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# Reducing Family Violence: Use of an Interactive Parenting Skills CD-ROM

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## Abstract

Currently, research regarding the effects of family conflict and violence on youth is increasing. This research has shown repeatedly the negative consequences for children who experience and/or witness family violence or conflict. Subsequently, a growing number of treatments for abusive or violent parents have been developed. The goal of this research is to investigate the usefulness of the Parenting Adolescents Wisely interactive CD-ROM program as a means of reducing family conflict and aggressive parenting in families of school-aged children. Parents and children from both public and private schools participated in the PAW program. Several significant reductions in parental attitudes towards aggression and parental conflict were observed following participation. We conclude that the PAW program is an effective, brief, and non-threatening intervention for families experiencing mild to moderate levels of conflict.

# Reducing Family Violence: Use of an Interactive Parenting Skills CD-ROM

In many senses, we as a culture are experiencing a familial disintegration reaching epidemic proportions. Estimates of divorce rates in the United States have risen dramatically over the past half-decade. Currently, it is estimated that approximately 50% of today's first marriages and more than 60% of today's second marriages will end in divorce (Amato, 2000; Kot & Shoemaker, 1999). These statistics become especially troubling when one considers the repeatedly demonstrated negative effects that parental separation has on children. For example, after reviewing the research literature regarding divorce and children, Kelly (1988) concluded that the impact of divorce related stress has been shown across numerous methodologically sound studies to be related to an increased occurrence of social, academic, and psychological adjustment problems in children. However, more recent research has shown that marital conflict may be an even better predictor of child maladjustment than either divorce itself or post-divorce conflict between parents (Kelly, 2000). Subsequently, a rapidly growing body of literature has been generated regarding the effects of marital conflict on child and adolescent observers.

As research regarding the effects of marital conflict on child functioning has developed, time and again research has demonstrated that marital conflict is associated with a broad range of child behavioral and emotional problems (Cummings & Davies, 1994; Grych & Fincham, 1990; Unger, Brown, Tressell, & McLeod, 2000). For example, marital conflict is associated with problematic child attachment to parents (Owen & Cox, 1997), childhood aggression and noncompliance (Cummings & Davies, 1994, Lindahl & Malik, 1999), as well as the increased likelihood of both parent-child conflict (Erel & Burman, 1995; Margolin, John, Ghosh, & Gordis, 1996) and sibling conflict (Brody,

Litvin, Alberti, & Hoffman, 1994). Furthermore, the effects of marital conflict have been related to child depression that may continue into young adulthood (Amato & Keith, 1991; Zill, Morrison, & Coiro, 1993). It appears that marital conflict is both directly and indirectly related to these childhood adjustment problems.

In addition to identifying the association between marital conflict and child behavior problems, current research has identified four specific characteristics of marital conflict that appear to be particularly damaging to observing children. First, not surprisingly, more frequent parental conflict results in more severe maladjustment (Radovanovic, 1993). Second, Goodman, Barfoot, Frye, & Belli (1999) report that the type of conflict is related to the severity of child functioning. For example, they found that children exposed to parental conflict characterized by the absence of reasoning and negotiation displayed more impaired social problem solving than children exposed to parental conflict exemplifying reasoning and negotiation were modeled for children. Third, independent of frequency, severity of parental conflict is related to increased problem behavior in children (Dadds, Atkinsons, Truner, Blums, & Lendich, 1999). Finally, the source of parental conflict (child-centered issues or non-child-centered issues) is significantly related to the impact of marital conflict on children. Specifically, marital conflict regarding child-centered issues is more predictive of child problem behavior than conflict regarding non-child centered issues (Grych & Fincham, 1993). Subsequently, research has shown that more frequent, more severe, child-centered conflict failing to employ negotiating and reasoning skills marital conflict is associated with child behavioral and emotional problems.

From these findings, researchers have hypothesized both direct and indirect pathways between marital conflict and child emotional/behavioral functioning. For example, marital conflict has been hypothesized to directly affect child adjustment in three primary ways. First, parental conflict models inappropriate or poor social problem solving for observing children. Subsequently, children who are exposed to marital conflict and observe these inappropriate models tend to reenact parental conflicts in peer and sibling relationships as they have internalized poor social problem solving skills (Cummings & Davies, 1994). Second, conflicting parents provide fewer opportunities for children to engage in social activities. As a result, children from conflicting families are provided fewer opportunities to learn appropriate social interactions (Cummings & Davies, 1994). And, third, parental conflict is related to child difficulties in regulating their emotions as children exposed to marital conflict gradually become desensitized to their own states of physiological arousal (DeBellis, 1997; Lieberman & Van Horn, 1998). In brief, marital conflict directly contributes to problems in child adjustment in that marital conflict is related to poor social problem solving in children and poor emotional control.

In addition to these direct relationships between marital conflict and child adjustment, marital conflict may indirectly effect child adjustment. Marital conflict may impact child adjustment by affecting other important aspects of the parent-child relationship. For example, parental conflict is associated with lower quality parenting (less effective discipline practices), less parental involvement with their children, increased parent-child conflict, and less appropriate parental affective responses to their children (Coiro & Emery, 1998, Fincham, Grych, & Osborne, 1994; Kerig, Cowan, &

Cowan, 1993). All of these things are, in turn, related to poor child adjustment. Subsequently, marital conflict impacts child adjustment indirectly as it is associated with the deterioration of appropriate parent-child relationships. Therefore, current demonstrates both a direct and indirect relationship between marital conflict and child adjustment.

