

# **NIH State- of- the- Science Conference on Preventing Violence and Related Health-Risking Social Behaviors in Adolescents**

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## **Good Behavior Game**

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Over the past three decades, evidence from developmental epidemiological studies has consistently identified aggressive, disruptive behavior in the classroom and school, at least as early as first grade, as a risk factor for later aggressive, violent, and criminal behavior, substance abuse, co-morbid mental disorders, and high risk behaviors during adolescence and adulthood (Farrington, 1995; Hawkins, Catalano, & Miller, 1992; Kellam, Brown, Rubin, & Ensminger, 1983; Reid & Eddy, 1997; Ensminger, Kellam, & Rubin, 1983; Ensminger & Slusarcick, 1992; Robins, 1978; Schwartzman, Ledingham, & Serbin, 1985; Shedler & Block, 1991).

These antecedent behaviors are strongly related to a set of other risk factors that together increase the risk of the later problem outcomes noted above. Poor academic achievement, ineffective parenting around discipline and homework; classroom environments with high levels of aggressive, disruptive behavior; associating with antisocial classmates and peers, poverty at the family level and at the school and community levels—all have been found to increase the risk of early aggressive, disruptive behavior and increase the risk of poor outcomes in adolescence and adulthood (Ary et al., 1999; Dishion, Capaldi, Yoerger, 1999; Kellam, Ling, Merisca, Brown, & Jalongo, 1998).

The prevention research strategy that has emerged from this research has been to attempt to reduce the early risk factor and determine if the risk of the long-term problem outcome has been improved (Kellam & Rebok, 1992; Kellam, Koretz, and Moscicki, 1999). In Baltimore three generations of developmental epidemiologically based, randomized field trials have been done focused on testing a method for classroom behavior management administered by teachers, the Good Behavior Game

(GBG). It was aimed at socializing children into the role of student and decreasing aggressive, disruptive behavior in the first and second grade classrooms. In the first generation of trials we trained teachers to administer the GBG classroom-wide over first and second grades and then followed children in GBG classrooms and standard program classrooms over the course of elementary and into middle school, and then into early adulthood. The GBG was tested alone in the first generation in 40 first grade classrooms in 18 schools. In the second generation, in 27 classrooms in 9 schools, we combined GBG with a curriculum and instruction intervention, since aggressive, disruptive behaviors are highly correlated with poor academic achievement. Currently in the third generation (24 classrooms in 12 schools), GBG is one of three integrated components, each having been tested separately in prior trials, the other components being curriculum and instruction and parent/classroom partnerships around homework and behavior (Dolan et al, 1993; Kellam et al, 1994; Ialongo et al, 1999; Ialongo et al, 2001; Reid, Eddy, Fetrow, and Stoolmiller, 1999).

The designs for these three generations of trials have involved the randomization of schools within matched sets in the first generation; and in all three generations, children and teachers were randomly assigned to classrooms within schools, and classrooms were randomly assigned to intervention conditions. These designs have required a very strong partnership with the Baltimore City Public School System, working under their aegis, and with the support of the Baltimore Teachers Union, and our Community and Institutional Board involving leaders of community organizations and groups (Kellam, 2000). Informed written consent was obtained from about 98% of parents in each of the generations of trials.

The GBG is a method of classroom behavior management directed at the classroom context, and administered by the teacher. It is aimed at socializing children into the role of student, and reducing aggressive, disruptive behavior. The GBG was selected on the basis of prior published replications (Barrish, Saunders, & Wolfe, 1969; Fishbein & Wasik, 1981; Huber, 1979; Medland & Stacknik, 1972). In Baltimore the first grade classroom is divided into three teams, heterogeneous for behavior with equal numbers of boys and girls. Classroom student rules are posted. The teacher announces when the game is played, and at first it is played precisely ten minutes, three times a week. Checks are marked next to the team on a large poster in the front of the room when a child breaks a posted student rule while the game is played. Teachers are trained not to interact punitively during the game, but merely to place a mark on the chart when a disturbing behavior occurs. At the end of the week teams are rewarded for having few check marks that week. At first rewards are concrete, and then become more abstract over the course of the year. The time played each week is gradually expanded from three times a week to the whole day. GBG is “group contingent” and teaches students to influence each other and support each other becoming students. The strategy makes each child’s behavior a matter of concern to all children in that team because the team reward depends on each child’s behavior.

These trials in Baltimore indicate that school-based universal interventions (i.e., those addressing all children, not merely those at higher risk) and the GBG in particular, can have short and long-term beneficial effects on aggressive, disruptive behavior and its developmental outcomes. The GBG resulted in short and long term reductions in aggressive, disruptive behavior (Dolan et al., 1993; Jalongo et al., 1999); off-task

behavior (Brown, 1993a, 1993b), and depressive symptoms (Kellam, Rebok, Mayer, Ialongo, & Kalodner, 1994; Kellam, Rebok, Ialongo, & Mayer, 1994; Kellam, Ling et al., 1998). Reductions in the initiation of tobacco use have also been shown as a result of GBG in the Baltimore trials (Kellam & Anthony, 1998; Storr, Ialongo, Kellam, & Anthony, 2002). By early adulthood as yet unpublished effects of the GBG have been found among the most aggressive first graders (about 15%). Young adults who had been in GBG first grade classrooms were compared to those formerly in standard program first grade classrooms. Reductions in the prevalence of antisocial personality disorder were found; as well as reductions in illicit drug use. Worth noting were reductions in the use of school-based services. There is also evidence of former GBG children attaining more years of schooling.

Higher-fidelity implementation of the interventions led to higher impact (Ialongo et al., 1999; Ialongo, Poduska, Werthamer, & Kellam, 2001). Over all three generations of trials of these classroom-based universal interventions, we found the greatest impact on those children at highest levels of early aggressive, disruptive behavior (Kellam et al., 1994; Brown & Liao, 1999; Curran & Muthèn, 1999; Muthèn & Curran, 1997; Stoolmiller, Eddy, & Reid, 2000). The impact of GBG was limited to boys; no impact on later aggressive behavior was found for girls across all three generations of trials. The level of fidelity of implementing GBG had major effect on GBG impact. The training of teachers in GBG during the effectiveness trial in the first generation had no lasting endurance in their practice in the next year, when we tested the sustainability of impact by withdrawing the continuing mentoring with a second cohort of first graders. Sustaining programs that have been found to be effective appears to require a multi-

level ownership with institutionalizing the continuing mentoring of teachers and on-going systems for monitoring teacher practices and child outcomes. We are testing such a model now in the third generation of trials in Baltimore.

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