Canadian Journal of School Psychology
28(2) 219–238

DOI: 10.1177/0829573513491061
cjs.sagepub.com
SAGE

Moms and Dads Count in a Prevention Program for Kindergarten Children With Behavior Problems

Thérèse Besnard[1], Pierrette Verlaan[1], Frank Vitaro[2], France Capuano[3], and Francois Poulin[3]

Abstract

The study measured the added effect of father participation in the parent-training component of a violence and school dropout prevention program on quality of parenting practices (from self-report and direct observation) and level of kindergarten child behavior problem (CBP; from teacher and mother report). Pre- and post-test evaluations were conducted with three groups (a) MF: both mother and father participating (n = 37); (b) M: mother only participating (n = 13); and (c) C: control group (n = 18 mother–father pairs). Maternal parenting practices improved in the MF group but deteriorated in the M and C groups, whereas paternal parenting practices remained unchanged in the MF group but deteriorated in the C group. Overall, father participation had no short-term effect on CBPs; the children in all three groups improved their behavior. Results confirm the importance of stepping up efforts to implicate both parents in prevention programs for disruptive children.

Résumé

Cette étude évalue l'effet ajouté de la participation des pères à un programme multimodale de prévention des difficultés de comportement extériorisées d'enfants de la maternelle. Trois groupes ont subi une évaluation pré-test et post-test: (a) groupe MF, les deux parents ont participé à l'intervention (n = 37); (b) groupe M, seule la mère a participé (n = 13); et (c) groupe témoin C (n = 18). Les résultats indiquent une amélioration des pratiques parentales des mères du groupe MF et une détérioration de celles des mères du groupe M, et de celles des pères et des mères

[1]Université de Sherbrooke, Sherbrooke, Québec, Canada
[2]Université de Montréal, Montréal, Québec, Canada
[3]Université du Québec à Montréal, Montréal, Québec, Canada

Corresponding Author:
Thérèse Besnard, PhD, Département de psychoeducation, Faculté d'éducation, Université de Sherbrooke, 2500 boul. de l'Universite, Sherbrooke (Québec) J1K 2R1, Canada.
Email: therese.besnard@usherbrooke.ca

du groupe C. Les enfants des 3 groupes ont amélioré leurs comportements. Ces résultats soulignent l'importance d'évaluer les pratiques parentales des pères autant que celles des mères, ainsi que les avantages à retirer des efforts mis de l'avant pour rejoindre les deux parents des enfants qui présentent des difficultés précoces de comportement.

Keywords
parenting practices, father and mother, prevention programs, behavioral difficulties, kindergarten

Introduction

Various prevention programs have been developed in an attempt to counter early onset of child behavior problems (CBPs; Wilson & Lipsey, 2007). Most of these are school-based programs that begin in kindergarten with the aim of fostering early acquisition of social skills and problem-solving techniques (Hahn et al., 2007). Many also include parent training (Powell, Lochman, & Boxmeyer, 2007), as is the case with the Incredible Years program (Webster-Stratton, Reid, & Hammond, 2004) or the Fluppy Program (Capuano et al., 2010). According to Sameroff's transactional model (Sameroff & Mackenzie, 2003), parent training aims to improve the quality of the parent–child relationship by teaching parents how to manage their child's behavior more effectively. This in turn is supposed to help diminish CBP. Numerous studies (Kaminski, Valle, Filene, & Boyle, 2008; Lundahl, Risser, & Lovejoy, 2006) have confirmed the short- and long-term efficacy of parent training in modifying parenting practices and CBP.

Supported by recent evidence of the positive influence of fathers on children's behavior (Lamb, 2004; Lewis & Lamb, 2003; Paquette, Carbonneau, Dubeau, Bigras, & Tremblay, 2003), practitioners have tried increasing father involvement in early childhood programs and encouraging the participation of both parents (Palm & Fagan, 2008; Tiano & McNeil, 2005). In this regard, a recent meta-analysis concluded that preventive programs were effective in improving father's involvement and attitude and child's behavior (Holmes, Galovan, Yoshida, & Hawkins, 2010). Also, programs where both parents participated were generally more effective in enhancing parenting practices and improving CBP than were programs involving only mothers (Lundahl, Tollefson, Risser, & Lovejoy 2008). However, mothers seemed to benefit more than fathers did from parent training.

