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Reducing Levels of Elementary School Violence with Peer Mediation

The effectiveness of an existing peer mediation program in a diverse, suburban elementary school was examined. Peer mediation was available to all students (N = 825). Three-year longitudinal data showed significant reductions in the school's out-of-school suspensions after implementation of the peer mediation program. Mediation training also resulted in significant mediator knowledge gains pertaining to conflict, conflict resolution, and mediation, which was maintained at 3-month follow-up. All mediation sessions (N = 34) were successful in resolving conflict, and mediators as well as participants viewed the peer mediation program as valuable.

School violence is an issue of grave and ongoing concern in our country. Statistics from 1999 to 2000 reported 32 school-based violent deaths, which included 22 school-age children (DeVoe et al., 2003). Aggressive student interactions often permeate a school's culture and create a hostile learning environment that stifles the academic productivity and success of students (Bandura, 1973; Guetzloe, 1999; Olweus, 1995; Schellenberg, 2000). One solution to reducing aggressive student interactions and their detrimental consequences may lie in peer mediation. Peer mediation in elementary schools has been identified as a resource that promotes positive peer interactions and reduces school violence (Bell, Coleman, Anderson, Whelan, & Wilder, 2000; Debaryshe & Fryxell, 1998; Powell, Muir-McClain, & Halasyamani, 1996).

School mediation programs usually train and equip the student mediators in negotiation skills and conflict resolution techniques (Guanci, 2002). The trained student mediators then assist their peers in finding peaceful resolutions to their disputes and disagreements (Guanci). Several exploratory studies have suggested that elementary school peer mediation programs have taught students how to respond to conflict situations in more socially acceptable ways and have possibly reduced rates of school violence (Bell et al., 2000; Graham & Pulvino, 2000; Hanson, 1994; Humphries, 1999; Johnson &

Johnson, 2001; Johnson, Johnson, Dudley, & Acikgoz, 1994; Johnson, Johnson, Dudley, & Magnuson, 1995; Johnson et al., 1996; Powell et al., 1996). The results of these studies are encouraging but they need further validation because the designs used seem to lack a strong methodological rigor and often ignore the importance of measuring longitudinal outcomes.

The shortcomings in methodology include measuring only small subgroups within a school instead of schoolwide reductions in violence, evaluating peer mediation programs under optimal controlled conditions, and frequently implementing peer mediation programs with volunteer participants for the sole purpose of evaluation (Graham & Pulvino, 2000; Johnson & Johnson, 2001; Johnson et al., 1996). These studies do not capture the nature of actual practice and thereby offer questionable support for real-world peer mediation programs. In addition, the majority of the studies reviewed were not longitudinal in design but brief assessments that did not allow enough time for peer mediation programs to become established and demonstrate meaningful results.

Some studies have suggested that a timeframe of 2–5 years is needed before meaningful results can be obtained, estimating that it takes students at least 2 years and teachers at least 5 years to accept peer mediation as a legitimate dispute resolution process (Cameron & Dupuis, 1991; Dowell, 1998). The timeframe of program acceptance also can be influenced by various school-specific factors including time and effort related to publicity, administrative support, reluctance of male participants, and hesitation of teacher participation due to personal ownership of student problems (Cameron & Dupuis). Clearly, existing research on elementary peer mediation programs is missing crucial information needed by school counselors who are ethically and professionally required to implement programs proven to prevent and reduce school violence (American School Counselor Association, 2005; Borders, 2002; Carruthers, Sweeney, Kmita, & Harris, 1996;

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Conflict Resolution Education Network Standards Committee [CREnet], 1996; Hiebert, 1997; Houser, 1998; Schellenberg, 2000; U.S. Department of Education, 1998, 2000). This study, therefore, sought to examine the longitudinal impact of the Peace Pal elementary school peer mediation program in preventing and reducing levels of school violence.

PEER MEDIATION IN ELEMENTARY SCHOOLS

Peer mediation programs in elementary schools have existed for some time (Johnson & Johnson, 2001) but research studies conducted on their effectiveness are relatively few (Bell et al., 2000; Graham & Pulvino, 2000; Hanson, 1994; Humphries, 1999; Johnson & Johnson; Johnson et al., 1994; Johnson et al., 1995; Johnson et al., 1996; Powell et al., 1996). The studies conducted did not seek to assess or measure the specific benefits of peer mediation programs and therefore only report generalized positive results in areas such as referral incidents, disruptive behavior, knowledge development, and conflict resolution success. One of the first studies examining elementary school peer mediation was conducted by Hanson (1994) and investigated the referral incident records of four elementary schools before and after implementation of peer mediation programs. The results indicated a 36% reduction in schoolwide general disruptive behavior, which included fighting, verbal abuse, and arguments.

