

## CHAPTER 2

### EARLY PARENT TRAINING\*

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#### INTRODUCTION

Disruptive behavior in children can be defined as an array of behavior problems that include opposition to adults, hyperactivity, stealing, lying, truancy, extreme non-compliance, aggression, physical cruelty to people and animals, and destructive and sexually coercive behaviors (American Psychiatric Association, 1994; Quay and Hogan, 1999a). Oppositional-Defiant Disorder, Conduct Disorder, and Attention-Deficit/Hyperactivity Disorder are the diagnostic categories most often used in the psychiatric field to refer to children presenting severe disruptive behavior patterns. Although epidemiological studies in this area face important measurement problems and are limited by sample size (Lahey et al., 1999:23), it has been suggested that the three forms of disruptive behaviors account for up to two-thirds of all childhood and adolescent psychiatric disorders (Quay and Hogan, 1999b). Most children manifest disruptive behaviors during early childhood, and show a gradual decline in frequency with age (Broidy et al., 1999; Lahey et al., 1999:23; Nagin and Tremblay, 1999; Tremblay, 2000; McCord et al., 2001). The term delinquent behavior refers to disruptive behaviors sanctioned by the law. Age of the child that performs a disruptive behavior is generally a key factor in deciding whether the behavior is, or is not, sanctioned by the law (McCord et al., 2001).

#### BACKGROUND

Longitudinal studies have shown that there are long-term consequences of disruptive behavior disorders for the individual, family, friends, community, and even the following generation (White et al., 1990; Farrington, 1995; Fergusson and Horwood, 1998; Serbin et al., 1998; Frick and Loney, 1999:507; Loeber, 2001; Côté et al., 2001). Prevention appears a worthy goal as treatment programs have shown a modest impact (Chamberlain, 1999:495; Kavale et al., 1999:441). The developmental trajectories of disruptive behaviors are a major reason to argue

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\* We thank the following agencies for financial support: Canadian Institute for Advanced Research, FCAR, Fonds de la Recherche en Santé du Québec, Molson Foundation, Social Sciences and Humanities Research Council of Canada, and St-Justine Hospital Research Centre.

for very early prevention. There is good evidence that chronic disruptive behavior leading to serious delinquency appears during early childhood (Moffitt et al., 1996; Brody et al., 1999; Nagin and Tremblay, 1999). There is also evidence to suggest that children with disruptive behavior problems become increasingly resistant to change with age despite treatment efforts (Kazdin, 1985; Frick and Loney, 1999:507; Tremblay, 2000). All these considerations underscore the need for early preventive programs targeting high risk families.

During the past 40 years, parenting programs have been offered in a variety of settings and to a variety of families. Many of these programs have targeted families with school age disruptive children (Patterson, 1982; Webster-Stratton et al., 1988; Kazdin et al., 1992; Tremblay et al., 1995; Hawkins et al., 1999). Parenting interventions as early as pregnancy have recently been stimulated by the evidence of reduced delinquent behavior in adolescents of poorly educated mothers who received a home visitation program during pregnancy and the first two years following birth (Olds et al., 1998). These home visitation programs are aimed at a wide range of outcomes, including maternal physical and psychosocial health, parenting skills, and children's psychosocial development and physical health. The long-term impact on delinquency of intensive home visitation during a period of more than two years supports the hypothesis that quality of family environment during the early years is a key to delinquency prevention (Patterson et al., 1992; Yoshikawa, 1994; McCord et al., 2001; Nagin and Tremblay, 2001). Early parenting interventions generally postulate that quality of parent-child relations will facilitate learning of control over impulsive, oppositional, and aggressive behavior, thus reducing disruptive behavior and its long-term negative impact on social integration.

The current review aims to address whether early parenting and home visitation programs are effective in preventing behavior problems and delinquency in children.

## SUMMARY OF RESEARCH METHODS

### *Search Criteria and Strategy*

The review was limited to families with a child under age three at the start of the intervention to ensure that the interventions were provided early in the child's life. However, no limits were set concerning the child's age at the end of the intervention. In addition, selected interventions could target either the general population (universal intervention) or a high risk group (selective intervention). Studies were eligible for this review when parent training or support was a major component of the intervention, although not necessarily the only one.