To our knowledge, only four studies ever directly assessed the added value of father involvement by comparing a mother-only condition against a dual-parent one in the same program. Three evaluated the added effect of father participation, one in a universal prevention parenting program (Hahlweg, Heinrichs, Kuschel, Bertram, & Naumann, 2010) and two in the treatment of oppositional defiant disorder (Bagner & Eyberg, 2003; Webster-Stratton, 1985). Although these studies concluded that participation by both parents yielded more consistent and longer term effects than

did participation by mothers only, three significant limitations must be pointed out. First, these studies compared program effects between single-parent and dual-parent families without a control group. Second, the studies evaluated program effects on maternal parenting practices only. The absence of paternal parenting practice measurements did not allow verifying program effects on this variable or its mediating effect on child behavior. Third, none of the three studies considered parental characteristics or quality of marital relationship in their analyses. In this regard, it has been argued that factors such as maternal depression or marital difficulties might account for the differential effects of single- and dual-parent participation in parent training (Dishion & McMahon, 1998; Goeke-Morey & Cummings, 2007). The fourth study reviewed (Cowan, Cowan, Pruett, Pruett, & Wong, 2009) compared the impact of father-only and dual-parent participation in a prevention program with no mother-only condition.

Against this backdrop, we undertook to determine whether dual-parent participation in a prevention program targeting CBP improved the quality of each parent's parenting practices and diminished CBP, compared with mother-only participation. Parenting practices comprise the different means parents adopt in order to educate and socialize their children (Parke & Buriel, 1998), the type of limit setting they exert over the child (Patterson, 2002), as well as the quality of emotions they express to their child (Boyum & Parke, 1995). These dimensions are generally assessed with regard to maternal parenting practices and are known to be significant correlates of CBP. Our aim also was to examine parenting practices that relate in particular to paternal child-rearing styles, such as involvement, autonomy support, and quality of instructions imparted (Leaper, Anderson, & Sanders, 1998; National Institute of Child Health and Human Development, 2004; Pleck, 1997). To avoid uncontrolled confounds, only two-parent families were used in the study across three conditions: (a) Mother–Father (MF) in which both parents participated in the parent training; (b) Mother only (M) in which only the mother participated; and (c) Control (C) group where neither parent participated in the training. Given that earlier studies had revealed problems due to intergroup differences on family characteristics, family income, marital harmony and parental depression were included in the analyses as covariates.

Specifically, we sought to verify the following three hypotheses:

Hypothesis 1 (H1): Fathers participating in parent training would show significantly greater improvement in parenting practices between pre- and post-test than would fathers who did not participate.

Hypothesis 2 (H2): Mothers participating in the parent training with fathers would show significantly greater improvement in parenting practices between pre- and post-test than would mothers who did not participate and mothers who participated alone in the training.

Hypothesis 3 (H3): CBP in the group where both parents participated would show a significant decrease between pre- and post-test, compared with the other groups.

Method

Participants and Procedures

Participants were selected from the original sample of a research project aimed at assessing the impact of the Fluppy program, a violence and dropout prevention program implemented throughout the Québec kindergarten network (Capuano et al., 2010). Participants were recruited from 2002 to 2005 in three successive annual waves of kindergarten children in the Montréal area. During these 3 school years, parents and teachers were solicited to participate in an activity aimed at screening for CBP (for details see Poulin, Capuano, Vitaro, & Verlaan, 2006). Because children who exhibit CBP in multiple contexts are considered at highest risk for future maladjustment (Lochman & PPPRG, 1995), a two-pronged criterion was used to target CBP both at home and at school. In all, 663 children (17.6%) were found to be at risk. As a function of available resources, 353 children and their families were chosen at random to participate in the study. Of these, 330 agreed (93.5%). The study used a pre- and post-test experimental design. The 330 students were randomly divided into five groups corresponding to the five distinct intervention conditions of the original broader research project. The conditions were put forth in such a way as to evaluate the effect of different combinations of prevention strategies: (a) control group; (b) classroom workshops promoting social skills (i.e., universal component); (c) universal component plus parent training and teacher support; (d) universal component plus parent training, teacher support and enriched academic curriculum; and (e) universal component plus academic component without parent training.