It is interesting, however, that while there appears to be a great deal of research regarding the effects of parental conflict on child adjustment, there are relatively few well designed studies directly evaluating the impact of couples or family treatment on child problem behavior. For example, research regarding marital and couples therapies (e.g., behavioral marital therapy, cognitive behavioral couples therapy, emotion focused couples therapy and integrative couples therapy) invariably address child adjustment issues. However, efficacy studies involving these treatment approaches generally report outcome in terms of divorce rates, changes in marital satisfaction, and changes in partner communication rather than in terms of child adjustment (Christensen & Heavey, 1999). Similarly, research in the child abuse prevention/intervention literature generally fails to assess pre- and post-treatment levels of child problem behavior (see Kaplan, 1996 for reviews of child abuse and family violence research). Furthermore, research purporting to report the effectiveness of “family interventions” on child problem behavior is often misleading. For example, Estrada and Pinsof (1995) reviewed 67 "family interventions" aimed at reducing abroad range of child problem behaviors. While the overall findings indicated that these treatments were generally effective, Estrada and Pinsof clearly note that these reported family treatments are merely child therapy involving the parents rather than family or parent treatments with a goal of reducing child behavior problems (Pinsoff

& Wynne, 1995). Therefore, it is clear that there is a dearth of research information regarding the impact of couples/family interventions on child problem behavior.

Therefore, the aim of this research is to evaluate the effectiveness of the Parenting Wisely program (PW), as a family intervention with the goal of minimizing marital conflict and child behavior problems. Subsequently, this research will evaluate the association between participation in the PW program and reductions in parental conflict, specifically conflict revolving around child-centered issues, and subsequent reductions in child problem behavior. The PW program is a self-administered, interactive CD-ROM program promoting empirically identified parenting and communication skills such as contingency management, contracting, active listening, and role-modeling (Gordon, 2000).

The PW program was chosen for this research for two principle reasons. First, the PW program has several advantages over traditional family or couples therapies due to its format. For example, PW is a much briefer intervention than traditional therapies, requiring approximately three hours for participants to complete. Additionally, because PW is self-administered and the CD is interactive (the specific examples and questions provided are contingent upon prior individual participant responses) participants learn parenting and communication skills in a non-threatening and engaging manner. Moreover, because the program is brief, self-administered, and requires few resources (i.e., laptop computer or VCR), PW is an extremely cost effective treatment option amenable to a variety of clinical settings. In addition to the structural advantages of PW over traditional family and couples therapy, PW was chosen for this study based upon prior efficacy research using the program. For example, previous research has

demonstrated the PW program is empirically linked to improvements in family functioning, increases in parenting knowledge, and increases in the use of effective parenting skills (Kacir & Gordon, 1999; Lagges & Gordon, 1999; Segal, Gordon, Chen, Kacir, & Gylys, 1999; Woodruff, Gordon, & Lobo, 2001). Therefore, PW was chosen for this study for both its structural advantages and its demonstrated efficacy in teaching skills relevant to family conflict and child problem behavior.

In conclusion, because the PW program has been shown to teach empirically supported parenting and communication skills typically lacking in conflicting families, it is anticipated that participation in this program will be associated with reductions parental conflict and subsequent reductions in child problem behaviors.

## Method

### Participants

Parochial school participants. The participants for this study were 55 parents and their children who reside in a suburban area of Central Ohio. These children were enrolled in two different Catholic schools. Parents were invited to participate via a school newsletter. The response was moderately effective, producing 31 participants from a newsletter going to approximately 250 families. As an incentive to complete follow-up research forms, the parents in the parochial schools were offered $20. Nineteen subjects did not complete either pretest or posttest data. Their responses have been excluded from all statistical calculations, leaving 36 subject pairs (31 experimental, 5 control). Chi square analyses revealed that the excluded subjects did not differ significantly from the subjects that completed the study on any demographic variables or pretest questionnaires.

Thirty-three parents (92%) were Caucasian, one (2.8%) was Hispanic American, and one (2.8%) was Bi-Racial. The majority of participating parents were mothers (89%), with only 4 fathers participating. Eighteen parents completed high school or attended college for a short time (30.6% and 19.4 %, respectively). Seventeen parents (47.3%) obtained a college degree, attended graduate school, or obtained a graduate degree. The average income of the families was $35,001-45,000. The modal income level was above $55,000 per year (reported by 13 families). Thirty-two families (88.9%) consisted of two parents (4 of these were step-families, 1 child was living in an adoptive family). Two children live alone with their mothers (5.6%).

The average age of child subjects was 11.6, and 17 of the children were female (47%). Six children were in the fifth grade at the time of the study (16.7%), 13 were in the sixth grade (36.1%), 11 were in the seventh grade (30.6%), 2 were in the eighth grade (5.6%). One child was in the second grade, one was in the third grade, and one was in fourth grade.

