newcombe, R., Caspi, A., & Moffitt, T. E. (2006). Bullying victimization uniquely contributes to adjustment problems in young children: A nationally representative cohort study. *Pediatrics, 118,* 130–138. doi:10.1542/peds.2005-2388

Bradshaw, C. P., Waasdorp, T. E., & Lindstrom Johnson, S. (2015). Overlapping verbal, relational, physical, and electronic forms of bullying in adolescence: Influence of school context. *Journal of Clinical Child and Adolescent Psychology, 44,* 494–508. doi:10.1080/15374416.2014.893516

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York, NY: Academic Press.

Crick, N. R., Casas, J. F., & Mosher, M. (1997). Relational and overt aggression in preschool. *Developmental Psychology, 33,* 579–587.

Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development, 66,* 710–722.

Crick, N. R., Ostrov, J. M., Burr, J. E., Cullerton-Sen, C., Jansen-Yeh, E., & Ralston, P. (2006). A longitudinal study of relational and physical aggression in preschool. *Journal of Applied Developmental Psychology, 27,* 254–268. doi:10.1016/j.appdev.2006.02.006

Dodge, K. A., Coie, J. D., & Lynam, D. (2006). Aggression and anti-social behavior in youth. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Volume 3. Social, emotional, and personality development* (6th ed., pp. 719–788). New York, NY: Wiley.

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

Espelage, D. L., & Swearer, S. M. (2003). Research on school bullying and victimization: What have we learned and where do we go from here? *School Psychology Review, 32*(3), 365–383.

Gladden, R. M., Vivolo-Kantor, A. M., Hamburger, M. E., & Lumpkin, C. D. (2014). *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.

Godleski, S. A., Kamper, K. E., Ostrov, J. M., Hart, E. J., & Blakely-McClure, S. J. (2015). Peer victimization and peer rejection during early childhood. *Journal of Clinical Child and Adolescent Psychology, 44,* 380–392. doi:10.1080/15374416.2014.940622

Harrist, A. W., & Bradley, K. D. (2003). "You can't say you can't play": Intervening in the process of social exclusion in the kindergarten classroom. *Early Childhood Research Quarterly, 18,* 185–205.

Hollingshead, A. A. (1975). *Four-factor index of social status.* Unpublished manuscript, Yale University, New Haven, CT.

Hunter, S., Boyle, J., & Warden, D. (2007). Perceptions and correlates of peer-victimization and bullying. *British Journal of Educational Psychology, 77,* 797–810. doi:10.1348/000709906X17046

Kamper, K. E., & Ostrov, J. M. (2014). *Relational bullying and deception in early childhood.* Poster presented at the Alberti Center for Bullying Abuse Prevention's 2014 Annual Conference, Buffalo, NY.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford.

Leadbeater, B., & Hoglund, W. (2006). Changing the social context of peer victimization. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 15,* 21–26.

Leadbeater, B., Hoglund, W., & Woods, T. (2003). Changing contents? The effects of a primary prevention program on classroom levels of peer relational and physical victimization. *Journal of Community Psychology, 31,* 397–418.

Leff, S. S., Goldstein, A. B., Angelucci, J., Cardaciotto, L., & Grossman, M. (2007). Using a participatory action research model to create a school-based intervention program for relationally aggressive girls: The friend to friend program. In J. E. Zins, M. J. Elias, & C. A. Maher (Eds.), *Bullying, victimization, and peer harassment: A handbook of prevention and intervention* (p. 199–218). New York, NY: Haworth Press.

Leff, S. S., Gullan, R. L., Paskewich, B. S., Abdul-Kabir, S., Jawad, A. F., Grossman, M., . . . Power, T. J. (2009). An initial evaluation of a culturally adapted social-problem solving and relational aggression prevention program for urban African-American relationally aggressive girls. *Journal of Prevention & Intervention in the Community, 37,* 260–274. doi:10.1080/10852350903196274

Leff, S. S., Waasdorp, T. E., & Crick, N. R. (2010). A review of existing relational aggression programs: Strengths, limitations, and future directions. *School Psychology Review, 39,* 508–535.

Leff, S. S., Waasdorp, T. E., Paskewich, B., Gullan, R. L., Jawad, A. F., MacEvoy, J. P., . . . Power, T. J. (2010). The preventing relational aggression in schools everyday program: A preliminary evaluation of acceptability and impact. *School Psychology Review, 39,* 569–587.