For the purposes of our study, only dual-parent families who completed the evaluations were retained. Three groups were created based on the application of the program conditions. First, all children whose families participated in the parent-training component (i.e., conditions *c* and *d*) were grouped together and subsequently subdivided into two quasi-experimental groups on the basis of father participation. This grouping was possible because no significant difference emerged between the two groups at either pretest or posttest in terms of each parent's practices and CBP. The first group was composed of children whose two parents participated in parent training (MF group: $n = 37$ child–father–mother triads). The second group comprised children whose mother alone participated (M group: $n = 13$ child-mother dyads). It should be noted that in all cases the two parents were invited to take part. In the M group, the mother alone agreed or was available. Finally, the control group was made up of children whose two parents did not participate in parent training (C group: $n = 18$ child–father–mother triads). All children received the universal component. The final sample was composed of 68 children (49 boys, 19 girls) with a mean age of 68.2 months ($SD = 3.5$). Most of the parents (71.6% of mothers and 55.7% of fathers) had a college or university education. Families had a mean income of $58,000 ($SD$ = $24,700). According to official provincial statistics (Institut de la statistique du Québec, 2003), participant socioeconomic level was below average for dual-parent families living in the Montréal area (M = $69,467). The majority of families were of Canadian origin (86.6%).

Evaluations were carried out on participating families before and after the parent training. Parenting practices were evaluated based on a self-report questionnaire and on third-party observations during a 20-min directed laboratory task. CBP was evaluated by means of questionnaires completed by parents and teachers. Those for teachers were distributed and recovered by research assistants; those for parents were brought home by the children and returned to teachers in a sealed envelope. Parents were invited to fill out the questionnaire separately. However, as just over half of the fathers completed the questionnaire, only data collected from mothers were used for the purposes of our study in regard to CBP.

Description of Parent Training. The parent training took place from January to May of the same year. The goals of the intervention were: (a) to increase parent understanding of their child's needs; (b) to improve parental competencies; (c) to reduce parental stress, and (d) to offer parents social support. The first session established contact with the parents and introduced the program. The child's behavior problems at home and at school were discussed. The second session consisted of a visit to the lab, where a parent-child play interaction was videotaped. The videotapes were analyzed by the practitioners to identify problematic transactional patterns in the parent–child dyads. During the third session, the videotapes were played back to the parents for them to see how they interacted with their child and also to highlight the potentially conflicting relational patterns of everyday life. Finally, the practitioners and the parent defined the skills that would require improvement over the course of the upcoming sessions. Subsequent sessions focused on five topics or activities: (a) a parent–child play period with the aim of improving the quality of the relationship; (b) educational child development issues; (c) coaching for daily behavior modification strategies; (d) the connection between the child's behavior at school and at home; and (e) social support. (See Poulin, Capuano, Vitaro, & Verlaan, 2009, for a description of other components).

Program Fidelity. The fact that the interventions took place in a natural environment and were applied by professionals working in the field implies that the evaluation was based on the effectiveness of the program and not on its efficacy (Dodge, 2001). Initially the Fluppy program was designed to consist of 12 to 20 sessions (Poulin et al., 2009); however, owing to budgetary constraints, only six sessions were implemented. The six 2-hr sessions were staggered over a period of four months and took place in the family home. The educational psychologists responsible for the parent training were trained and supervised by the fourth author. On average, the parents participated in 5.84 (SD = .34) sessions, and there was no significant difference between the MF and M groups as to number of sessions attended by parents.

Measures

Observation of Parental Child-Rearing Practices. Father– and mother–child interactions were observed during a 20-min laboratory task. Pre- and post-test standardized situations were proposed to both parents. The situations involved a semistructured game whose

degree of difficulty was too high for the child's level of development. Consequently, the child required parental assistance in order to accomplish the tasks. The task proposed to the mother–child dyads was *Going to the Store*, which consisted in planning three shopping itineraries to pick up 3, 5, and 7 items as efficiently as possible in a miniature three-dimensional grocery store (Dumas & LaFreniere, 2000). The pretest task for the father-child dyads consisted in assembling a Lego model. For the posttest situations, the games were changed somewhat to maintain a degree of novelty and interest for the children. For the mother-child dyads, the task was a variation on the grocery-shopping game (different instructions); for the father-child dyads, it was a 48-piece jigsaw puzzle.

The coding system proposed to evaluate maternal and paternal parenting practices was a five scale macroanalytical procedure adapted from LaFreniere and Capuano (1997). The coders rated the video observation overall on each scale. To minimize participant reactivity, only the last 15 min were coded. Each scale was rated from 1 to 7, with 1 (*the negative anchor*) and 7 (*the positive anchor*). The scales covered parenting practices known to be significant for both fathers and mothers: expression of emotions (negative vs. positive), degree of availability (nonavailability vs. high availability to child), autonomy support (induction of doubt vs. encouragement to be autonomous), quality of instructions/communication (absence or presence of directions and modeling) and quality of parental control (permissive or excessive control vs. appropriate requests). Three observers (graduate psychoeducation students) received 35 hr' training in the application of the coding system. They were supervised once a week for 2 hr during 16 weeks to ensure consistency. Overall, 246 videotapes were coded and interrater agreement was established based on 21% of these. The percentage of agreement was calculated by relating the number of agreements (one point or less of deviation) to the total number of disagreements. In cases where the results deviated by more than one point, the tape was handed to a third observer who would render a final judgment. The percentage of agreement thus calculated varied from 82.1% to 91.7%. The correlations between scales varied from .30 to .70 for mothers and from .26 to .86 for fathers.

