“Creating a Peaceful School Learning Environment: A Controlled Study of an Elementary School Intervention to Reduce Violence”

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A detailed report on the instruments and study results is available from the senior author on written request.
Abstract

Objective: To compare the impact of a manualized anti-violence program on the school learning climate in two elementary schools over a four-year period.

Method: Two schools matched for demographic characteristics were compared. The experimental school was given an intervention based on zero tolerance for bullying and the control school, a regular psychiatric consultant. Disciplinary and academic achievement data were collected in both schools.

Results: There were significant reductions in discipline referrals and an increase in standardized academic achievement scores in the experimental school.

Conclusion: A nonpathologizing low-cost anti-violence intervention, which does not interfere with the educational process may improve an elementary school learning environment.
Introduction

There is an array of school violence prevention programs, but few have been evaluated. Exceptions include a randomized study validating the effect of the Second Step Violence Prevention program curriculum, with elementary school children (1) where persistent decreases in physical aggression was observed and Olweus’ naturalistic study of 42 schools in Norway (2) where a decrease in violence due to pathological bullying, primarily in grades 4 through 7 was reported. Olweus’ program has been adapted for North America, so far with limited success (3).

In this article, we report a pilot study of a social systems/psychodynamic anti-violence intervention in an elementary school focused on dealing with the complex dialectical relationships between victims of violent attack, their victimizers (the bullies) and the bystanding (observing) audience. The essence of this approach is that victims, victimizers, and bystanders are targeted simultaneously, without individually pathologizing anybody. All children participate, with the healthier children assisting the more disturbed children thus potentially avoiding the possible stigmatization and cost of medical labeling and referral. In a previous publication, we postulated that “Schools can be stages for dramas involving the interplay of the villains (bullies) and the antagonists (victims) sustained by the audience of bystanders.” (4) Teachers and other school personnel, (e.g. security staff, lunchroom aides, and even school secretaries) can assume any one of the roles in the triad of victim, bully, bystander, and thus must also be closely involved in the program.

The program consisted of four components: 1) Zero tolerance for behavioral disturbances such as bullying, victimization, and bystanding; 2) A discipline plan for modeling appropriate behavior; 3) A physical education plan designed to teach self regulation skills; 4) A mentoring program for adults and
children to assist children in avoiding one of the three above roles. Component one worked by increasing cognitive skills, awareness of roles, and changing language usage. Component two considered any behavioral disturbance as an interaction of all three roles in the triangle so that discipline focused on this process rather than pathologizing the bully. A time for reflection on the process was set aside each day. Component three taught self-regulation skills in physical education classes via martial arts, role-playing, and story reading with attention to anger management and encouraging adoption of one or more of these three roles during conflict. Component four emphasized adult and peer mentoring efforts focused on playground, lunchtime, and school corridor conflicts.

**Method**

Both the inner city elementary schools in this study were concerned about high levels of disciplinary problems and serious fighting, necessitating occasional police intervention. The experimental and the control schools did not differ significantly on any demographic variable, each school being located in a lower socioeconomic part of town, with new principals, similar class sizes, ethnic breakdown, family structure, percent of students on general assistance and percent in special education programs. Written informed consent for participation in the program was obtained from the parents of all students in the school after the procedure had been fully explained. 95% of the student population received permission to participate. The intervention was initiated in the experimental school with teacher in-service training beginning in October 1994. This was fully implemented over the next year, and actively supported over the two further academic years. In the 1997-98 year the program was running independently with minimal support from the research team. The personnel for both schools volunteered their time, and approximately $1,500 was spent in each school for materials. Support for data entry, analysis, and write-
up was provided by a grant from the City of Topeka and The Menninger Clinic. Both schools received consultation from senior psychiatric consultants and no additional mental health consultation was provided to either school throughout the intervention. The control schools consultation focused on traditional medical assessment and referral; the experimental schools consultant supervised the new program.

**Measures**

Academic achievement was assessed using the Metropolitan Achievement Test (MAT) (5), a comprehensive nationally standardized battery of tests designed to measure reading, written language, science, social studies, research and thinking skills, whose validity and reliability is already established.

Each of 27 serious disciplinary infractions and suspensions were reported by the principal to the school district, on official discipline referral forms, following referral by the class teacher. There was good agreement between teachers on measures of seriousness of disciplinary infractions (intraclass correlations .83-.94).

**Results**

**Discipline Data**

There was a dramatic reduction in disciplinary referrals in the experimental school associated with the introduction of the program: 74 (94/5), 34 (95/6), 36 (96/7) for physical aggressiveness and 162 (94/5), 97 (95/6), 93 (96/7) for other infractions. The control group showed little change in the rate of reported infractions: 63 (94/5), 63 (95/6), 62 (96/7) for aggressive infractions and 160 (94/5), 166 (95/6), and 130 (96/7) for non-aggressive infractions.
Suspension rates were calculated as number of out-of-school suspensions per student x 100. Differences between schools were calculated using the Fisher Exact Test and were not statistically significantly different from each other for any year 1991-1994. Suspension rates for the experimental school were significantly lower for 1995/6 (p<.02) (about 9%), 1996/7 (p<.05) (about 6%), and 1997/8 (p<.004) (about 4%). Suspension rates for the control school did not vary significantly, ranging between 14% and 19%.

