

PeaceBuilders: A Theoretically Driven, School-based Model for Early Violence Prevention

Dennis D. Embry, PhD
Daniel J. Flannery, PhD
Alexander T. Vazsonyi, PhD

Kenneth E. Powell, MD
Henry Atha, MPA

PeaceBuilders® is a schoolwide violence-prevention program for elementary schools (K-5). A coalition of the Pima County Community Services Department, University of Arizona, and Heartsprings, Inc. (a Tucson-based company) are conducting a formal evaluation. Children who grow up to commit acts of violence show cognitive, social, and imitative differences from their peers. These characteristics can be ameliorated, most successfully through interventions that begin at an early age and involve multiple segments of the child's social experiences and interactions. PeaceBuilders activities are built into the school environment and the daily interactions among students, teachers, and administrative staff, all of whom are taught a common language and provided models of positive behavior, environmental cues to signal such behavior, opportunities to rehearse positive behavior, and rewards for practicing it. Four schools, one from each of four matched pairs, were randomly assigned to begin Peace-

Builders in Year 1. The remaining four schools begin in Year 2. Outcome assessments include student self-reports, standardized teacher reports, playground observations, and school and law enforcement records. Process assessments include school observations and surveys of teacher practices and satisfaction. Surveys were completed by 2,736 children. The sample is about 55% Hispanic, 26% Anglo, 14% Native American, and 4% African American. Among children in grades 3-5, during the past week 15% had been sent to the office for disciplinary problems, 13% tried to start a fight, 27% hit someone, and 12% reported being threatened with a gun or knife. Violent behaviors and experiences are common among the studied children. A valid evaluation is underway of PeaceBuilders. Medical Subject Headings (MeSH): violence, intervention studies, primary prevention, program evaluation, child (age 6-12), aggression, education (early intervention). [Am J Prev Med 1996;12(Suppl 2):91-100]

PeaceBuilders is a schoolwide violence-prevention program for elementary schools (K-5). The program incorporates a strategy to change the school climate implemented by staff and students and is designed to promote prosocial behavior among students and adults. Children learn five simple principles: (1) praise people, (2) avoid put-downs, (3) seek wise people as advisors and friends, (4) notice and correct hurts we cause, and (5) right wrongs. Adults reinforce and model the behaviors at school, at home, and in public places.

The underlying theory is that youth violence can be reduced by initiating prevention early in childhood, increasing children's

resilience, and reinforcing positive behaviors. Further, aggressive behavior can be reduced by altering the school environment to emphasize rewards and praise for prosocial behavior. The PeaceBuilders model emerged from work on pediatric injury control,¹⁻³ development of self-help materials promoting behavior change,⁴ and tests of intervention ideas for reducing effects of childhood exposure to violence.⁵

Early PeaceBuilders trials were conducted in Tucson, Arizona, where a coalition developed the current project. Heartsprings, Inc., developed and administers PeaceBuilders, the University of Arizona Family Studies Department collects and evaluates the data, and the Pima County Community Services Department manages the overall evaluation project. The evaluation study is being conducted in 10 schools in the Tucson Unified and Sunnyside School Districts.

Theory

Children at risk for violent behavior are cognitively, socially, and imitatively different from their nonviolent peers.⁶⁻¹¹ Cognitively, such children tend to be suspicious of others, have difficulty reading nonverbal cues, and often misinterpret ambiguous events as hostile. Socially, children at risk for violence insult their peers, disrupt classroom activities, and engage in higher rates of physi-

From Heartsprings, Inc. (Embry), University of Arizona (Vazsonyi), and Pima County Community Services (Atha), Tucson, Arizona; Case Western Reserve University, Cleveland, Ohio (Flannery); and the U.S. Centers for Disease Control and Prevention, Atlanta, Georgia (Powell).

Address reprint requests to Dr. Embry, Heartsprings, Inc., P.O. Box 12158, Tucson, AZ 85732 (e-mail: dde@Heartsprings.org).

© 1996 American Journal of Preventive Medicine. *Youth Violence Prevention: Descriptions and Baseline Data from 13 Evaluation Projects* is a supplement to *American Journal of Preventive Medicine* Volume 12, Number 5.

cal and verbal aggression than socially competent children. Imitatively, such children are more easily attracted to and influenced by aggressive acts, and thus consume larger "diets" of antisocial behavioral models. At-risk children appear to be at risk for both victimization from and perpetration of violence.⁸ Early intervention and prevention can alter these differences⁷ and may produce substantial social benefits.

School is a logical setting for changing the cognitive, social, and imitative characteristics of children at risk for violence. For example, when 13 Los Angeles-area schools altered school climate and discipline practices, various measures of risk for violence decreased across the schools.¹² Research findings from criminology and sociology support the idea that these changes would reduce subsequent youth violence.^{13,14}

PeaceBuilders seeks to expand on such promising reports by linking findings from longitudinal and developmental literatures⁹ with research on the efficacy of early intervention.⁸ Specifically, PeaceBuilders attempts to change characteristics of the setting (antecedents) that trigger aggressive, hostile behavior. PeaceBuilders increases the daily frequency and salience of live and symbolic prosocial models, enhances social competence, decreases the frequency and intensity of aggressive behaviors, rewards prosocial behaviors, and provides strategies to avoid the differential or accidental reinforcement of negative behaviors and conflict.