Little, T. D., Jones, S. M., Henrich, C. C., & Hawley, P. H. (2003). Disentangling the "whys" from the "whats" of aggressive behavior. *International Journal of Behavioral Development, 27,* 122–133.

Lochman, J. E., & Wells, K. C. (2004). The coping power program for preadolescent aggressive boys and their parents: Outcome effects at the 1-year follow-up. *Journal of Consulting and Clinical Psychology, 72,* 571–578. doi:10.1037/0022-006x.72.4.571

Lovegrove, P. J., Bellmore, A. D., Green, J. G., Jens, K., & Ostrov, J. M. (2013). "My voice is not going to be silent": What can parents do about children's bullying? *Journal of School Violence, 12,* 253–267.

Low, S., & Espelage, D. (2013). Differentiating cyber bullying perpetration from non-physical bullying: Commonalities across race, individual, and family predictors. *Psychology of Violence, 3,* 39–52. doi: 10.1037/a0030308

Monks, C. P., Smith, P. K., Naylor, P., Barter, C., Ireland, J. L., & Coyne, I. (2009). Bullying in different contexts: Commonalities, differences and the role of theory. *Aggression and Violent Behavior, 14*(2), 146–156. doi:10.1016/j.avb.2009.01.004

Moody, M. N., Casas, J. F., & Kelly-Vance, L. (2012). *A revised implementation of the Early Childhood Friendship Project: Building an early childhood relational aggression intervention one puppet at a time.* Paper presented at the Fifth Research Conference on Relational Aggression, Provo, UT.

Murray-Close, D., Nelson, D. A., Ostrov, J. M., Casas, J. F., & Crick, N. R. (in press). Relational aggression: A developmental psychopathology perspective. In D. Cicchetti (Ed.), *Developmental psychopathology* (3rd ed.). New York, NY: Wiley.

Murray-Close, D., & Ostrov, J. M. (2009). A longitudinal study of forms and functions of aggressive behavior in early childhood. *Child Development, 80,* 828–842. doi:10.1111/j.1467-8624.2009.01200.x

Ostrov, J. M. (2006). Deception and subtypes of aggression in early childhood. *Journal of Experimental Child Psychology, 93,* 322–336. doi:10.1016/j.jecp.2005.10.004

Ostrov, J. M. (2010). Prospective associations between peer victimization and aggression. *Child Development, 81*(6), 1670–1677. doi:10.1111/j.1467-8624.2010.01501.x

Ostrov, J. M., & Crick, N. R. (2007). Forms and functions of aggression during early childhood: A short-term longitudinal study. *School Psychology Review, 36,* 22–43.

Ostrov, J. M., Gentile, D. A., & Mullins, A. D. (2013). Evaluating the effect of educational media exposure on aggression in early childhood. *Journal of Applied Developmental Psychology, 34,* 38–44. doi:10.1016/j.appdev.2012.09.005

Ostrov, J. M., & Kamper, K. E. (2012). *Development of relational and physical bullying in early childhood.* Paper presented at the Fifth Research Conference on Relational Aggression, Park City, UT.

Ostrov, J. M., & Kamper, K. E. (2015). Future directions for research on the development of relational and physical peer victimization. *Journal of Clinical Child and Adolescent Psychology, 44,* 509–519. doi:10.1080/15374416.2015.1012733

Ostrov, J. M., Kamper, K. E., Hart, E. J., Godleski, S. A., & Blakely-McClure, S. J. (2014). A gender-balanced approach to the study of peer victimization and aggression subtypes in early childhood. *Development and Psychopathology, 26,* 575–587. doi: 10.1017/S0954579414000248

Ostrov, J. M., & Keating, C. F. (2004). Gender differences in preschool aggression during free play and structured interactions: An observational study. *Social Development, 13,* 255–277.