Public school participants. The participants for this portion of the study were 55 parents and their children recruited from several schools within a suburban area of Central Ohio. The participants were recruited through a variety of methods. The parents of children in the at-risk after school programs (four schools) were sent a notice from the teacher, were called at home, and were approached when the teacher saw them at school. The letter was ineffective compared to the telephone calls. The parents of children in the severe behavior disorders classes (two schools) were asked individually by the special education teachers to participate. Participation rates varied among these methods, with the most effective being direct teacher contact (e.g., at Starling Middle School, 100%)

and the least effective being a letter from the teacher (parents of children in the at-risk after school). Sixteen subjects did not complete either pretest or posttest data. Their responses have been excluded from all statistical calculations, leaving 39 subject pairs (31 experimental, 8 control). Six of these subjects did not complete questionnaires at 3-month follow-up (5 experimental, 1 control); thirteen did not complete questionnaires at 9-month follow-up (12 experimental, 1 control). All retained subjects completed pretest questionnaires and completed questionnaires at one or both follow-up points. Chi square analyses revealed that the excluded subjects did not differ significantly from the subjects that completed the study on any demographic variables or pretest questionnaires.

The majority of participants from the local schools were Caucasian (79.5%), with only 10.3% African American. (the remaining 10.2% were either biracial or marked "other"). Eighty-seven percent of participating parents were mothers; thirteen percent were fathers. Seven parents failed to obtain a high school diploma or GED (17.9%). The majority of parents completed high school or attended college for a short time (33.3% and 28.2 %, respectively). Seven parents obtained a college degree, attended graduate school, or obtained a graduate degree (17%). The average income of the families was 25,001-35,000. The modal income level was above $55,000 per year (reported by 12 families). Thirty-one families (79.5%) consisted of two parents (7 of these were step-families, 2 were children living with grandparents, 3 were children living in adoptive families). The remaining seven children live alone with their mothers (17.9%).

The average age of child subjects was 12, and 20 of the children were female (51.3%). Twenty-two children were in the sixth grade at the time of the study (56.4%),

11 were in the seventh grade (28.2%), 4 were in the eighth grade (10.3%). One child was in the fourth grade and one was in the fifth grade.

Procedure

Parochial schools. Parents who responded to the newsletter contacted the school and made arrangements to use the PW program at school or at home. One fourth of the parents used the program at school on CD and three fourths used the program at home (40% of these parents used the CD at home on their own computers and 60% used the video set at home). The parents who responded tended to be motivated parents whose children had few behavior problems (based on Eyberg Child Behavior Inventory scores). Parents in the control group, whom teachers saw at school, were asked to fill out pre- and post-test measures (Eyberg Child Behavior Inventory, Corporal Punishment Scale, and the Strengths and Difficulties Questionnaire). Finally, all control participants were told that participation would earn the school $10 for each parent. Not all of the measures used in the public schools were used in the parochial schools, due to objections by the principals of the parochial schools (measures of family conflict and substance abuse were not permitted). The Strengths and Difficulties Questionnaire was added to the parochial school sample, but not the public schools.

Public schools. Parents from this sample participated in one of three ways. First, parents from the four after school at-risk programs who agreed to participate used the PW program in groups. The videotaped version of the PW program was used for the group format, as the schools did not have an LCD projector. Prior research has shown the video version to produce similar effects to the interactive CD-ROM (Segal et al, 2000). Participating parents were given dinner and their children received video game tokens.

After dinner, parents spent two hours watching the video after first completing pretest questionnaires (Eyberg Child Behavior Inventory, Corporal Punishment Scale, Conflict Tactics Scale, Personal Experience Screening Questionnaire). Group sizes ranged from 6-32, with attendance at the urban schools being lowest, as parents with evening jobs were unable to attend. Parents were invited to come to a parent night with pizza and games for their children to complete the three to nine-month follow-up measures. Control participants were recruited from those parents coming to the parent night who had not participated in the interventions. These parents completed the pretest measures and follow-up measures three and nine months later. The teacher reported these parents and their children were similar to those in the treatment groups in socioeconomic status and behavior problems at pretest. At the parent night, incentives of $20 per parent were offered for completing the next follow-up measure. Turnout was poor, resulting in less than a third of the participants completing follow-up measures.

Second, two other schools, with classes for severely emotionally disturbed children, let the parents use the CD at home. At one school, serving an inner city community, the teacher's aide sent the CD-ROM program home with the students on a laptop computer. These students first used the program in small groups at school, then took the program home and persuaded their parents to use the program with them. Follow-up measures were sent home with the students, with most being completed and returned. Finally, at the other school, serving an affluent suburban community, most parents used the CD on their home computers. One parent used the program at school. Follow-up measures were mailed, with half of the parents returning them.

Intervention

The program to be used in this study, Parenting Wisely (PW), is an interactive CD-ROM program that runs on an IBM compatible computer. The PW program presents the parent with nine different problem situations that are common in many families. These include getting a child to complete homework, getting children to do household chores, and dealing with stepparent/stepchild conflict. When a problem is selected, a short video plays in which actors illustrate the problem. After the initial problem situation is presented, a screen appears that prompts the parent to select the best way for the parent in the video to respond. The parent has two or three options from which to choose, only one of which is an effective and adaptive method of dealing with the problem. The parent then watches as his or her selected solution is played out in the video. After the video segment is completed, the computer provides the parent with feedback in the form of a question and answer session. This feedback prompts the parent to think about the response he or she chose, and provides concrete reasons why the response was either effective or ineffective. Through the question and answer sections, the parent is taught parenting skills such as contracting, praise, use of "I" statements, and assertive discipline. If the best solution to the problem was not selected, the program prevents the parent from progressing to a new problem until the correct solution is chosen, viewed, and critiqued. After the correct solution has been chosen, a short review quiz (with feedback) is presented. This quiz allows parents to demonstrate their understanding of the newly learned skills. Upon completion of the quiz, the parent then advances to a new problem situation. Additionally, parents using the PW program received a workbook (Gordon, Gylys, & Segal, 1996) to take home. This workbook contains review questions (based on the problems presented in the computer program),

critiques of each solution, a glossary of terms, and worksheets to aid in the implementation of skills taught in the program. Most parents report reading the workbook moderately to thoroughly, and most parents report feeling confident that they will be able to use the skills taught (Kacir and Gordon, 1999).