The original aim of the review was to assess the impact of the interventions on the children's delinquent behavior. However, since we found only one study assessing delinquency, we used a broader scope in our review and selected studies with outcome measures of disruptive behaviors. These assessments included self-reported delinquency, self-, parent-, or teacher-rated measures of disruptive behavior, and observer-rated assessments of disruptive behavior in the classroom.

Only studies employing random assignment or quasi-experimental (pre- and post-intervention assessments and adequate control groups) designs were included.

Our starting point for searching through the literature was two previous reviews. The first (Mrazek and Brown, 1999) reviewed psychosocial interventions during the pre-school years designed to enhance child development according to a wide variety of outcomes. The second review (Tremblay et al., 1999) focused on programs targeting families of pre-adolescents for the prevention of disruptive behavior. In addition, several other major sources of information were searched: Two major electronic databases, PsyINFO and MEDLINE (1967 to 2001); the *Cochrane Library*; the *Future of Children* publications, as well as all the potentially relevant review articles identified during the search (Gomby et al., 1993; 1999; Yoshikawa, 1995; Vitaro et al., 1996; Culross, 1999; Barlow and Coren, 2001). A wide search strategy was used to ensure that relevant studies were not missed. Hence, the search terms excluded study design and reflected a wide age group and a wide range of behavior problems. The following search terms were used: "parent training," "childhood," "pre-school," "delinquency," "conduct disorder," "antisocial behavior," "aggression," "physical aggression," and "behavior problems."

### *Identification of Studies*

Titles and abstracts of studies identified through our searches were reviewed to determine whether they met the inclusion criteria. Studies were selected for methodological quality using the criteria suggested by Mrazek and Brown (1999). These authors have extensively reviewed outcomes in psychosocial prevention and early intervention in young children. They have developed an instrument called the Threats to Trial Integrity Score (TTIS) that allows for the measurement of the quality of the design of a controlled trial, whether it is randomized or not. This scale assesses the potential threat regarding ten dimensions of quality design on a four-point scale, from Null or Minimal risk (0), Low Risk (1), Moderate Risk (2), and High Risk (3). Scores for each of the ten dimensions are combined in a weighted fashion to obtain a global score (for additional information, see Mrazek and Brown, 1999). The authors then categorized this ordinal scale into a five level Trial Quality Grade. Each trial was classified as a one- to five-star design. The five-star designs were the highest scoring trials based on TTIS score (about 5%). The four-star designs were among the top quarter of trials; the three-star designs were in the second quartile, and so forth. Mrazek and Brown suggested concentrating on trials with five- and four-star designs as they are clearly well-designed studies. Mrazek and Brown identified 165 prevention studies with preschool children, but only thirty-four met the four- or five-star classification. Of the 34 studies, a total of six trials met our inclusion criteria. Three additional trials were identified in Tremblay et al. (1999), but they were not kept in our review, as they did not meet the four-star criteria design of Mrazek and Brown (1999).

TABLE 1. *Sample Characteristics of Studies Included in the Review*

Study	Target Population	Country	Final N <sup>c</sup>
Cullen (1976)	[Universal] <sup>a</sup>	Australia	246
Johnson and Breckenridge (1982)	Low-Income Mexican-American families [Selective] <sup>b</sup>	U.S.	139
Johnson and Walker (1987)			
Kitzman et al. (1997)	Pregnant women with at least 2 of the following: unmarried, less than 12 years of education, unemployed Most subjects were African-American [Selective]	U.S.	743
McCarton et al. (1997)	Low-birth-weight premature infants [Selective]	U.S.	874
Olds et al. (1986, 1998)	Women who were young (< 19 years), unmarried or of low SES [Selective]	U.S.	323
Scarr and McCartney (1988)	All families with a 2-year-old child in a Bermudian parish [Universal]	Bermuda	117
St-Pierre and Layzer (1999)	Families with incomes below the poverty level [Selective]	U.S.	<2000 (exact number not available)

<sup>a</sup> Universal preventive intervention: Intervention that targets the general population.

<sup>b</sup> Selective preventive intervention: Intervention that targets high risk groups.

<sup>c</sup> Sample number related to outcomes examined in this review.

The PsyINFO search yielded 151 new abstracts, none of which were included in the review. Most of them were excluded because they targeted older children. Others were excluded for methodological reasons, mostly because of the absence of a control group. Searching the *Cochrane Library* and the *Future of Children* publications generated a further four reviews that provided information about one trial that had not already been identified and met our criteria.