A program is unlikely to reduce youth violence unless the effects maintain and transfer across people, places, and time.⁶ Accordingly, schoolwide implementation of PeaceBuilders by all staff ensures that a child who enters kindergarten learns how to be a PeaceBuilder and continues to improve his or her prosocial skills throughout the elementary years. PeaceBuilders is purposely woven into the school's everyday routine to make it a "way of life," not just a time- or subject-limited curriculum. A "way of life" means that the intervention will have daily antecedents (setting events), behaviors by students and adults, and rewards (consequences) for positive actions. PeaceBuilders includes (1) daily rituals related to its language and principles to foster a sense of belonging; (2) cues and symbols that which can be applied to diverse community settings; (3) specific prompts to "transfer" across places, people, behaviors, and time; and (4) new materials or strategies introduced for times and circumstances when behavior might otherwise decay. These procedures emerge from the research and theory on generalization or transfer.^{8,15,16}

The development of violent behavior exists within a broad social context of risk or protective factors such as neighborhood, community, and media.^{17,18} PeaceBuilders, therefore, includes four components:

1. *parent education* through solution-focused tools such as recipes for reducing TV watching, sibling fighting, and angry outbursts, and strategies to increase homework completion;
 2. *marketing to families* through children, most noticeably employed by fast-food restaurants, toy manufacturers, and some public health campaigns;¹⁹
 3. *collateral training* for community volunteers who are targets of PeaceBuilders techniques for the schools; and
 4. *mass media tie-ins* for the basic principles and recognition of PeaceBuilding by children and schools.
- PeaceBuilders makes the proverb "it takes a whole village to raise a child" real through common language, common tools, and common behavior roles for people close to a child's life. In

sum, PeaceBuilders focuses on individual behavior change in proximal interpersonal and social settings.²⁰

Intervention Plan

Intervention structure. PeaceBuilders uses nine broad behavior-change techniques: (1) common language for "community norms," (2) story and live models for positive behavior, (3) environmental cues to signal desired behavior, (4) role plays to increase range of responses, (5) rehearsals of positive solutions after negative events ("new way replays") and response cost as "punishment" for negative behavior, (6) group and individual rewards to strengthen positive behavior, (7) threat reduction to reduce reactivity, (8) self- and peer-monitoring for positive behavior, and (9) generalization promotion to increase maintenance of change across time, places, and people. These strategies are designed to change school climate—the everyday interactions of students, staff, and families. The idea of PeaceBuilders as "a way of life" can be illustrated by a description of a day in a well-run PeaceBuilders school, classified by behaviors of different people who work at, learn in, or visit the building.

Teachers coach PeaceBuilding in many ways throughout the day, such as by greeting a child by a cue to think about how he or she is going to be a PeaceBuilder that day. Intermediate teachers might include a PeaceBuilders theme in daily oral language lessons written on the board. During story time, teachers ask children to comment on how the characters in the story modeled PeaceBuilding. All teachers might adopt the same auditory and visual cues to signal quiet time. Every teacher in the school might send home praise notes about children's PeaceBuilding that day.

Students use PeaceBuilder language and principles daily, writing greetings in chalk on the sidewalk or reciting the PeaceBuilders Pledge at the start of the day. Later, students may join in a "PeaceCircle" in which they compliment one another for acts of helpfulness, friendship, and accomplishment. During recess, children can take turns being PeaceCoaches who praise and coach other children for sharing, good sportsmanship, or inviting others to play. During lunch, students who behaved inappropriately might write PeaceTreaties (mediation essays) at the Peace or Practice Table. Other students might be having lunch with a "wise person," a local business owner or family relative, at the PeaceBuilders Dining Club. Some at-risk intermediate children read to their younger PeacePals the latest full-page comic strip on PeaceBuilders from the local kids' newspaper published once a month across the city. After the last recess, children write praise notes for each other to put on the Peace Board.

Parents and family members might learn about PeaceBuilding from students who make a PeaceBuilders Praise Board for home and teach the adults at home how to use PeaceCards, the PeaceCircle, and Praise Notes. Parents may use the "fight-free coupons" from the PeaceBuilders story/workbook to control television viewing and sibling fighting. Parents are prompted to praise or reward their children who receive a PeaceBuilders home note. Parents might attend a family fun night where children perform on using PeaceBuilders at home. Parent volunteers may help by calling in the PeaceBuilders nominations to the local TV station or by standing at strategic places in the building to offer praise for PeaceBuilding behaviors.

The principal and assistant principal promote PeaceBuilders throughout the day by reading the PeaceBuilder nominations on

the public address system. Children who bring in a Principal's Preferral (from the same class as a discipline referral that day), call home, or write a postcard for PeaceBuilding. The principal begins staff meetings by noticing individual child, classroom, and schoolwide PeaceBuilding successes. Solutions for common challenges are discussed. The principal takes a leadership role by praising, labeling, and encouraging PeaceBuilding activities or actions throughout the school. The principal asks parents new to the school to sign the Book of Wisdom for Wise People and helps recruit parent volunteers for PeaceBuilder activities.

Support staff also coach PeaceBuilding in many ways each day. A bus driver may give a PeaceBuilders nomination to the office for the whole bus, to be read on the morning announcements, since bus rides are a major source of behavior problems. The janitor may help the children put down "PeaceFeet" in the hallway showing where and what direction to walk, thereby reducing pushing, shoving, and attention to inappropriate behavior. Counselors may help set up the intensive PeaceBuilding procedures for more seriously troubled children. Community volunteers all help to make PeaceBuilders a way of life at the school.

In sum, the PeaceBuilders way of life is summarized by five principal imperatives: (1) PeaceBuilders praise people; (2) PeaceBuilders avoid put-downs; (3) PeaceBuilders seek wise people, (4) PeaceBuilders notice hurts they have caused; and (5) PeaceBuilders right wrongs. Our previous description is an "ideal" version of PeaceBuilders, and schools tend to vary in the expression of this ideal.

Printed PeaceBuilders materials. The following materials guide PeaceBuilders participants. Figure 1 provides details of intervention tools used in PeaceBuilders.

1. "I Help Build Peace" is a story/workbook for students and their families, in which the child and the significant adults in his or her life are heroes (a self-modeling paradigm) using PeaceBuilding tools.

2. An action guide and planner for teachers explains why, how, and when the procedures work, along with the initial tools to create the basic language, common purpose in the school or classroom, and basic strategies.

3. Reproducible binders for teachers, staff, and community volunteers provide research-proven tools to change specific target behaviors of the children and the adults in the classroom, on the playground, and at home.

4. Principal's and staff guides help make the behavioral shift across all the adults in the building who interact with the children. These materials promote schoolwide, consistent procedures for de-escalation, threat reduction, and recognition and coaching of PeaceBuilding behaviors and activities. The intensive guide helps a classroom with higher-risk children master PeaceBuilding, especially through response-cost procedures for disruptive behavior, self-monitoring, peer monitoring, group rewards, and generalization procedures.