Ostrov, J. M., Massetti, G. M., Stauffacher, K., Godleski, S. A., Hart, K. C., Karch, K. M., . . . Ries, E. E. (2009). An intervention for relational and physical aggression in early childhood: A preliminary study. *Early Childhood Research Quarterly, 24,* 15–28. doi:10.1016/j.ecresq.2008.08.002

Ostrov, J. M., Murray-Close, D., Godleski, S. A., & Hart, E. J. (2013). Prospective associations between forms and functions of aggression and social and affective processes during early childhood. *Journal of Experimental Child Psychology, 116,* 19–36. doi:10.1016/j.jecp.2012.12.009

Pepler, D. J. (2006). Bullying interventions: A binocular perspective. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 15*(1), 16–20.

Reid, J. M., & Webster-Stratton, C. (2001). The incredible years parent, teacher, and child intervention: Targeting multiple areas of risk for a young child with pervasive conduct problems using a flexible, manualized treatment program. *Cognitive and Behavioral Practice, 8,* 377–386.

Solberg, M., & Olweus, D. (2003). Prevalence estimation of school bullying with the Olweus Bully/Victim Questionnaire. *Aggressive Behavior, 29,* 239–268.

Sroufe, L. A. (2013). The promise of developmental psychopathology: Past and present. *Development and Psychopathology, 25,* 1215–1224. doi:10.1017/S0954579413000576

Ttofi, M. M., & Farrington, D. P. (2011). Effectiveness of school-based programs to reduce bullying: A systematic and meta-analytic review. *Journal of Experimental Criminology, 7*(1), 27–56. doi:10.1007/s11292-010-9109-1

van Schoiack-Edstrom, L., Frey, K. S., & Beland, K. (2002). Changing adolescents' attitudes about relational and physical aggression: An early evaluation of a school-based intervention. *School Psychology Review, 31,* 201–216.

Vlachou, M., Andreou, E., Botsoglou, K., & Didaskalou, E. (2011). Bully/victim problems among preschool children: A review of current research evidence. *Educational Psychology Review, 23,* 329–358. doi:10.1007/s10648-011-9153-z

Webster-Stratton, C., Reid, J. M., & Stoolmiller, M. (2008). Preventing conduct problems and improving school readiness: Evaluation of the incredible years teacher and child training programs in high-risk schools. *Journal of Clinical Child and Adolescent Psychology, 30,* 283–302. doi:10.1111/j.1469-7610.2007.01861

Date Submitted: April 20, 2015
Date Accepted: September 8, 2015
Guest Editor: Melissa Stormont ■

Jamie M. Ostrov, PhD, is an associate professor of psychology in the Clinical Psychology Program at the University at Buffalo, The State University of New York. He is the director of the Social Development Laboratory, as well as a faculty affiliate and advisory board member of the school's Alberti Center for Bullying Abuse Prevention. He is currently an associate editor of *Early Childhood Research Quarterly* and is on the editorial boards or is a consulting editor of eight other journals. He is the coeditor of a book, *The Development of Relational Aggression,* to be published by Oxford University Press. His research is currently funded by the National Science Foundation and the National Institute on Drug Abuse (NIDA) and focuses on the development of forms (i.e., relational and physical) and functions (i.e., proactive and reactive) of aggression.

Stephanie A. Godleski, PhD, is an assistant professor of psychology at the Rochester Institute of Technology. She is also a research associate at the Research Institute on Addictions (RIA) of the University at Buffalo, The State University of New York. She previously completed a 3-year National Institute of Alcohol Abuse and Alcoholism–sponsored postdoctoral fellowship at the RIA. Her research is currently funded by NIDA. Her program of research emphasizes the role of parents and family systems, as well as exposure to substances, in the prediction of aggressive behavior among children and adolescents.

Kimberly E. Kamper-DeMarco, MA, is an advanced doctoral student in the Clinical Psychology Program at the University at Buffalo, The State University of New York. She is also currently a predoctoral psychology intern at the University of Rochester Medical Center. Her research interests and dissertation focus on how aggression subtypes impact and are impacted by friendships among children.

Sarah J. Blakely-McClure is a doctoral student in the Clinical Psychology Program at the University at Buffalo, The State University of New York. Her research interests include developmental associations between relational aggression, relational victimization, and self-concept domains in children and adolescents.

Lauren Celenza, EdM, is a doctoral student in the Curriculum, Instruction, and Science of Learning Program (early childhood education concentration) at the University at Buffalo, The State University of New York. She is also a child researcher in the Play Lab at Fisher-Price. Her interests include the application of psychology and best practices for early childhood settings.