Thus, seven studies met our criteria. The data have been summarized using effect sizes, but have not been combined in a meta-analysis due to the small number of studies and the presence of substantial heterogeneity among them.

## RESULTS

### *Sample Characteristics*

All seven studies were randomized controlled experiments (see Table 1). All but two were conducted in the U.S. Two interventions targeted the general population (universal preventive interventions), while the remaining five were selective

preventive interventions (i.e., they targeted high risk groups, mostly socially disadvantaged families or, in one study, premature babies). Boys and girls were included in all studies. Two studies targeted minority groups: African Americans and Mexican Americans. The latter study was the only one that did not attempt to obtain a representative population sample due to major recruitment challenges. While it can be argued that nearly all studies tried to involve families, in practice, most studies intervened mainly with mothers.

In total, 7,917 families were randomly assigned to receive parent training or to a control group. One study had over 4,000 participants involving 21 sites, two had over 1,000 participants, three had over 300, and one had 125. Attrition rates varied greatly from one study to another, ranging from 20% to 67%. Sample numbers relevant to our review varied from 117 to more than 2,000 (see right-hand column of Table 1).

### *Intervention Characteristics*

Four interventions began when the child was 12 months old or younger (see Table 2). All four continued beyond age two, up to either age three, five, or six. Two trials began during the prenatal period and both continued up to two years. Finally, one trial began when children were 24 months old and ended when they were about four years. Overall duration of interventions ranged from more than two to six years. Length of follow-up ranged from immediate end of intervention

TABLE 2. *Intervention Characteristics of Studies Included in the Review*

Study	Average Age at Start of Intervention	Intervention Period (Child's Age)	Type of Intervention
Cullen (1976)	3 months	Up to 6 years	Clinic-based interview with general practitioner
Johnson and Breckenridge (1982) Johnson and Walker (1987)	12 months	1 to 3 years	Home visits, family workshops and child development center
Kitzman et al. (1997)	16.5 weeks (gestational age)	Prenatal to 2 years	Home visits
McCarton et al. (1997)	7 weeks	Up to 3 years	Home visits, parent groups, child development center
Olds et al. (1986, 1998)	25 weeks (gestational age)	Prenatal to 2 years	Home visits
Scarr and McCartney (1988)	24 months	2 to 4 years	Home visits
St-Pierre and Layzer (1999)	Not available	Younger than 1 year and up to 5 years	Home visits, child development center

to 13 years following the end. The longest follow-up was for the Elmira (New York) project (Olds et al., 1998). Nearly all studies (six) involved intensive home visitation. Half of these had additional intervention components, either the participation in a child development center or parent groups. One study involved a clinic-based interview conducted with mothers by a general practitioner. In all but one study (Scarr and McCartney, 1988), control groups were offered a non-intensive follow-up that included screening procedures, pediatric surveillance, free-transportation, or annual contact by the secretary of the study.

### *Effectiveness of Early Parent Training*

Overall, results concerning the effectiveness of parent training in the prevention of behavior problems in children were mixed (see Table 3). Four studies reported no evidence of effectiveness, two reported beneficial effects, and one study reported mainly beneficial effects with some harmful effects. Of the studies with significant results, which provided sufficient data to calculate an effect-size, the treatment effect ranged from 0.25 to 1.05 (calculations from Mrazek and Brown, 1999). All but one study (Scarr and McCartney, 1988) included mother reports of disruptive behavior. Two studies also included teacher or school reports (Johnson and Walker, 1987; Olds et al., 1998), and one study used self-reported delinquency (Olds et al., 1998). Only two of the seven studies were designed to target specifically behavior problems: the Houston Parent-Child Development Center Program (Johnson and Breckenridge, 1982; Johnson and Walker, 1987) and the Brusselton study (Cullen, 1976). Most studies looked at behavior problems among a wide range of other outcomes; for example, cognitive development and physical health. The child's age at evaluation varied greatly from one study to another, ranging from two to 15 years. Only two studies reported differential effects according to gender, but both girls and boys had benefited from the interventions.