5. Parent education events and tools teach specific family-management tactics such as de-escalation, threat reduction, and praise for PeaceBuilding. Tactics are promoted through plays in which families learn the language and tools of PeaceBuilding from the children.

6. Symbolic incentives (e.g., special pencils, stickers, erasers, and T-shirts) are used as rewards for and prompts for PeaceBuilding by students and adults.

7. Mass media components offer repetition and recognition of



Posters. Classes adopt an area of the school—lunchroom, drinking fountains, library, etc. Students draw signs and posters every few weeks for that area, emphasizing general PeaceBuilding language and specific ways that children and adults can show PeaceBuilding. Adults praise students and recognize their efforts.

PowerWords and cues. Student and staff create posters and cues signal behaviors for PeaceBuilding; special language for the social skills in the lunchroom promoted (e.g., PeaceBuilders PowerWords—"Please, thank you, may I help you, excuse me, I am sorry").

PeaceBuilders nominations. Each staff member is asked to nominate at least one child per day for being a PeaceBuilder. The nominations give the name of the child and what the child did to build peace. The nominations are read over the public address system every day. The principal takes a leadership role in the nominations.

Story/workbook. Each child receives a special story/workbook in either English or Spanish. By writing the child's name in the book, the child becomes the hero (self-modeling). The book teaches specific skills and is designed to be used at both school and home. Solution-focused parenting tips are imbedded throughout the book.

PeaceCards and Secret Notes. PeaceCards prompt noticing some 80 social competencies. Children draw a card, notice the behavior in a peer later in the day as a form of modeling and peer pressure. Children draw names and write out Secret Notes on children doing PeaceBuilding; these notes help challenge cognitive distortions.

Home notes. Teachers are asked to fill out two notes per day, rotating among students. The notes are sent home and cue the parents to praise and reward the child. A more sophisticated version is used for children with special needs.

Games. A variety of games are used to help teach children PeaceBuilding. For example, a version of musical chairs called, "Are you a PeaceBuilder?" helps even resistant children role play "I am a PeaceBuilder" and have more fun and social recognition from peers.

Figure 1. Sample PeaceBuilders interventions.

specific tactics used in the school, which appear as a newsprint feature in the area children's newspaper or weekly news stories on a local television network affiliate.

Intervention training. The training for PeaceBuilders in this study had six phases:

- **A preintervention orientation.** Faculty at each study site received an hour of orientation about the intervention, study, data collection, and schedule. A videotape was shown with testimonials from teachers, students, counselors, and others. Questions were answered and benefits highlighted such as more time for teaching, reduced vandalism expenses, and community involvement.

- **Training workshop.** Staff at each study site received 3–4 hours of training on the basic PeaceBuilders model. This workshop covered the expectations for success, theory, and practice of the PeaceBuilders model and ideas for immediate action. Staff were instructed to have a planning session by grade level or school within two weeks of the event. Classroom materials were distributed at the workshop.

- **Site coaching.** During the first 8–12 weeks, each study site received at least two hours per week of coaching. Coaches provided introductory training in implementation and made follow-up visits. A log was kept of the visits and the nature of the contacts, which varied by school needs.

Table 1. Demographic characteristics of project schools (in percentages of students)

	African American	Caucasian	Hispanic	Native American	Asian	"Free lunch" ^a	ESL ^b
School 1a	14.6	62.5	18.5	1.9	2.5	58.0	8.0
School 1b	9.7	63.3	22.7	0.6	3.7	55.0	13.0
School 2a	0.2	11.5	33.6	54.6	0.3	94.0	56.0
School 2b	5.2	29.5	62.2	1.7	1.4	60.0	29.0
School 3a	0.8	4.8	91.8	2.5	0.3	94.0	68.0
School 3b	2.8	8.8	74.4	13.4	0.6	80.0	20.0
School 4a	2.8	28.0	65.9	2.1	1.3	89.0	28.0
School 4b	3.5	36.0	58.5	1.0	1.0	73.0	21.0

Data provided by school districts.

^a"Free lunch" = percentage of students eligible for federally funded lunch program.

^bESL = percentage of students whose primary language is not English.

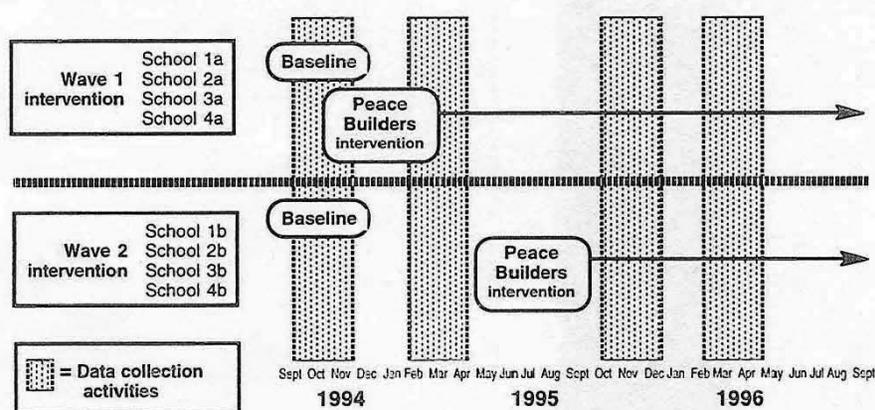


Figure 2. Project overview: design, data collection, and intervention schedule.

• *Study sessions.* Study sessions (30–60 minutes) were offered for specific issues identified by the schools, for example, use of PeaceBuilding techniques with Attention Deficit Hyperactivity Disorder, cafeteria behaviors, integration of geography studies with PeaceBuilders, and management of “difficult” classrooms.

• *Periodic forums.* Schools were offered two-hour group sessions to review and discuss successes and challenges. The forums enabled staff to see some successes of their peers and solutions for common problems.

• *Institutes.* Occasional one-day institutes were offered. Institutes focused on applying and creating new materials and interventions. Attendance was voluntary.