Two similar studies examined the reported rates of school suspensions before and after implementation of peer mediation programs; both studies found a reduction in the number of suspensions, one by 75% (Powell et al., 1996) and the other by 25% (Bell et al., 2000). Other studies turned from assessing school records to focus upon student mediator learning. Bell et al., using student scenarios and role plays, revealed a 100% increase in mediator knowledge that included the processes of conflict resolution and mediation. Two studies using similar pretest/posttest designs demonstrated that all students successfully learned negotiation and mediation procedures, were able to apply the knowledge, and retained the knowledge over a period of several months (Johnson et al., 1994; Johnson et al., 1995).

In addition, several of these investigations assessed if the conflict was resolved as a result of the mediation session and found successful resolutions in 71% to 100% of the sessions depending on the study (Bell et al., 2000; Hanson, 1994; Humphries, 1999; Johnson & Johnson, 2001; Johnson et al., 1996; Powell et al., 1996). Although the results of these studies indicate several positive outcomes from elementary school peer mediation programs, they do

not assess the programs' long-term potential for preventing and reducing levels of school violence.

THE PEACE PAL PROGRAM

The need to prevent and reduce violence in elementary schools motivated the creation of the Peace Pal peer mediation program. The Peace Pal program is grounded in social learning theory and was developed using the *Recommended Standards for School-Based Peer Mediation Programs* (CREnet, 1996). Social learning theory contends that children will duplicate peer responses in social situations, assimilate and accommodate peer interaction patterns, and thereby develop new cognitions for future interactions (Bandura, 1969, 1977, 1986, 2001; Bandura & Jourden, 1991; Piaget, 1970; Schellenberg, 2000). Peace Pal peer mediation training seeks to apply proven cognitive behavioral approaches rooted in social learning theory to the mediation process, hoping to help students learn to internally self-regulate their behavior when having to deal with conflict (Bandura, 1986; Bell et al., 2000; Graham & Pulvino, 2000; Humphries, 1999; Johnson et al., 1994).

The Peace Pal program is designed to facilitate the overarching goal of preventing and reducing school-wide violence. The program's goal is supported by the following objectives: (a) to enhance students' levels of understanding regarding anger and conflict, (b) to enhance students' knowledge pertaining to conflict, conflict resolution, and mediation, and (c) to resolve peer disagreements peacefully through peer mediation. The program's goal and objectives are primarily achieved through the work of the school's Peace Pal program coordinator and the classroom student mediators. In general, the Peace Pal program consists of the school coordinator who is responsible for assigning mediation sessions (i.e., Peace Talks) to student mediators (i.e., Peace Pals). The Peace Pals are provided structured training and specific tools such as the Peace Talk script to facilitate effective conflict resolution. The goal of the Peace Talks is for all parties to agree upon a resolution to the conflict and to formalize this agreement with the writing and signing of a Peace Treaty. A complete description of the Peace Pal program and the results of this study are available from the principal author upon request.

PURPOSE OF THE STUDY

The purpose of this study was to evaluate the effectiveness of the Peace Pal elementary school peer mediation program in its fifth year of operation. This study answered the following five evaluation questions, which were derived from the goal and objec-

tives of the program: Does student knowledge pertaining to conflict, conflict resolution, and mediation increase as a result of Peace Pal training? Do peer mediation sessions result in the successful resolution of student conflict? Do the number of school-wide out-of-school suspensions decrease with the implementation of the Peace Pal program? Do disputing students who participate in peer mediation sessions view the sessions as valuable? Do peer mediators perceive the Peace Pal program as valuable?

METHOD

Participants

The study was conducted in a K-5 suburban elementary school located in the Middle Atlantic region of the United States. The school's population during the intervention year of 2004-2005 was approximately 825 students with the ethnic population remaining fairly consistent from 1999 to 2005. The school's ethnic population consisted of the following groups as collected in school records: African Americans (62%), Caucasians (33%), and "Other" subpopulations (5%). The Peace Pal program was in its fifth year of operation at this school, and 13 Peace Pal student mediators had already been trained in the school and did not participate in the knowledge assessment portion of the study.