Measures

Demographic Form. The demographic form asked parents to report such information as child sex, age, and grade level as well as parent income, education, marital status, age, and race. Subjects also reported current involvement in counseling.

Eyberg Child Behavior Inventory (ECBI). This measure is a 36-item behavioral inventory designed to asses parents' perceptions of their child's behavior problems. The Eyberg Child Behavior Inventory (Eyberg & Ross, 1978) yields a Total Problems score (the sum of all the items endorsed as a problem on a yes-and-no scale) and a Problem Intensity score (assessed by a 7-point rating scale of problem intensity). The Eyberg has been standardized on a sample of 102 parents and children between the ages of 13 and 16; the mean Total Problems score is 6.0 (Eyberg & Robinson, 1983). The Eyberg Child Behavior Inventory demonstrates good reliability: .86 test-retest, .98 internal consistency, .59 inter-parent (Eyberg & Ross, 1978; Robinson, Eyberg, & Ross, 1980). Boggs, Eyberg, and Reynolds (1990) reported that the Eyberg Child Behavior Inventory demonstrates high concurrent validity with the Child Behavior Checklist (Achenbach & Edelbrock, 1983). Additionally, the Eyberg Child Behavior Inventory has been shown to be sensitive to treatment effects and to differentiate between clinical and normal populations (Kacir & Gordon, 1999, Webster-Stratton et al., 1988).

Corporal Punishment Measure (CP). The corporal punishment scale used for this study consisted of seven statements adapted from the Parent Punitiveness Quiz (Hyman, 1997). Subjects were asked to indicate their agreement with statements that represent attitudes toward corporal punishment, as measured by a 5-point rating scale. No psychometrics are available for this measure.

The Personal Experience Screening Questionnaire (PESQ). The PESQ (Winters, 1992) is a 38-item self-report measure of adolescent alcohol and other drug use. We used the 18 item problem severity subscale and the 3 item infrequency subscale (Winters, Weller, & Meland, 1993). The problem severity questions refer to behaviors, attitudes, and consequences associated with adolescent use of alcohol and other drugs. The infrequency scale can be used to identify questionnaires that contain invalid responses. The PESQ problem severity scale correlates highly ($r$ = .94) with the Personal Involvement with Chemicals Scale of the Personal Experience Inventory (Winters & Henly, 1989). Internal consistency reliability of the PESQ problem severity scale is high, coefficient alpha = .90-.91 (Winters, 1992).

Conflict Tactics Scales (CTS). The Conflict Tactics Scales were developed to measure conflict resolution within families and have been since used in numerous studies of family conflict and violence (Bulcroft & Straus, 1975). Three versions of the scales were used in this study to assess parent and child views of conflict resolution in their families (each parent reported on his or her spouse's behaviors during conflict; each child reported on his or her mother and father's conflict tactics). The Conflict Tactics Scales contain lists of conflict resolution behaviors that individuals use during conflict with others. Participants respond to each item by indicating the frequency of its occurrence on

a 7-point scale ranging from "Never" to "Always." The scales yield a total score as well as several subscale scores: Reasoning, Verbal Aggression, General Violence, and Severe Violence (Straus, 1979).

The theoretical basis for the Conflict Tactics Scales is supported by factor analyses (Straus, 1979). Adequate internal consistency has been established for the CTS. A sample of 2143 participants was used to calculate reliability for the CTS subscales: .50 to .76 Reasoning, .77 to .88 Verbal Aggression, .62 to .88 Violence subscales. Bulcroft and Straus (1979) established evidence for concurrent validity for the CTS. College students (N = 105) completed the CTS for parent conflict during their senior year of high school. Seventy-two percent of the students' parents completed the CTS as well. Correlations were computed between students' and parents' responses. Correlations were high for the Verbal Aggression (husbands, .51; wives, .43) and Violence (husbands, .64; wives, .33) scales but lower for the Reasoning scale (husbands, .19; wives, -.12).

Strengths and Difficulties Questionnaire (SDQ). The Strengths and Difficulties Questionnaire consists of 25 items and 5 subscales: Conduct Problems, Hyperactivity, Emotional Symptoms, Peer Problems, and Prosocial Behaviors (Goodman, Meltzer, & Bailey, 1998). The SDQ is available for multiple informants. For this study, we utilized the parent-report and self-report versions. There are three response options for each item, scored as 0, 1, or 2. Thus, subscale scores can range from 0-10 and the Total score can range from 0-50.

Goodman and Scott (1999) found that the parent version of the SDQ demonstrates high concurrent validity with the Child Behavior Checklist (Achenbach, & Edelbrock, 1988) as well as adequate criterion validity, as measured against a standardized, semi-

structured interview. The parent version of the SDQ also demonstrates good reliability: .70-.85 test-retest, .51-.76 internal consistency (Goodman & Scott, 1999).