Evaluation Design

Study sites. The evaluation is based on a randomized nonequivalent control-group design with repeated measures. Nine schools from two local districts with high rates of juvenile arrests and histories of suspensions and expulsions were identified. The nine schools were then grouped into four matched pairs (Table 1). One grades K–2 school and one grades 3–5 school in the same geographic area were combined to form a single grades K–5 school unit of analysis. All other schools in the study were self-contained K–5 schools. Within the four matched pairs, schools were randomly assigned as intervention or wait-list control

schools. One of the original control schools dropped out of the study before baseline because of a midyear change in administration; the school was replaced with another after initial baseline collection. Both the dropout and replacement schools are composed primarily of Caucasian students. All schools characterized themselves as having high need to reduce problem behaviors.

Data collection. Periodic surveys have been conducted or are scheduled for fall 1994, spring 1995, fall 1995, and spring 1996 (Figure 2). Originally, baseline data collection was to begin in spring 1994. However, an additional unanticipated review by the Institutional Review Board delayed baseline data collection and program implementation until fall 1994. As a result, faculty at the four schools that received the intervention in 1994–1995 (Wave 1) were trained just after or concurrent with (because of staff release days) the baseline survey in 1994. Faculty at the Wave 2 schools were trained after data collection in spring 1995 or just before data collection in fall 1995. Consequently, a few PeaceBuilder activities in Wave 1 schools took place before baseline data collection, and a few activities at Wave 2 schools took place before data collection in fall 1995. We are attempting to follow as many students as possible over the two years of data collection.

Outcome data. The outcome evaluation assesses aggressive and delinquent behavior, social competence at home and school,

parent-child relationships, school discipline, and PeaceBuilding behaviors. Outcome data are gathered at all data collection points and consist of child self-report, parent reports, and teacher reports on child behavior. All surveys are prenumbered with identification codes to link student, parent, and teacher responses concerning a specific student and to track individual students over the two years of data collection. Systematic observations of playground behaviors and frequency counts of students referred to principals for discipline problems did not begin until after PeaceBuilding activities were initiated. The schools and law enforcement agencies will provide archival data (e.g., grades, discipline contacts) beginning in fall 1994.

Students' self-reports. For students in grades K-2, data were collected through individual 20-item, one-to-one interviews. Items were generated specifically for use with this project to assess prosocial, aggressive, and PeaceBuilding behaviors. Using class lists, we selected approximately 50% of students a priori to be interviewed. We selected as our goal to complete interviews for 30% of available students because the time for individual interviews (about 10 students per class) was limited to the time it took to administer the grades 3-5 surveys. Children were asked to respond to such questions as, "Do you share things with other kids?" by choosing from "yes, sometimes" and "no, not really." The 20 items were pilot-tested with same-age children; individual interviews took about 5-8 minutes to complete.

We collected data for children in grades 3-5 through classroom group surveys of 20-25 students per session. At least two research assistants were present to provide instruction and answer questions. Surveys included 100 items and took about 30-40 minutes to complete.

All students received small incentives such as stickers for completing the surveys or interviews. Only a handful of children refused to complete a survey or interview.

In addition to basic demographic items, students completed items on relationship conflict with peers and teachers adapted from the Conflict Behavior Questionnaire (CBQ);²¹ the acceptance/rejection and firm/lax control subscales of the short form of the Child Report of Parental Behavior Inventory;²²⁻²⁴ items from the delinquency and aggressive behavior subscales of the Youth Self-Report;²⁵ items assessing child report of parental monitoring originally developed by Patterson and Dishion²⁶ and modified for use with elementary school children by Flannery et al.;²⁷ and items developed specifically to assess PeaceBuilder concepts and behaviors at home and at school.

Observational data of students and staff. Observations of playground behavior were conducted one to two times each school semester on random days of the week until all grades were observed at each school. Observers were trained to rate aggressive behavior of children and positive and negative behaviors of playground supervisors. Aggressive behavior was defined as biting, hitting, kicking, etc. Positive behaviors of supervisors were defined as verbal praise, giving rewards or reinforcement for positive behavior, and physical attention (e.g., touching, patting, hugging); negative behaviors of supervisors included reprimanding, shouting, yelling, or threatening. Behaviors were coded as frequency counts during 10 one-minute intervals. Two separate raters observed and coded the same playground interactions. We calculated final frequency counts as an average of the two raters' scores.

Parents' self-reports. At each outcome data-collection period with students, we mailed home surveys for parents to complete

and return via postage-paid envelopes. Baseline surveys contained 105 items, and parents were asked to respond using pre-printed bubble sheets. Both English and Spanish versions of the surveys were mailed home. Because the initial survey return rate from parents was low, the responses from baseline were factor-analyzed and reduced to a 46-item survey used in subsequent data collection waves.

In addition to identification and demographic items, parents completed a 15-item report of child prosocial behavior at home,²⁸ the 20-item CBQ,²¹ the aggressive and delinquent behavior as well as the social and attention problems subscales from the Child Behavior Checklist,²⁹ and 12 items developed to assess the PeaceBuilders intervention generalized to the home.

Teachers' reports and ratings. Teachers received outcome data-collection packets at the time of the student survey data collection. Twice each year teachers and school staff completed the 37-item Discipline Survey for their classroom and school¹² and a 45-item questionnaire assessing the PeaceBuilders intervention in their school and classroom.³⁰ For each child in their classroom, teachers also completed the 19-item Walker-McConnell Scale of Social Competence-SF^{31,32} and the aggressive behavior subscale of the Teacher Report Form,^{33,34} which has extensive validity and reliability including long-term score stability (no intervention) ranges from .84 to .87 for aggression over one to two years. Teachers received \$20 per classroom for completing surveys for individual children. To maximize overall response rate, particularly among control schools, we instituted a schoolwide incentive. Schools that achieved a 90% return rate received \$300 and those that achieved 100% received \$500 for their general education fund. As a result, our teacher response rates in Year 2 improved from 68% to 88%. At baseline the teacher measures demonstrated high reliability (alphas at least .93).

Monitoring the implementation. All of the process data-collection instruments were developed specifically for use in this project. Ratings of teacher satisfaction with training (10 items), walk-throughs of the schools to count materials created (e.g., PeaceBuilders signs) as part of the intervention, and frequency counts of the number of postintervention "coaching" visits by project staff were counted as process data. Walk-throughs are conducted at 1, 3, 6, 9, 12, 15, and 18 months postintervention.