The sample for this study consisted of 15 students who were new student mediators (i.e., Peace Pals) in the given academic year. These new student mediators were given a pre- and post-training measure to assess knowledge development in the areas of conflict, conflict resolution, and mediation. The students studied were 8-11 years old, were in grades 3-5, and were selected to serve as peer mediators by peers and teachers prior to this study based on leadership qualities, good academic standing, positive attitude, and exceptional character (i.e., cooperativeness, helpfulness, respectfulness, compassion). Eleven of the students were females and 4 were males with their ethnicity representative of the general sample.

Instrumentation

A pre- and post-training questionnaire was designed by the researcher to measure peer mediator knowledge pertaining to conflict, conflict resolution, and mediation. The questionnaire also assessed mediator perceptions of program value. The 10 items were developed directly from program curricula and evaluation criteria (Hadley & Mitchell, 1995) with question formatting consisting of eight multiple choice, two forced choice yes-no, and one short answer. To assess questionnaire validity, a pilot study was conducted in 2003-2004 using a representative subsample of 16 students of mixed gender and race

in grades 3-5 who had been selected by peers and teachers to serve as peer mediators. The same questionnaire was administered on three separate occasions for pre-, post-, and retention measures. The questionnaire was examined for factual validity, content validity, and face validity by counselor educators and a focus group of school counselors (Hadley & Mitchell; Hammond, 2000).

Procedures

The 15 students selected to serve as peer mediators attended 6 hours of Peace Pal peer mediation training (i.e., two 1-hour sessions each week for 3 weeks). The training curriculum included defining anger and conflict, conflict resolution and mediation, paraphrasing, summarizing, reflecting feelings, understanding thoughts vs. feelings vs. actions, active listening techniques, using open and closed sentences, understanding confidentiality, and understanding t-formation seating (i.e., mediators sit across from each other and participants sit across from each other to form a "t" shape) during mediation. Students engaged in role play to practice the four-step mediation process and to become familiar with the Peace Treaty and Peace Talk script.

Students were administered a pre- and post-training questionnaire to assess knowledge development pertaining to conflict, conflict resolution, and mediation. The questionnaires provided baseline data (i.e., pre-training), comparative data (i.e., 1 week after the last day of training), and retention data (i.e., 3 months after the last day of training). Two items on this questionnaire also served to measure the peer mediator's perceptions of the program value. Item 9 asked, "Was the Peace Pal training helpful? How or why?" Item 10 asked, "Do you think the Peace Pal program was helpful to students in this school? How or why?" These data were measured qualitatively using a systematic comparison of patterns of responses. Additional data were collected using several resources.

Two other sources, the Peace Treaty and school records, were used to collect data for the study. Peace Treaties are forms completed by the peer mediators and the disputing parties during the mediation session to facilitate the conflict resolution process and to document its outcome. At the bottom of each Peace Treaty were four forced choice questions used to measure participant perceptions of peer mediation. For example, one question asked, "Are you completely satisfied with how the session went?" Another question asked, "Would you use peer mediation again?" Likewise, the completed Peace Treaty forms were used to measure the successful resolution of student conflict for the year. Finally, school records were accessed to measure the number of out-of-school suspensions 1 year prior

Peer mediation in elementary schools has been identified as a resource that promotes positive peer interactions and reduces school violence.

Table 1. Descriptive Data for Knowledge Development

Trials	Mean	Standard Deviation	N	% Difference
Pre	6.53	1.552	15	
Post	9.33	.617	15	43
Retention	9.27	.704	15	42

Table 2. Post-Hoc Results with Bonferroni Adjustment for Multiple Comparisons for Knowledge Development

		Mean Difference	Significance	95% Confidence Interval for Difference	
				Lower Bound	Upper Bound
Pre	Post	-2.800*	.000	-3.962	-1.638
	Retention	-2.733*	.000	-3.776	-1.690
Post	Pre	2.800*	.000	1.638	3.962
	Retention	.067	1.000	-.553	.687
Retention	Pre	2.733*	.000	1.690	3.776
	Post	-.067	1.000	-.687	.553

* $p < .05$.

and 3 years after the implementation of the Peace Pal peer mediation program. These data provided information needed to assess the schoolwide longitudinal impact of the mediation program. The collection and analysis of these data resulted in several important findings on the impact of this peer mediation program.