**Academic Achievement**

MAT tests are given only to 3rd graders (1995/96) and then again when these students reach the 5th grade (1997/98). The data on academic achievement, reported in the table, were analyzed in two ways. First, the average performance of 3rd graders in the experimental and control schools was examined for each academic year from 1995 through 1998. On the MAT composite scores, the ANOVA yielded a significant year-by-school interaction, confirming a significant improvement in the performance of the experimental school (from the 40th percentile to the 58th percentile) whereas the control school did not change over the same time period. Data from the two key sub-tests of the MAT (reading and mathematics) confirmed these findings.

Second, in order to explore whether individual students improved their performance over the time period, a MANOVA was performed comparing the percentile scores of the same cohort in the 3rd and 5th grades. The analysis yielded significant school-by-time interactions for the composite score and for the
reading score, but not for the mathematics scores. These analyses indicate that not only did the school’s overall performance improve over the period of the program, but individual student’s performance improved significantly more in the experimental school than in the comparison school.

**Discussion**

There was significant improvement in academic achievement and reduction in out of school suspensions and other serious infractions associated with introducing the experimental but not the control program. Reports from school teachers suggested that many previously passive and withdrawn victimized children often became more verbal and outspoken as the program progressed.

Teachers also reported that children shift to a less anxiety provoking, more relational mode of functioning, become more self-reflective (6) and less reactive with response options that do not include bullying, coercion or anxious depressed retreat. The stability of the intervention is suggested by the continued progress in the experimental school in the final year of the study when little support was given by the research team (7).

This study has several limitations: (1) Allocation of experimental and control status was not random. Some regression to the mean would be expected in view of the high initial number of suspensions in the experimental school, however observed improvement went considerably beyond baseline levels. (2) The program had multiple components and at this stage, we do not know if all are essential. (3) To establish the program as effective it needs to be implemented in several randomly selected schools simultaneously. This step commenced in 1999-2000 in a randomized controlled study of nine elementary schools in Topeka, Kansas.
References


Table: Mean percentile Metropolitan Achievement Test (MAT) scores (SD) of 3rd graders for three consecutive academic years in Experimental and Control schools and in 1995/6 and 1997/8 for children in the 3rd grade as baseline.

<table>
<thead>
<tr>
<th>Year</th>
<th>Composite Experimental</th>
<th>Composite Control</th>
<th>Reading Experimental</th>
<th>Reading Control</th>
<th>Mathematics Experimental</th>
<th>Mathematics Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995/6</td>
<td>40.4 (20.6)</td>
<td>42.4 (21.8)</td>
<td>38.15 (21.3)</td>
<td>45.5 (24.9)</td>
<td>45.1 (21.2)</td>
<td>50.5 (26.4)</td>
</tr>
<tr>
<td>1996/7</td>
<td>50.0 (23.6)</td>
<td>36.6 (28.2)</td>
<td>41.7 (23.4)</td>
<td>37.7 (27.7)</td>
<td>62.1 (23.9)</td>
<td>33.9 (25.6)</td>
</tr>
<tr>
<td>1997/8</td>
<td>58.3 (22.4)</td>
<td>39.2 (20.5)</td>
<td>55.7 (24.9)</td>
<td>40.7 (23.9)</td>
<td>60.7 (24.9)</td>
<td>41.7 (25.7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>3rd grade 1995/96</th>
<th>5th grade 1997/98</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995/6</td>
<td>(N_e=48, N_c=28)</td>
<td>(N_e=46, N_c=64)</td>
</tr>
<tr>
<td></td>
<td>43.0 (19.0)</td>
<td>55.1 (26.4)</td>
</tr>
<tr>
<td>1996/7</td>
<td>(N_e=27, N_c=37)</td>
<td>(N_e=46, N_c=64)</td>
</tr>
<tr>
<td></td>
<td>45.9 (24.8)</td>
<td>52.9 (28.2)</td>
</tr>
<tr>
<td>1997/8</td>
<td>(N_e=26, N_c=26)</td>
<td>(N_e=46, N_c=64)</td>
</tr>
<tr>
<td></td>
<td>41.5 (26.5)</td>
<td>40.0 (30.0)</td>
</tr>
</tbody>
</table>

- Ne – no. of subjects in experimental school
- Nc – no. of subjects in control school

- year by school interaction (ANOVA): F=3.57, d.f.=2,176, p<.03
- year by school interaction (ANOVA): F=3.01, d.f.=2,186, p<.05
- year by school interaction (ANOVA): F=8.501, d.f.=2,186, p<.0001
- year by school interaction (repeated measures MANOVA): Wilks' Lambda=.936, F=7.36, d.f.=1,108, p<.008
- year by school interaction (repeated measures MANOVA): Wilks' Lambda=.940, F=6.9, d.f.=1,108, p<.01
- year by school interaction (repeated measures MANOVA): Wilks' Lambda=.993, F=<1, d.f.=1,108, N.S.