Baseline Data

The final number of student surveys collected at baseline was 2,736 (1,631 in Wave 1 and 1,105 in Wave 2 schools). This represents an 85% participation rate for children in grades 3-5 and a 72% participation rate for those K-2 students invited to take part in individual interviews. Teachers returned a total of 2,885 (63%) surveys for all individual students; 77% of teachers returned surveys. At baseline, parents completed 658 surveys (14%). Figure 3 presents the percentage of the total sample of students participating by grade.

The number of boys and girls in the sample is nearly equal (Figure 4). We elected not to ask young children about their race or ethnicity, and too few parents returned the surveys to provide an adequate estimate of the racial and ethnic composition of the sample. Racial and ethnic estimates are based on make-up of the entire school: 55% of the students are Hispanic, 26% are Caucasian, 4% are African American, 14% are Native American, and 1% are other or unknown (Figure 4). Hispanic children are over-represented in the baseline sample because one predominantly Caucasian school was not added to the cohort until after base-

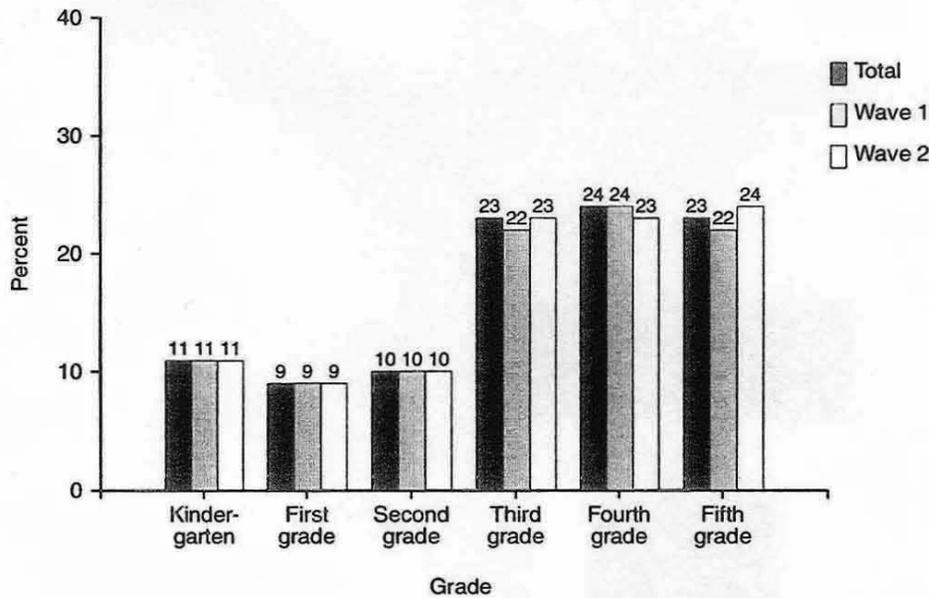
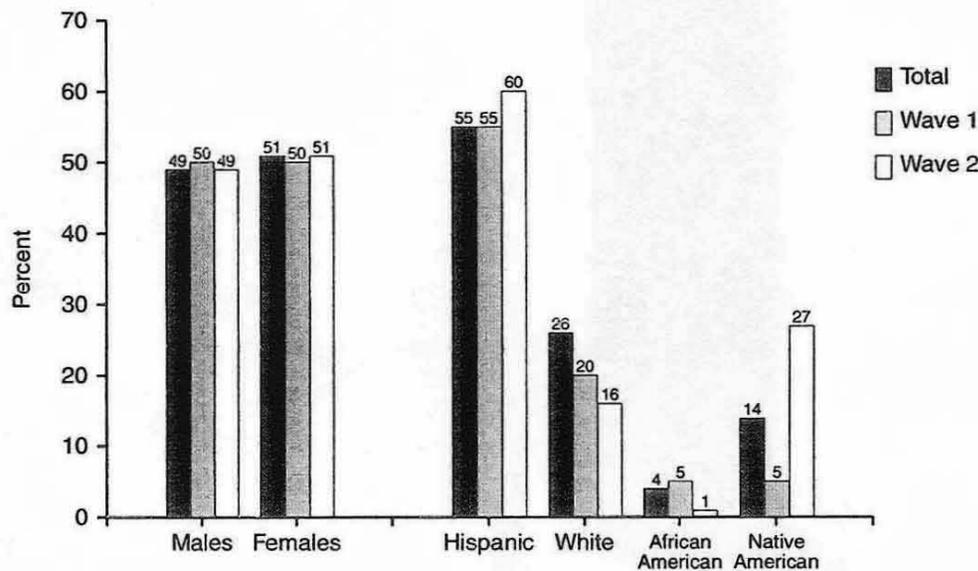


Figure 3. Percentage of students completing self-report survey by grade.



Note: Ethnicity is based on total school ethnic/racial composition. One Wave II school with predominately white students is not included because it was added to Wave II after initial baseline data collection.

Figure 4. Percentage of students completing self-report survey by gender and ethnicity.

line data collection. For the entire cohort, the racial composition of the Wave 1 and Wave 2 schools is not significantly different.

Among children in grades K-2, more boys reported getting into trouble with teachers— $\chi^2(1,837) = 19.7, P < .001$ —and getting into fights than did girls— $\chi^2(1,837) = 14.6, P < .001$. There were no other statistically significant gender differences for K-2 aggressive behaviors (Figure 5).

Across grades, “getting into trouble with teachers” and “get-

ting mad at school” increased from kindergarten to second grade (Figure 6). The percentage of children “calling kids names” decreased from kindergarten to first grade— $\chi^2(2,837) = 20.6, P < .001$ —but increased again in the second grade— $\chi^2(2,837) = 18.4, P < .001$. The percentage of children “getting into fights” was about the same from kindergarten to first grade, but increased from first to second grade (not significant).