RESULTS

Evaluation question 1 examined the impact of Peace Pal training on knowledge development pertaining to conflict, conflict resolution, and mediation. As reported in Table 1, there was a 43% increase in knowledge from pre- to post-measure and a 42% increase from pre- to retention measure. Mauchley's test of sphericity was conducted due to the use of an analysis of variance, which assumes sphericity. Mauchley's test was significant, $W(2) = .624$, $p < .05$, indicating a violation of the assumption of sphericity; thus the Greenhouse-Geisser correction was used and found to be significant for main effect trial. Pairwise comparisons using the Bonferroni in-

dicated an increase in knowledge from pre- to post- and from pre- to retention measures. Post-hoc results for mean score differences are listed in Table 2.

Evaluation question 2 examined peer mediation session outcomes. Qualitative analysis of the Peace Treaty forms indicated that in 100% of the 34 sessions conducted by peer mediators during the year, the mediation resulted in a positive resolution of the conflict. This means that both parties and the mediators agreed that the conflict or dispute was satisfactorily resolved as a result of the mediation session.

Evaluation question 3 examined the impact of the Peace Pal program on schoolwide out-of-school suspensions. Since implementation of the Peace Pal program, longitudinal data indicated a decline in total out-of-school suspensions for each of the three post-program years (see Table 3). The suspensions data when broken down by ethnic subgroups (see Table 4) do indicate some variability in reduction rates by year. Yet, overall rates of reduction seem to be maintained over time and across all subgroups.

Evaluation questions 4 and 5 explored participant and mediator perceptions of the value of peer medi-

Table 3. Out-of-School Suspensions by Frequencies, Behavior Categories, Percentage of Difference from Pre-Program Year to Post-Program Years, and Percentages Based on Total Enrollment

Behavior Category	Pre-Program 1999-2000		Post-Program 2002-2003		Post-Program 2003-2004		Post-Program 2004-2005	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Defiance	5		7	-40	8	-60	3	40
Disruption	129		3	90	7	79	9	69
Physical conflict	25		4	84	4	84	8	68
Verbal conflict	3		1	67	1	67	4	-33
<i>Total</i>	62		15	76	20	68	24	61
Total enrollment	646	9.6	710	2.1	813	2.5	825	2.9

Table 4. Out-of-School Suspensions by Frequency, Subpopulation, Percentage of Difference from Pre-Program Year to Post-Program Years, with Total Suspensions

Subpopulation	Pre-Program 1999-2000		Post-Program 2002-2003		Post-Program 2003-2004		Post-Program 2004-2005	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
African America	55		6	89	18	67	21	62
Caucasian	7		9	-29	1	86	3	57
Other	—		—		1	—	—	
Total suspensions	62		15	76	20	68	24	61

The Peace Pal program is designed to facilitate the overarching goal of preventing and reducing schoolwide violence.

ation. Students who participated in mediation for their conflicts ($N = 68$) expressed 100% satisfaction with the mediation process. Likewise, a qualitative analysis of the Peace Pals' responses to items 9 and 10 of the pre- and post-measures revealed that 100% of the Peace Pal mediators ($N = 15$) perceived the program as helpful and valuable to self and others. Common themes included providing students in conflict with someone who could help, improving friendships, learning how to help self and others to resolve conflict, allowing students to express and understand feelings, and reducing arguments, fights, threats, and problems. A notable finding in the qualitative analysis is change associated with the mastery of language. Post-measure and retention measure responses revealed that the Peace Pals were beginning to use the language of conflict resolution and mediation. For example, students who had used the terms *argue* and *solve problems* pre-training were using the terms *conflict* and *conflict resolution* post-training.

DISCUSSION

The most significant finding in this study of an elementary school peer mediation program is the impact that this program had upon long-term levels of school violence. The presence of the Peace Pal program seemed to create a significant reduction in the number of out-of-school suspensions over the 5-year period after its implementation, which indicates a constant decrease in schoolwide violence over time. This long-term drop in violence includes both physical and verbal conflict and is consistent with the findings of previous exploratory studies (i.e., Bell et al., 2000; Johnson et al., 1994; Powell et al., 1996). However, this finding also challenges the assumptions of one study that speculated that peer mediation would only result in a reduction of less severe conflicts such as verbal conflicts and not physical conflicts (Bell et al.). Additionally, the reductions in suspensions for both subpopulations would indicate that the Peace Pal program was effective in decreasing violent behavior for both African-American and

The Peace Pal program exemplifies the developmental appropriateness and real-world effectiveness of peer mediation programs at the elementary school level.