Only one study (Olds et al., 1998) evaluated the effectiveness of home visitation and parent training on delinquent behaviors. Although not initially designed with the aim of preventing delinquency, the Elmira project reported beneficial effects on the child's delinquent behavior 13 years after the end of the intervention (age 15). However, the beneficial effect of the intervention concerned a subgroup of children of poor, young, and unmarried women only ( $n = 68$ ). The intervention was an intensive nurse home visiting program that started early during the pregnancy of high risk women and continued during the first two years after birth. The nurses promoted several aspects of maternal functioning and well-being, including competent care of the children. The nurses completed an average of nine home visits during pregnancy and 23 home visits from birth to the child's second year (Olds et al., 1997).

## CONCLUSIONS AND POLICY IMPLICATIONS

A very limited number of well-designed studies including both early interventions and outcomes related to disruptive behaviors were available for this review. In

TABLE 3. Effectiveness of Early Parent Training (Outcome Findings)

Study	Outcome	Effect size <sup>a</sup>	P value	Direction of Outcome <sup>b</sup>
Cullen (1976)	AT AGE 6			
	<i>Mother reports</i>			<i>Beneficial</i>
	Talked loudly	< -0.25	<0.05	T
	Hit or struck others	< -0.25	<0.05	T
		< -0.35	<0.05	G
	Exaggerated/ told untruths	< -0.35	<0.05	G
				<i>Harmful</i>
	Late for school	>0.42	<0.001	T
		>0.48	<0.01	B
Johnson and Breckenridge (1982)	AT AGE 5.3			
	<i>Mother reports</i>			<i>Beneficial</i>
Johnson and Walker (1987)	Behavior Assessment			<i>Beneficial</i>
	- Destructive	-1.05	<0.01	B
	- High Activity	-0.55	<0.05	B
	AT AGE 5.5			
	<i>Teacher reports</i>			
	Classroom Behavior Inventory			<i>Beneficial</i>
	- Hostility Scale	-0.46	0.01	T
		-0.66	0.01	B
	Behavior Problems			
	- Disrupts	-0.42; -0.53	0.019; 0.038	T; B
	- Obstinate	-0.48; -0.61	0.007; 0.018	T; B
	- Restless	-0.47; -0.70	0.008; 0.007	T; B
	- Fights	-0.46; -0.68	0.01; 0.008	T; B
- Impulsive	-0.58; -0.54	0.025; 0.03	B; G	
Kitzman et al. (1997)	AT AGE 2			
	<i>Mother reports</i>			
	Child Behavior Checklist			NS
McCarton et al. (1997)	AT AGE 8			
	<i>Mother reports</i>			
	Child Behavior Checklist			NS
	Behavior Profile			NS

Continued

addition, overall results were mixed: four studies reported no evidence of effectiveness, two reported beneficial effects, and one study reported mainly beneficial effects with some harmful effects. The latter effects, however, concerned one specific item only, "late for school." Studies varied greatly from one another on various aspects, including outcome measures, child's age at evaluation, the nature and duration of the intervention, and sample size. Studies reporting beneficial effects showed no specific patterns, allowing one to be able to distinguish them

TABLE 3. *Continued*

Study	Outcome	Effect size <sup>a</sup>	P value	Direction of Outcome <sup>b</sup>
Olds et al. (1986, 1998)	AT AGE 15			
	<i>Child reports</i>			
	– Running away	NA <sup>c</sup>	0.003	<i>Beneficial</i> <sup>d</sup>
	– Arrests	NA	0.03	”
	– Convictions; probation violations	NA	<0.001	”
	– Number of sex partners	NA	0.003	”
	– Days having consumed alcohol	NA	0.03	”
	– Minor antisocial acts			”
	– Major delinquent acts			NS
	– Externalizing problems			NS
	– Acting-out problems			NS
	– Incidence of times stopped by police			NS
	– Alcohol impairment			NS
	– Days using drugs			NS
		<i>Parent reports</i>		
	– Similar scales			NS
	<i>School reports</i>			
	– Incidence of short- or long-term school suspensions			NS
Scarr and McCartney (1988)	AT 45 MONTHS			
	<i>Blind examiner</i>			
	Childhood Personality Scale			NS
	Infant Behavior Record			NS
St-Pierre and Layzer (1999)	AT AGE 3, 4 AND 5			
	<i>Mother reports</i>			
	Child Behavior Checklist			NS
	– Total score			
	– Externalizing Score			
	– Internalizing Score			

<sup>a</sup> Effect-size calculations are taken from Mrazek and Brown (1999). They can be either negative or positive and their interpretation depends on the way the outcome measure is coded.