The self-report version of the SDQ was standardized using a sample of 199 children ages 11-16. Of these children, 116 were attending a mental health clinic. The SDQ was found to discriminate between the two samples. The mean total difficulties score for the clinic children was 1.4 standard deviations above the mean Total difficulties score of the community children (Goodman et al., 1998). Inter-rater correlations were calculated for SDQ subscales to determine if parent, teacher, and child reports of child behavior were similarly related. Analyses showed only one significant difference between correlations: on the Prosocial subscale, parent-child correlations were significantly higher than child-teacher or parent-teacher correlations (Goodman et al., 1998). The total score and all subscales demonstrated adequate internal consistency (.61-.75), as measured using Chronbach's alpha.

## Results

### Parochial Schools

Comparison of demographic variables. Chi-square analyses were performed on the categorical demographic variables and one-way ANOVAs were conducted on the continuous demographic variables to determine if the control and experimental groups differed significantly on any of these variables at pretest. Results of these analyses indicate that the groups did not differ on any of these demographic variables; nor were any differences found for any of the dependent variables at pre-test.

Only 19% of participants (7 experimental, 0 control) in the parochial schools reported child problem behaviors in the deviant range. Children's problem behaviors at

pre-test ranged from zero (reported by 15 parents, 12 experimental, 3 control) to 20 (reported by 1 parent in the experimental group) as measured by the Total Problems Score on the ECBI.

Repeated measures analysis of variance (ANOVA). To test the hypotheses that parent/child pairs in the experimental group will report fewer attitudes endorsing corporal punishment, reduced numbers of child problem behaviors, reduced intensity of child problem behaviors, and fewer child difficulties following their participation in the PW program, 2 (group: experimental, control) x 2 (time: pre-test, 8 month follow-up) repeated measures ANOVAs were performed on the dependent measures for these variables: CP, ECBI Total Problems, ECBI Problem Intensity, SDQ Total Problems.

The individual ANOVAs revealed no statistically significant differences between experimental and control groups over time on the Corporal Punishment Scale, ECBI Problem Intensity, ECBI Total Problems, SDQ Total Problems (child version), or the SDQ Total Problems (parent version). See Table 1 for descriptive statistics for these dependent measures.

Exploratory analyses. Because the majority of parents reported non-deviant levels of child behavior at the time of treatment, it was possible that the overall lack of parental attitude change reflected a “floor-effect” as the overall sample had little room to improve. In order to test this theory, exploratory analyses were conducted using those ratings made by parents whose initial ratings placed their children in the deviant range. Seven experimental group parents reported clinically significant levels of child problem behaviors at pre-test, as measured by the Eyberg Child Behavior Inventory. One of these

parents did not complete follow-up measures and was therefore excluded from these analyses. (Total Intensity: M 124.14, SD = 18.77; Total Problems: M = 14.5, SD = 4.04).

Repeated measures ANOVAS were calculated on all dependent variables to determine if there were statistically significant reductions on any of these variables over time (Table 2). Results showed statistically significant reductions in problem intensity and total problems over time [ECBI Problem Intensity: F (1,5) = 8.61, p = .03, d = .63; ECBI Total Problems: F (1,5) = 25.34, p = .01, d = .88]. Similarly, there were significant reductions on two SDQ parent report subscales, Total Problems [F (1,6) = 9.08, p = 02, d = .60] and Emotional Problems [F (1,6) = 6.34, p = .05, d = .51]. Additionally, there was a statistically significant reduction in the amount of self-reported child Conduct Problems, F (1,5) = 6.80, p = .05, d = .58. Finally, two other subscales on the Child report version of the SDQ approached significance: Total Problems [F (1,5) = 5.26, p = .07, d = .51 and Emotional Problems [F (1,5) = 5.00, p = .08, d = .58]. Table 2 summarizes the results of these analyses. Unfortunately, because all deviant subjects were in the experimental group, no between group measures could be calculated.

Public Schools

Comparison of demographic variables. As with the parochial school sample, chi-square analyses were performed on the categorical demographic variables and one-way ANOVAs were performed on continuous demographic variables to determine if the control and experimental groups differed significantly on any of these variables at pretest. One statistically significant difference between groups were found: children in the experimental group were younger than children in the control group, F (1, 73) = 8.07, p = .01.

One-way ANOVAs were calculated to determine if subjects in the experimental and control groups reported statistically significant differences on the dependent variables at pretest. No differences between groups were found for Corporal Punishment Scale or the ECBI. Analyses of the Total Scores on the spousal, maternal, and paternal versions of the CTS revealed one statistically significant difference; children in the experimental group reported healthier means of solving family conflict than children in the control group [$F(1,31) = 8.37$, $p = .01$]. Additionally, children in the experimental group reported lower levels of substance use than children in the control group, as measured by the Problem Severity subscale of the PESQ [$F(1,35) = 5.25$, $p = .03$].

Only 33% of participants (11 experimental, 2 control) in this study reported a significant number of child problem behaviors. Children's problem behaviors at pre-test on the Total Problems Scale of the ECBI ranged from zero (reported by 7 parents, 6 experimental, 1 control) to 31 (reported by 2 parents in the experimental group).