Children in grades 3-5 also reported high rates of violence-

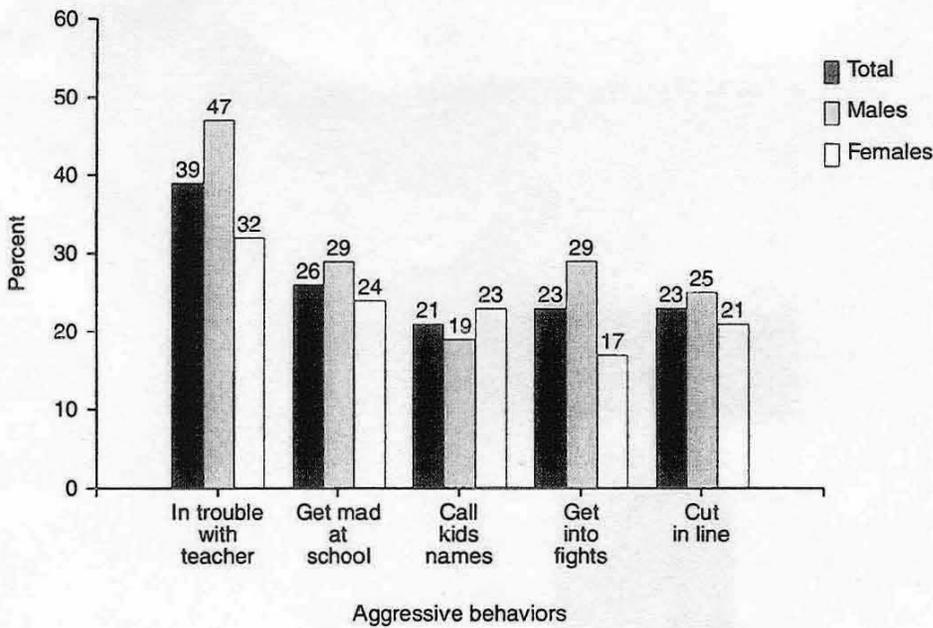


Figure 5. Prevalence of self-reported aggressive behaviors at school among children in grades K-2 by gender.

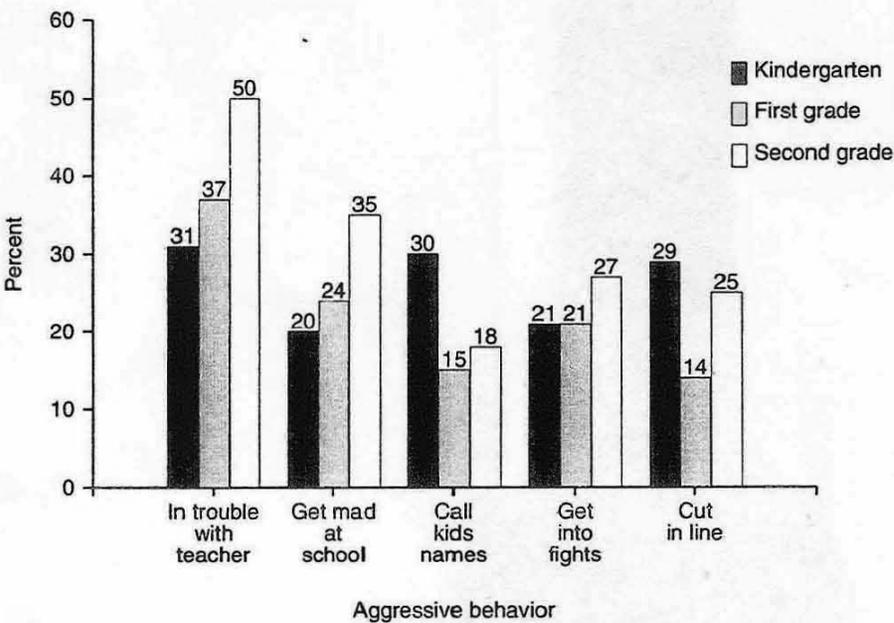


Figure 6. Prevalence of self-reported aggressive behaviors at school among children in grades K-2 by grade level.

related experiences and behaviors. Overall, 12% said that during the past week someone had tried to hurt them with a gun or knife, 42% reported seeing gang activities at school, 27% hit someone else, 13% tried to start a fight, and 15% had been sent to the principal's office for disciplinary problems. All of these activities were reported significantly more often by boys than girls ($\chi^2 P_s < .001$), with the exception of seeing gang activity (no difference; Figure 7).

When compared with children in fourth and fifth grades, children in third grade reported the highest frequency of being threatened with a weapon in the past week (17%)— $\chi^2(4,1881) = 31.5, P < .001$ —and of seeing gang activity at school in the past week (42%)— $\chi^2(4,1867) = 38.4, P < .001$ (Figure 8). Conversely, 33% of fifth graders reported trying to hit someone in the past week— $\chi^2(4,1883) = 16.2, P < .005$.

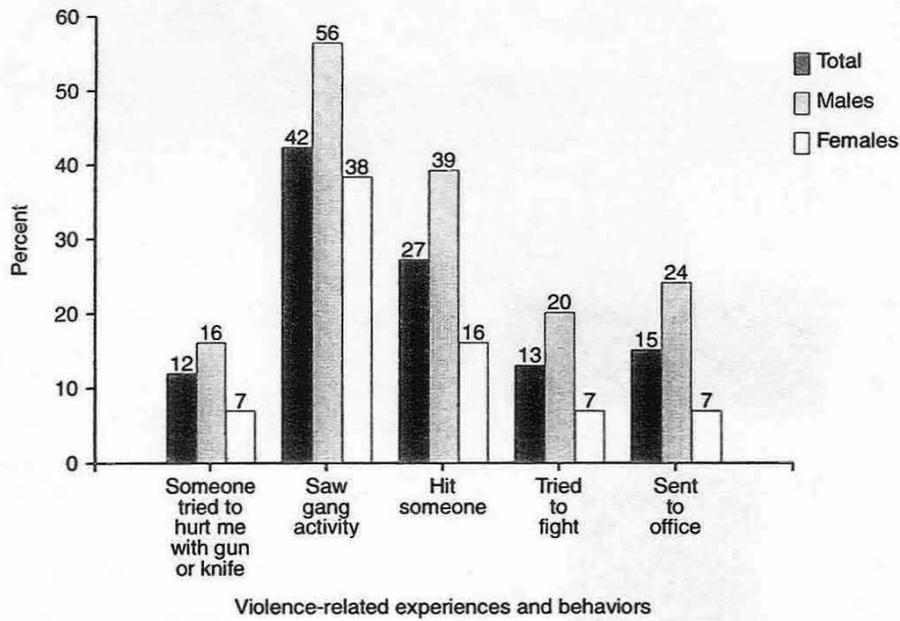


Figure 7. Prevalence of self-reported violence-related experiences and behaviors among children in grades 3-5 during past week by gender.