Caucasian students. Although these findings clearly demonstrate the long-term impact of this program in reducing schoolwide violence, the program also provided additional benefits to students.

The Peace Pal program also produced student development in the areas of knowledge, application, and positive conflict resolution. The Peace Pal mediators learned and retained knowledge pertaining to conflict resolution and mediation consistent with previous exploratory studies (Bell et al., 2000; Hanson, 1994; Humphries, 1999; Johnson & Johnson, 2001; Johnson et al., 1996; Powell et al., 1996). In addition, all mediators and participants in the mediation process indicated that the Peace Pal program was effective and valuable to them and their school. These findings suggest that peer mediation programs can have a profoundly positive schoolwide effect. However, they should not be generalized without further validation studies.

Limitations

The examination of one elementary school and the limited use of inferential statistics make it difficult to generalize collective findings. Testing effects were possible due to pre- and post-measure sensitivity, and because formal statistical tests for reliability and validity were not conducted, instrumentation effects are possible. In addition, this study was not a true experimental design, therefore history, attrition, and maturation effects are possible. However, the use of inferential statistics and triangulation served to strengthen the confidence in observed changes. The qualitative analysis allowed for the exploration of program strengths, weaknesses, and value as perceived by those facilitating the program. In addition, this study has high external validity due to the real-world setting, yielding results that have a broader application than those conducted in a controlled environment. Given these limitations, the results still suggest several implications for elementary school counselors.

Implications for Elementary School Counselors

School counselors and educators are being called upon to implement research-supported strategies and programs in their schools in an effort to transform the schools in our nation (American School Counselor Association, 2005). The No Child Left Behind legislation has prompted much of this action (National Institute for Literacy, 2005). The legislation was designed to improve the quality of education and the educational setting in schools across the United States. It stresses the need for implementation of research-supported programs and the need for continuous evaluation of educational practices. This study provides elementary school counselors with both a research-supported model for violence prevention and reduction and a guide for imple-

mentation and critical evaluation.

Elementary school counselors are in an ideal position to implement peer mediation programs under the personal/social domain of the school counseling program. An understanding of the cognitive and social development of the child is paramount in providing progressive skills and concepts for optimal learning and program success. Elementary school counselors can foster this developmental process by providing such a peer mediation program. This type of program offers students the opportunity to establish positive peer relationships while learning the social or life skills necessary for successful problem solving and healthy psychosocial development. School counselors who apply this model of peer mediation in their elementary schools also may find that it is equally successful at reducing and preventing schoolwide violence. The model seems to decrease violence in schools regardless of the school's ethnic diversity; therefore, it may prove effective in a variety of settings and cultures. To determine the full impact of such peer mediation programs, more research is still necessary.

Recommendations for Future Research

Future research on peer mediation must examine if such programs can transcend various settings and cultures to reduce rates of school violence. Although this study demonstrates the long-term impact of a mediation program in one elementary school, future research must examine if the reductions extend to the wide variety of elementary school settings (e.g., urban, rural, private, parochial) and the equal diversity of their cultures and ethnicities. In addition, research should examine if the noted reduction in violence follows the elementary students as they move from elementary school to the middle school and high school years. Demonstrating such a long-term benefit would be crucial to understanding the full impact of elementary school programs. Research examining and identifying other gains in addition to violence reduction also could prove beneficial.

Future peer mediation program evaluations might consider expanding the study to include school personnel and parent perceptions of the program's strengths, weaknesses, and suggestions for improvement. It also might be beneficial to examine the frequency of student participation in mediation sessions, gender and ethnicity differences with regard to the nature of conflict and success of mediation, and the effects of mediation training on mediator behavior outside of the school setting. Taping training sessions would be useful for study replication and curriculum improvement.

Conclusion

The findings of this study indicate that the Peace Pal

program is effectively meeting its intended goal and corresponding objectives to reduce schoolwide violence, to resolve conflicts, to teach valuable and lasting conflict resolution and mediation knowledge, and to be perceived as valuable by participants and mediators. The Peace Pal program exemplifies the developmental appropriateness and real-world effectiveness of peer mediation programs at the elementary school level. Reductions in suspensions and positive participant perceptions of mediation sessions indicate that the Peace Pal program is permeating and changing the students and the very culture of this school. ■

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