Repeated measures analysis of variance (ANOVA). To test the hypotheses that parent/child pairs in the experimental group will report reduced numbers of child problem behaviors, reduced intensity of child problem behaviors, use of healthier strategies in conflict, less parental agreement with the use of corporal punishment, and reduced levels of child substance use in comparison to parent/child pairs in the control group, 2 (group: experimental, control) x 3 (time: pre-test, 3 month follow-up, 9 month follow-up) repeated measures ANOVAs were performed on the dependent measures for these variables: ECBI Total Problems, ECBI Problem Intensity, CTS Total (spouse, mother, father), CP, and PESQ Problem Severity. Refer to Table 3 for descriptive statistics pertaining to these analyses.

The 2 x 3 repeated measures ANOVA revealed a significant main effect of time for the PESQ Problem Severity Scale, $F(2, 32) = 3.56$, $p = .04$. Over time, children in both groups reported less substance use. In addition, a significant group x time interaction was found for the CPS, indicating that parents in the experimental group endorsed fewer statements favoring corporal punishment over time than parents in the control group [$F(2, 26) = 7.16$, $p < .01$, $d = .32$]. In addition, the PESQ problem severity scale interaction revealed that children in the control group reported less substance use over time, in comparison to children in the experimental group [$F(2, 32) = 3.56$, $p = .04$]. However, It is important to note that children in the experimental group reported very little substance use at pretest. Finally, the group x time interaction on the CTS-Spousal version Total Score shows that after participation in the PW program, parents in the experimental group reported use of healthier conflict tactics over time than parents in the control group [$F(2, 20) = 4.67$, $p = .02$, $d = .32$]. In fact, cursory analysis of the group means show parents in the control group reported an increase in harsher tactics at 3-month follow-up.

In contrast, the individual ANOVAs revealed no significant differences for the Eyberg Child Behavior Inventory Problem Intensity Scale, the Eyberg Child Behavior Inventory Total Problems Score, the Mother version of the Conflict Tactics Scale Total Score, and the Father version of the Conflict Tactics Scale Total Score.

Additional analyses. Because a significant group x time interaction was found on the CTS, we examined the CTS subscales as well: Reasoning, Verbal Aggression, General Violence, and Severe Violence. Individual 2 x 3 repeated measures ANOVAs were calculated for the subscales of each version of the CTS (spouse, mother, father).

Results indicate a significant group x time interaction for the Severe Violence subscale of the CTS-Spouse [F (2, 20) = 3.46, p = .05, d = .20] and the Severe Violence subscale of the CTS-Mother [F (2, 32) = 3.87, p = .03, d = .20] indicating a reduction in violent acts committed by the spouse toward the participating parent and as well as a reduction in violence directed at children by their mothers. .

Furthermore, a non-significant trend in the expected direction was observed for the General Violence subscale of the CTS-Spouse, the CTS-Mother Reasoning and General Violence subscales, and the CTS-Father Reasoning and Severe Violence subscales, suggesting that participants in the experimental group reported reductions on the aforementioned variables over time, as compared to reports by control group participants.

Exploratory analyses. As previously noted, 13 public school subjects (11 experimental, 2 control) reported clinically deviant levels of child problem behaviors at pretest. Again, due to concerns of floor effects, only data for experimental subjects were used in the exploratory analyses. Repeated measures ANOVAS were calculated on all dependent variables to determine if there were statistically significant reductions on any of these variables over time. Results showed only one significant reduction: these experimental group children evidenced fewer total problems over time, as measured by the ECBI Total Problems scale, F (2,4) = 7.08, p = .05, d = .78, indicating that children's behaviors improved as a result of their parent's use of skills taught in the PW program.

## Discussion

Implementing parenting education programs in schools in this study, as in schools nationally, is challenging and demands commitment on the part of the school. Parents

whose children are experiencing the most problems are the hardest to engage, as schools are well aware. We were able to engage 75 parents in public and parochial schools whose children were at some risk for behavior problems. At pre-test, measures of child problem behavior (completed by the parents) indicated that most of these children were not experiencing serious behavior problems. Some parents may well have underreported their children's problems (at home) since the children were often in an at-risk program in school.

Participating in the PW intervention did not affect the low number of behavior problems reported in the public schools. For those public school children whose scores were in the deviant range at pre-test, the decline of their scores approached significance, (although the effect size was large, $\underline{d} = .76$). In the parochial schools, the parents receiving the PW program whose children scored in the deviant range of the ECBI reported reduced behavior problems, as did their children. These findings support findings from previous studies of PW's effectiveness that found completing PW was associated with substantial reductions in child problem behavior when the level of problem behaviors is abnormal (at least one standard deviation beyond the mean)(Kacir & Gordon, 1999; Gordon & Kacir, 1997; Segal, Chen, Gordon, Kacir, & Gylys, 2000; Woodruff, Gordon, & Lobo, 2000;Gordon, 2000).

The most interesting finding was the reduction of conflict and violence in the families who used the PW program compared to those who did not. Spousal conflict, as reported by the parents, showed a significant reduction, as well as conflict and aggression between parents and children (reported by the children). General violence scores, as well as verbal aggression and severe violence scores, improved. Children with clinically

deviant behavioral problems reported a drop in their father's use of severe violence, and a trend towards a decline in overall violence. This change mirrored the treatment group parents' report of less favorable attitudes towards corporal punishment after use of the PW program. This was not surprising, as the PW program discusses the risks of using corporal punishment and teaches non-coercive discipline methods, we expected parents to modify their attitudes and practices. These findings may build upon those of a previous study of the effectiveness of PW with low income families, improvements in family functioning were also found (Woodruff et al, 2000), similar to the improvements in parental violence and conflict here.