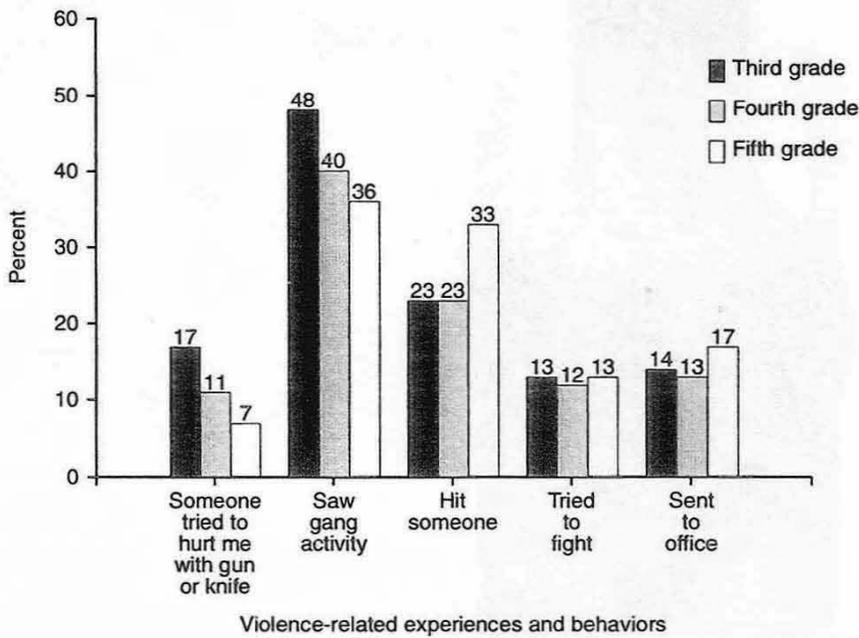


Figure 8. Prevalence of self-reported violence-related experiences and behaviors among children in grades 3-5 during past week by grade level.

LESSONS LEARNED

Building Support and Developing Relationships

- Colleagues are good sources of information about how to deal with problems.

Improving Intervention and Evaluation

- Textbooks provide little information about conducting large-scale, applied (versus descriptive) research.
- Everything costs more than planners anticipate.
- Conducting an evaluation across developmental stages (e.g., primary school, middle school) complicates assessment, because each stage requires different measurement instruments.
- Collect and graph data frequently to track program implementation and progress.
- Data from parents and families are difficult to obtain.

Underlying Principles

- If the problem is perceived by the community as large or serious, more people than can be accommodated will want to be in the study.
- Changing the behavior of one child may involve changing the behavior of 10 or more other people.
- The better the prevention program works, the more those who benefit will ask for solutions to more intense problems.

CONCLUSIONS

The path toward violence begins in childhood's early years. PeaceBuilders aims to teach elementary school children, their peers, adults at schools, and adults at home specific ways to reduce aggression and hostility and to increase skills that predict more desirable developmental outcomes. Although PeaceBuilders does have "lessons," it is characterized by teachers and school staff who use it as a way of life that reflects the educational, psychological, and criminology research on which it is based¹²⁻¹⁴ rather than as a time-limited curriculum. This way of life is designed so that it can be echoed and reinforced at home, in the community, and in the mass media.³⁵ Baseline data collected in this study confirm the fears and worries of staff and community: 12% of children in grades 3-5 reported that during the past week at school they had been threatened with a gun or knife and 42% reported seeing gang activity.

Conducting this project has taught us many lessons, some of which appear in the Lessons Learned box. Among the more important is a greater recognition of the community's need and desire to reduce violence among youths. This underscores the need for more evaluations of violence-prevention efforts so that resources, including the goodwill and energy of communities, are not wasted.

This study of PeaceBuilders among four pairs of elementary schools sets in motion an evaluation of the near-term effects on social skills and aggression and the protocols for measuring the long-term effects on juvenile violence as measured by law enforcement records. Regardless of long-term outcome, this study shows the possibility of constructing a theoretically derived prevention program, gaining wide-spread community

support for it, and undertaking a comprehensive evaluation of it. Prior studies show that PeaceBuilders-type techniques can be used quickly and with positive effect.^{8,12,36} The techniques have external validity and histories of systematic replication with diverse children and settings^{37,38} and can be implemented effectively by aides and others in a school setting without extensive use of mental health professionals.^{39,40} This study will offer a good insight into the possibility of "packaging" scientific research for useful, large-scale implementation. The implementation and progress with this study has been encouraging; the program has spread to 55 other schools in the community, largely based on word-of-mouth support from teachers and families. If careful attention is paid to refining and pruning the strategies used in PeaceBuilders, there is promise for reducing violence—a finding consistent with prior real-world research that led to the creation of the model.^{8,12}

One final lesson transcends science and warms human spirit: Children want to be PeaceBuilders—especially when we, as adults, encourage them to do so.

PeaceBuilders is a registered trademark of Heartsprings, Inc. The use of trade names is for identification only and does not constitute endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Preparation of this article was made possible in part by a cooperative agreement, U81-CCU910038-03, from the U.S. Centers for Disease Control and Prevention.

