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An Evidence-Based Violence Prevention Curriculum for Elementary School Children

Grossman, D.C., Neckerman, H.J., Koepsell, T.D., Liu, P., Asher, K.N., Beland, K., Frey, K., and Rivara, F.P. (1997). Effectiveness of a violence prevention curriculum among children in elementary school: A randomized controlled trial. *Journal of the American Medical Association*, 277(20), 1605-1611.

The need for school counselors to engage in activities that benefit all students is a critical component of the ASCA National Model. Using classroom-based interventions that are driven by standardized curricular materials is an effective and efficient method of providing school counseling interventions to all students. However, very few of the available curricula have been formally evaluated to assess the degree to which students benefit from participation in the program. Grossman et al (1997) conducted an evaluation of *Second Step: A Violence Prevention Curriculum* to assess the effect of the curriculum on measures of aggressive and prosocial behaviors. The evaluation design is strong, using a randomized controlled trial design for the selection of students, multiple reliable and valid measures to assess student outcomes, and regression procedures to analyze the data.

Method

A total of 790 students in 2nd and 3rd grade from 12 urban and suburban schools in the state of Washington participated in the evaluation study. Each participating school was initially paired with another school from the same district with similar rates of participation in the free or reduced lunch program, and a similar percentage of minority students. One school from each pair was then randomly assigned as an experimental or control group school. A total of 49 classrooms participated in the study.

The *Second Step* curriculum used in this study contained 30 lessons (each lasting about 35 minutes) given once or twice per week for 16 to 20 weeks. Teachers from the intervention schools participated in a 2-day training before implementing the lessons in their classrooms. The lessons were arranged thematically in three units. In the first unit, empathy training, students learned to identify their own feelings, the feelings of others, and perspective taking. The second unit contained lessons on impulse control, where students learned problem-solving and related behavioral skills. The third unit discussed anger management, where students learned a coping strategy and behavioral skills for dealing with “tense situations.” Role playing activities, observing appropriate models (the teacher), and practicing these skills while receiving feedback and reinforcement were critical components of the lessons.

Outcome data were collected from multiple sources over time. The outcome measures employed tapped three general sources to assess the effectiveness of the intervention – teacher ratings, parent ratings, and direct observation. Teacher ratings were obtained using the School Social Behavior Scales (SSBS) and the Achenbach Teacher Report form (TRF). These instruments were used to solicit teacher feedback regarding each child’s antisocial, aggressive, and delinquent behaviors. Parent ratings were obtained using the Achenbach Child Behavior Checklist (CBCL) and the Parent-Child Rating Scale (P-CRS). The CBCL used the same scales as the TRF (delinquency and aggression). The P-CRS assesses both positive and negative behaviors, while the CBCL, TRF, and SSBS focus on the presence or absence of negative behaviors. The final outcome measure was direct observation of students in their classrooms, on the playground, and in the cafeteria. These trained observers were not aware of whether or not the school they were observing was an intervention or comparison group school. The observers utilized the

Social Interaction Observation System to collect data regarding students' social interactions with each other and the teacher. To collect the data, observers monitored each student in 5 minute intervals over several days to obtain at least 45 minutes of observation data for each student. Data from each of these outcome measures were collected at three points in time from both the comparison and intervention group schools: before the curriculum started (T_0), two weeks after the curriculum ended (T_1), and 6 months after the curriculum ended (T_2).

Findings

The primary hypothesis Grossman et al (1997) were testing was that negative/aggressive behaviors would decrease and neutral and prosocial behaviors would increase more in the intervention group than in the control group. To test this hypothesis, the General Estimating Equation (GEE) regression method was employed to adjust for the individual level covariates (teacher report of behavioral problems, grade level, sex, and the academic subscale of the SSBS) while also accounting for the matching of intervention and control group schools.