The skills taught in the PW program were likely influential in reducing family and spousal violence. Communication skills such as active listening and I messages, and problem solving and contracting skills would lessen conflict due to increased reciprocity and respect. Spousal conflict probably diminished due to parents' use of improved communication and problem solving skills with each other, and/or because they were cooperating more in parenting their children, who may have become more responsive. As a result, children become more responsive to parental requests, which further serves to decrease the parents' frustration and subsequent violence. It appears that future research would be warranted to confirm this theory.

The reduction in severe violence such as kicking, biting, hitting with a fist or object, or threatening with a weapon was especially gratifying. This demonstrates that teaching parenting skills and relationship skills to families through the schools is an effective method of preventing domestic violence. When the mental health system focuses on the victim and offers counseling and therapy, a logical response in the eyes of

many, the opportunity to intervene with the whole family system, may be missed. In the absence of compelling data showing the effectiveness of this approach (PW), we encourage schools to focus on adding or substituting parenting and family interventions with compelling evidence of effectiveness to teach these skills.

Several cautions regarding the generality of the study's findings should be noted. Due to the small sample size of the control group, differences between the groups may have been greater than we found. With a larger sample, some of the trends may prove to be significant differences. There were also substantial variations in administering the PW program (parental use alone vs. with their children, CD-ROM use vs. videotape viewing, group vs. individual viewing of the video). The use of the video version of the program, while easier to administer to groups, limits the amount of interaction with the program as compared to individual use, but does allow for interaction among parents. Many schools have used the CD with groups of parents to achieve both benefits. Because of the variations in program administration in this study, we cannot know the impact of the PW presentation, their advantages and disadvantages, or detractions from the treatment effect. Use of larger samples and random assignment to various administrations are needed to answer these questions.

Similarly, differences in recruitment methods also led to different rates of reaching our target group—children with behavior problems, the impact of which we have no way of assessing. Since school staff administered the program, we had less control over how it was done than if we had supplied personnel to administer the program. Overall, however, we were impressed that staff put so much time into the

project. Their belief that parents needed to improve their parenting skills motivated the school staff.

Our recommendations for implementing this program in schools are based not only on this project, but our experiences in communities around the nation. Clearly, for effective treatment of existing child behavior problems and family violence, we must entice or coerce parents to participate. Juvenile courts have had growing success with mandating that parents of truants and delinquents receive parenting training or family interventions. Schools can and do use coercion for parents to participate in a parenting intervention when students face suspension or expulsion. Some schools offer a Saturday class for problem students, and a parallel class for their parents. We recommend that when schools have the resources of home health aides or home visitors they administer the PW program in the homes, as this removes most of the barriers of inconvenience, transportation and child care problems, and scheduling for high-risk families.

School implementation of the PW program is fairly easy and can be accomplished in a variety of ways. For example, implementation was carried out successfully in one of the schools by a counselor who went to the homes or loaned a laptop to the students to take home for their parents to use the program with them. In addition to providing the opportunity to use the program at home, other enticements can be used, such as paying parents $30-$50 or giving them grocery certificates in the same amount. Grant funds can be specified for this purpose. These strategies improve the motivation of parents to use a program that most do not realize they need and from which they can benefit. We recognize that parents who have poor parenting skills do not realize that their skills are lacking and will not voluntarily seek out help for their parenting. They do not know what

they do not know. Thus, researchers, schools, and other service providers need to go to great lengths to convince them to try such programs. Most parents who do are grateful afterwards.

Other strategies for increasing the participation of parents is to have good, evidence-based parenting programs readily available through school and county resource centers, such as the Columbus Consortium for Safe and Drug Free Schools. They loan out PW and other parenting programs, along with laptops and workbooks, to schools who respond to their advertisements. The more parents hear that such programs are being used, and the more they know of parents who have used them with good results, the less stigmatizing parental participation will be. When use of parenting programs by high-risk parents is seen as being evidence of good, proactive parenting, we will have removed one more of the many barriers these families face.

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Table 1

Parochial Schools Dependent Variables by Group (Descriptive Statistics)

| | PW Group | | | | Control | | | |
|---|---|---|---|---|---|---|---|---|
| Variable | Min | Max | M | SD | Min | Max | M | SD |
| ECBI Total Problems | | | | | | | | |
| Pretest | 0 | 20 | 6.13 | 6.19 | 0 | 6 | 1.60 | 2.61 |
| 8 months | 0 | 17 | 4.69 | 5.61 | 0 | 5 | 1.60 | 2.07 |
| ECBI Problem Intensity | | | | | | | | |
| Pretest | 36 | 149 | 84.77 | 29.04 | 48 | 89 | 67.00 | 16.36 |
| 8 months | 46 | 149 | 77.79 | 25.09 | 44 | 100 | 65.20 | 21.11 |
| CP Total | | | | | | | | |
| Pretest | 13 | 35 | 25.13 | 6.18 | 14 | 295 | 21.80 | 5.45 |
| 8 months | 7 | 35 | 24.67 | 6.86 | 18 | 24 | 21.02 | 2.39 |
| SDQ Parent Total Score | | | | | | | | |
| Pretest | 0 | 19 | 7.48 | 5.50 | 3 | 10 | 4.80 | 2.95 |
| 8 months | 0 | 16 | 6.23 | 4.65 | 1 | 12 | 5.40 | 4.28 |
| SDQ Child Total Score | | | | | | | | |
| Pretest | 0 | 25 | 9.93 | 6.60 | 1 | 19 | 10.0 | 7.53 |
| 8 months | 0 | 21 | 8.24 | 5.91 | 6 | 13 | 9.0 | 2.92 |