REFERENCES

1. Embry DD, Malfetti JM. The effects of storybooks on preschoolers' outdoor play. (ECI document no. 138). Lawrence, Kansas: Early Childhood Institute; 1980.
2. Embry DD, Malfetti JM. Reducing the risk of pedestrian accidents to preschoolers by parent training and symbolic modeling for children: an experimental analysis in the natural environment. Falls Church, Virginia: AAA Foundation for Traffic Safety; 1981.
3. Embry DD, Malfetti JM. The Safe-Playing Program: final report on nation-wide process field test. Falls Church, Virginia: AAA Foundation for Traffic Safety; 1982.
4. Embry LH, Embry DD. Project LIFE (Living in Family Environments): final report of USDOE Grant No. G008303002, National Institute for the Handicapped of the Dept. of Education. Lawrence, Kansas: University of Kansas, Bureau of Child Research; 1986.
5. Embry DD. The impact of Desert Storm on military families. Testimony before the U.S. Senate Veterans' Affairs Committee; Washington, DC; July 16, 1991.
6. Wilson JQ, Hernstein RJ. Crime and human nature. New York: Simon and Schuster; 1985.
7. Zigler E, Taussig C, Black K. Early childhood intervention. *Am Psychol* 1992;47:997-1006.
8. Walker HM, Colvin G, Ramsey E. Anti-social behavior in school: strategies and best practices. Pacific Grove, California: Brooks/Cole; 1995.
9. Dodge KA. Social-cognitive mechanisms in the development of conduct disorders and depression. *Ann Psychol Rev* 1993;44:559-84.

10. Ollendick TH, Dailey D, Shapiro ES. Vicarious reinforcement: expected and unexpected effects. *J Appl Behav Anal* 1983;16:485-91.
11. Huesmann LR, Eron LD, Lefkowitz MM, Walder LO. Stability of aggression over time and generations. *Devel Psychol* 1984;20:1120-34.
12. Mayer GR, Butterworth T, Nafpaktitis M, Sulzer-Azaroff B. Preventing school vandalism and improving discipline: a three-year study. *Appl Behav Anal* 1983;16:355-69.
13. Gottfredson GD. An evaluation of an organizational development approach to reducing school disorder. *Eval Rev* 1988;11:739-63.
14. Rutter M. Family, area and school influences in the genesis of conduct disorders. In: Hersov LA, Berger M, eds. *Aggression and antisocial behavior in childhood and adolescence*. Oxford: Pergamon Press; 1979:95-113.
15. Stokes TF, Baer DM. An implicit technology of generalization. *Appl Behav Anal* 1977;12:285-310.
16. Embry DD. Designing instructional materials for young children. *New Dir Exception Child* 1980;3:75-99.
17. Gottfredson M, Hirschi T. *General theory of crime*. Stanford, California: Stanford Univ. Press; 1990.
18. Hawkins JD, Von Cleve E, Catalano RF. Reducing early childhood aggression: results of a primary prevention program. *Am Acad Child Adolesc Psychiatry* 1991;30:208-17.
19. McNeal JU. *Children as consumers: insights and implications*. Lexington, Massachusetts: Lexington; 1987.
20. Tolan PH, Guerra NG. *What works in reducing adolescent violence: an empirical review of the field*. Boulder, Colorado: Center for the Study and Prevention of Violence; 1994.
21. Robin A, Foster S. *Negotiating parent-adolescent conflict*. New York: Guilford; 1989.
22. Kawash G. A factor analysis of a short form of the CRPBI: are children's perceptions of control and discipline multidimensional? *Psychology* 1988;122:57-67.
23. Schluderman S. Sociocultural change and adolescent's perceptions of parent behavior. *Devel Psychol* 1983;19:674-85.
24. Schwarz J. Assessing child-rearing behaviors: a comparison of ratings made by mother, father, child, and sibling on the CRPBI. *Child Devel* 1985;56:462-79.
25. Achenbach TM. *Manual for the Youth Self-Report and 1991 Profile*. Burlington, Vermont: Univ. of Vermont Dept. of Psychiatry; 1991.
26. Patterson GR, Dishion T. Contributions of families and peers to delinquency. *Criminology* 1985;23:63-79.
27. Flannery D, Vazsonyi A, Torquati J, Fridrich A. Ethnic and gender differences in risk for early adolescent substance use. *Youth Adoles* 1994;23:195-213.
28. Eberly M, Montemayor R, Flannery D. Variation in adolescent helpfulness toward parents in a family context. *Early Adoles* 1993;13:228-44.
29. Achenbach TM. *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington, Vermont: Univ. of Vermont Dept. of Psychiatry; 1991.
30. Dahlberg LL, Toal SB, Behrens CB. *The measurement of violence-related attitudes, beliefs, knowledge, and behavior among youth: a compendium of instruments*. Atlanta, Georgia: National Center for Injury Prevention and Control, National Centers for Disease Control and Prevention; 1996.
31. Fifield B. A concurrent validation study of the SSRS-T and the Walker-McConnell Scale of Social Competence and School Adjustment [technical report]. Eugene, Oregon: Eugene School District; 1987.
32. Hops H. Behavior correlates of positive and negative sociometric status among same-sex children. Eugene, Oregon: Oregon Research Institute; 1987.
33. Achenbach TM. *Manual for the Teacher's Report Form and 1991 Profile*. Burlington, Vermont: Univ. of Vermont Dept. of Psychiatry; 1991.
34. Tremblay RE, Masse B, Perron D, Leblanc M. Early disruptive behavior, poor school achievement, delinquent behavior, and delinquent personality: longitudinal analyses. *Consult Clin Psychol* 1992;60:64-72.
35. Hawkins JD. Controlling crime before it happens: risk-focused prevention. *Natl Inst Justice* 1995;229:10-8.
36. Kazdin AE. Developmental psychopathology: current research, issues and directions. *Am Psychol* 1989;44:180-7.
37. Harris KR. Self-monitoring of attentional behavior versus self-monitoring of productivity: effects on on-task behavior and academic response rate among learning disabled children. *Appl Behav Anal* 1986;19:417-23.
38. Fishbein JE, Wasik BH. Effect of the good behavior game on disruptive library behavior. *Appl Behav Anal* 1981;14:89-93.
39. MacPherson EM, Candee BI, Hohman R. A comparison of three methods of eliminating disruptive lunchroom behavior. *Appl Behav Anal* 1974;7:287-97.
40. Hogan S, Prater MA. The effects of peer tutoring and self-management training on on-task academic and disruptive behaviors. *Behav Disord* 1993;18:118-28.