Analyses of the parent and teacher reported data did not yield any statistically significant differences between intervention and control groups at pretest(T_0), posttest (T_1), or six months after the intervention (T_2), but differences were found in the data collected by trained observers. In the classroom setting, physical negative and overall negative behaviors decreased from pretest to posttest for the intervention group, but increased for the comparison group. Both of these differences were "borderline significant" ($p > .05$ but $< .10$). In the playground and cafeteria settings, physical negative behaviors decreased from pretest to posttest for the intervention group but increased for the comparison group, differences that were statistically significant ($p < .05$). Prosocial behaviors observed in the playground/cafeteria settings also increased significantly more for the intervention group than the control group; the rate of observed prosocial behavior remained about the same for the comparison group, while the rate of observed prosocial behaviors increased for the intervention group.

At six months post instruction (T_2), physical aggression observed in the classroom was significantly lower in the intervention group than in the comparison group. This was due to further declines from T_1 to T_2 in negative behaviors. A summary analysis was conducted on the data collected by the trained observers to examine changes from baseline to the mean of changes from T_1 and T_2 to assess the effectiveness of the *Second Step* curriculum across the entire study period. These analyses indicated a borderline significant difference between the intervention and comparison groups in physical negative behaviors and a borderline significant increase in neutral/prosocial behaviors in the playground/cafeteria settings, and a significant decrease in physical negative behavior across all settings.

Implications

The results of this study indicate that the *Second Step* violence prevention curriculum does have measurable effects on student behaviors. Students who participated in this violence prevention curriculum evidenced more prosocial behaviors and fewer negative behaviors than similar students in the comparison group, particularly in the playground and cafeteria observation settings. It is interesting that no statistically significant findings were observed in the parent or teacher report data; significant findings only emerged from the data collected by the trained observers. Without the use of naturalistic observation by trained observers blind to the experiment, the positive effects of the curriculum on student behaviors over the six months of the study would not have been detected.

Critical Perspective

While this study provides an excellent model for performing evaluations of the effectiveness of school counseling curricula, the level of support required to enact this evaluation process makes practical application of the study design and data collection methods difficult. While the survey format used to collect data from parents and teachers is relatively straightforward, the use of trained observers to collect data from the classroom, playground, and cafeteria settings is an expensive, time consuming task that is simply not viable given current levels of funding for school counseling program evaluation initiatives. The authors of this study received a grant for \$900,000 from the National Center for Injury Control and Prevention of the Centers for Disease Control and Prevention to conduct this study.

Issues of funding aside, there are several key elements in this study that can be employed to conduct effective evaluations of school counseling curricula. Random assignment of schools matched on demographic variables to experimental and control conditions is critical to enhancing the reliability and validity of the findings. The use of multiple measures and data sources permits “triangulation” of the core constructs of the evaluation – for example, parents and teachers completed multiple surveys assessing student behaviors, while the trained observers collected data from multiple settings. The measures were reliable and valid, with known psychometric properties. Treatment fidelity was also ensured during this evaluation; all teachers who implemented the curriculum participated in a two day training session before starting the lessons, implemented the curriculum in a relatively restricted time frame (16 to 20 weeks), and were observed and rated by the evaluators to assess the quality of implementation. The design of the study employs experimental and control groups exposed to assessments over time. This combination of “pre-post testing” along with intervention and comparison groups is a powerful combination that, when combined with random assignment, permits the isolation of the effectiveness of the curriculum while accounting for the extraneous effects of other many variables.

Evaluating the effectiveness of a standardized curriculum intervention such as *Second Step* using a solid research design, reliable and valid measures, and a relatively large number of students allows us to define evidence-based practices for use by school counselors. While the costs associated with conducting this type of an evaluation are high, so too are the costs of not defining and utilizing evidence-based practices in the field of school counseling. To provide school counselors with the curricular resources to engage in comprehensive school counseling activities that affect all students, funding for engaging in rigorous evaluations of the curricula available to school counselors needs to be at much higher levels than are currently available.

School counselors can improve their practice by implementing materials which have been well-evaluated and shown to have an impact on student outcomes. Faced with the myriad of curriculum options that exist, school counselors need to make informed decisions about what constitutes best practices in our field, in order to most effectively meet the needs of our students and their families.

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