Table 2

Descriptive Statistics and Univariate F-tests of the Significant Group x Time Interaction for the Clinically Deviant Parochial School Subjects

| | M | SD | df | F | p | d |
|---|---|---|---|---|---|---|
| ECBI Intensity | | | | | | |
| Pretest | 124.14 | 18.77 | 1,5 | 8.612 | .03 | .63 |
| 9 months | 102.50 | 32.67 | | | | |
| ECBI Total Problems | | | | | | |
| Pretest | 14.5 | 4.04 | 1,4 | 25.34 | .01 | .86 |
| 9 months | 7.83 | 7.65 | | | | |
| SDQP Total Problem | | | | | | |
| Pretest | 14.86 | 3.44 | 1,6 | 9.08 | .02 | .60 |
| 9 months | 10.86 | 4.67 | | | | |
| SDQP Emotional | | | | | | |
| Pretest | 4.43 | 1.62 | 1,6 | 6.34 | .05 | .51 |
| 9 months | 2.57 | 2.15 | | | | |
| SDQC Total Problem | | | | | | |
| Pretest | 13.33 | 5.72 | 1,5 | 5.26 | .07 | .51 |
| 9 months | 10.00 | 6.69 | | | | |
| SDQC Emotional | | | | | | |
| Pretest | 3.83 | 2.64 | 1,5 | 5.00 | .08 | .50 |
| 9 months | 2.83 | 2.64 | | | | |
| SDQC Conduct | | | | | | |
| Pretest | 3.67 | 2.25 | 1,5 | 6.80 | .05 | .58 |
| 9 months | 1.83 | 1.33 | | | | |

Table 3

Public Schools Dependent Variables by Group (Descriptive Statistics)

| Variable | PW Min | Max | M | SD | Control Min | Max | M | SD |
|---|---|---|---|---|---|---|---|---|
| ECBI Total Problems | | | | | | | | |
| Pretest | 0 | 31 | 10.0 | 9.31 | 0 | 22 | 8.86 | 8.47 |
| 3 months | 0 | 35 | 6.09 | 8.80 | 0 | 29 | 7.57 | 10.75 |
| 9 months | 0 | 21 | 6.53 | 6.28 | 0 | 21 | 6.86 | 7.56 |
| ECBI Problem Intensity | | | | | | | | |
| Pretest | 47 | 236 | 108.5 | 43.36 | 83 | 149 | 107.14 | 23.74 |
| 3 months | 51 | 218 | 99.96 | 40.54 | 75 | 180 | 109.0 | 36.18 |
| 9 months | 50 | 140 | 96.16 | 26.63 | 78 | 177 | 103.57 | 34.26 |
| CP Total | | | | | | | | |
| Pretest | 9 | 27 | 18.36 | 4.95 | 9 | 23 | 17.57 | 5.09 |
| 3 months | 9 | 30 | 20.31 | 4.93 | 10 | 21 | 15.86 | 4.22 |
| 9 months | 9 | 35 | 20.16 | 6.78 | 12 | 22 | 19.00 | 3.37 |
| CTS-Spouse Total | | | | | | | | |
| Pretest | 21 | 85 | 36.87 | 12.41 | 35 | 50 | 40.33 | 8.39 |
| 3 months | 22 | 62 | 34.32 | 8.88 | 25 | 73 | 44.86 | 15.12 |
| 9 months | 21 | 101 | 37.19 | 18.09 | 30 | 84 | 44.57 | 18.73 |
| CTS-Mother Total | | | | | | | | |
| Pretest | 22 | 59 | 35.25 | 8.67 | 26 | 50 | 3.88 | 8.39 |
| 3 months | 19 | 44 | 31.00 | 6.95 | 26 | 49 | 38.00 | 8.12 |
| 9 months | 21 | 51 | 31.17 | 7.21 | 28 | 56 | 43.71 | 9.67 |
| CTS-Father Total | | | | | | | | |
| Pretest | 22 | 55 | 32.68 | 7.34 | 34 | 51 | 41.57 | 6.55 |
| 3 months | 24 | 61 | 31.52 | 7.86 | 26 | 69 | 42.83 | 14.26 |
| 9 months | 21 | 38 | 30.00 | 5.55 | 27 | 50 | 37.71 | 7.80 |
| PESQ Problem Severity | | | | | | | | |
| Pretest | 18 | 24 | 18.5 | 1.53 | 18 | 33 | 21.25 | 5.57 |
| 3 months | 18 | 23 | 18.2 | 1.0 | 18 | 19 | 18.14 | .38 |
| 9 months | 18 | 18 | 18 | 0 | 18 | 24 | 18.86 | 2.67 |