<sup>b</sup>T = total sample; B = boys; G = girls.

<sup>c</sup>Insufficient data provided to calculate an effect-size.

<sup>d</sup>The beneficial outcomes concerned only the subgroup of children of poor, young, and unmarried women.

from the other studies. In this context, it is impossible to make a definitive statement as to whether early parent training and support is effective in preventing disruptive behaviors in children and delinquency during adolescence. Thus, caution is suggested in the interpretation of the existing studies, especially in the context of policy recommendations.

Similar caution has already been expressed with respect to home visiting programs that provide an important amount of parent training. Some authors have



argued that home visits are a necessary but insufficient component of programs seeking to help families and young children (Weiss, 1993). More recently, a major review of six home visiting models that were being, or had been, implemented nationally in the U.S. concluded that results regarding the effectiveness of home visiting for a wide range of outcomes were quite modest, at the most (Gomby et al., 1999).

Several factors can contribute to these overall disappointing results (for excellent reviews of these factors, see Gomby et al., 1999; St-Pierre and Layzer, 1999). The heterogeneity in the definition of parent training and the absence of evidence regarding which components of parent training are most effective appear most relevant to our own review. The three studies reporting beneficial results varied greatly with regards to the nature of the intervention. The Elmira project (Olds et al. 1998), an intensive nurse home visitation program that emphasized parental development and was provided during the first two years of the child's life, had a significant effect on children of poor, young, and unmarried women. Several aspects of maternal functioning were promoted in addition to the competent care of the child, including maternal personal development and positive health behaviors. In addition, an important focus was put on the involvement of other family members and people in the social network.

On the other hand, the Brusselton project in Australia (Cullen, 1976) was significantly different in nature and intensity. Counselling sessions (only 20– to 30-minutes long) were provided by the same general practitioner to all mothers living in a rural community. Four sessions were provided during the first two years of life followed by two sessions per year for the next four years. Although significantly less intensive, the duration of the Brusselton intervention was three times longer than the Elmira intervention. The progress of the child formed the basis of each interview in the Brusselton study. Mothers were encouraged to accept themselves as they were and to reflect on, and eventually modify, their child-rearing practices. Finally, the third study showing beneficial effects on disruptive behaviors, the Houston project (Johnson and Breckenridge, 1982), targeted low-income Mexican-American families and combined several intervention components that all emphasized parenting skills: Home visits, family workshops, and participation in a child development center. Fathers were strongly encouraged to participate. This heterogeneity in the small number of studies showing beneficial effects underscores the fact that little information is available to guide intervention programs when they choose to target parent education. As St-Pierre and Layzer (1999) pointed out, the field of parent education targeting young families seems to suffer from a lack of evidence about what intervention components are most important, which parents are more likely to benefit from the intervention, how long it should last, and whether parent training should be combined with other intervention types.

It is of interest to note that the Brusselton and Houston studies were the only two initially designed to prevent behavior disorders, and both reported beneficial effects. This, perhaps, highlights the relevancy of developing specific models for the prevention of behavior problems rather than using general models to improve

a wide range of maternal and child outcomes. In their review of major U.S. home visiting programs targeting broad outcomes, Gomby et al. (1999) advocated a more modest view of the potential of home visiting programs. In addition, they strongly recommended the use of new models to improve the overall effectiveness of home visiting programs. We believe this recommendation is especially relevant for interventions targeting the prevention of children's disruptive behavior problems, as well as delinquency. Without any doubt, many additional studies are required in order to identify the characteristics of early parent training and support programs that can prevent the development of disruptive behavior disorders and delinquency.

Overall, caution is suggested in the interpretation of findings of research on the effectiveness of early parent training for the prevention of disruptive behavior problems in children and juvenile delinquency, due to three important considerations: (1) the limited number of adequately designed studies; (2) results of the well-designed studies available are mixed and, where positive, often modest in magnitude; and (3) very few studies (two out of seven) were specifically designed to prevent disruptive behaviors in children. Since there is good evidence from longitudinal studies that disruptive behavior starts during the pre-school years and often leads to juvenile delinquency, there is clearly a need for numerous studies to test different types of early interventions specifically designed for the prevention of disruptive behavior problems and juvenile delinquency. We believe that useful policy recommendations will be possible to establish only once additional crucial information becomes available.

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