Parenting Practices. Parenting practices were evaluated with a 42-item questionnaire. The measure was designed by grouping scales from three different instruments: the Alabama Parenting Questionnaire (Shelton, Frick, & Wooton, 1996), the Parenting Practices Inventory (Lochman & PPPRG, 1995), and the Parental Acceptance-Rejection Questionnaire (Rohner, Chaille, & Rohner, 1980). Six scales were used: parent involvement with child (10 items), use of positive educational practices (5 items), sense of self-efficacy at time of imposing discipline (6 items), parenting practice inconsistencies (6 items), use of hostile educational practices including corporal punishment (6 items), and affective rejection (9 items). Each parent completed the questionnaire independently. The choice of answers ranged from 1 (*not at all*) to 5 (*completely*). A mean score was calculated for each scale. For our sample, the internal consistency of the scales was satisfactory for mothers ($\alpha = .60$ to .79) and fathers ($\alpha = .63$ to .82). The correlations between scores on the observation scales and the child-rearing rating assessed through self-report varied from .00 to .27. The modest correlations demonstrated that the two types of measures were complementary and provided different information about parenting practices.

CBPs. Both mother and teacher completed identical versions of a 75-item Likert-type questionnaire adapted from the Preschool Behavior Questionnaire to measure CBP (Tremblay, Vitaro, Gagnon, Piché, & Royer, 1992). Informants had to indicate frequency of certain behaviors on a scale of 1 (*never*) to 6 (*often*). However, for the purposes of our study, only the dimensions relating to externalized problems were used: indirect aggression (5 items), physical aggression (10 items), opposition (6 items), and hyperactivity (11 items). These items were grouped in such a manner as to obtain a single average score ranging from 1 to 6. The internal consistency of the composite scale was high (.94 for parents, .97 for teachers). The correlation between teacher and parent ratings was moderate, as expected, $r = .37$, $p < .01$.

Parental Depression. Self-reported depressive feelings were evaluated for both parents using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The questionnaire's 20 items are rated on a Likert-type 4-point frequency scale ranging from "*never or rarely*" to "*always*". The instrument has an internal consistency of .85 for the general population.

Spousal Agreement. Quality of spousal agreement between parents was evaluated by means of the Dyadic Adjustment Scale (Spanier, 1989). This 32-item questionnaire serves to evaluate level of agreement or disagreement with spouse or frequency of activities undertaken together. This instrument allows measuring four dimensions of the spousal relationship, namely, degree of consensus (13 items), spousal satisfaction (10 items), interspouse cohesion (5 items), and expression of affection (4 items). The instrument has an internal coherence of about .90 according to various studies and good reliability (.96) after 11 weeks.

Analytical Strategies

First, the equivalence of the three groups at pretest was verified with respect to variables known to be connected to CBP (Toupin, Déry, Pauzé, Mercier, & Fortin, 2000). Second, multivariate analyses (MANCOVA) were run to detect main effects. The first sets of analyses covered variables for which data were available for all three groups (maternal parenting practices and CBP). A second set of analyses examined paternal parenting practices, as these data were available for only two of the three groups (MF and C). All the comparative analyses took into account family socioeconomic status, parental depression and quality of spousal relationship as covariates. Third, a series of univariate analyses of variance (ANCOVA) were run separately for each parenting practice. Finally, *t* tests were used to compare each group's mean scores at pre- and post-test.

Results

By way of preliminary analyses, the equivalence of the three groups was verified at pretest (see Table 1). Results indicated significant intergroup differences on: family

Table 1. Comparisons Across the Three Groups on the Control Variables.

	C group (n = 18)	M group (n = 13)	MF group (n = 37)	χ^2 ANOVA F
Child sex Girl %	16	46	27	3.29
CBP				
Teacher (*SD*)	3.04 (0.85)	2.90 (0.78)	2.98 (0.70)	0.10
Mother (*SD*)	2.66 (0.56)	2.57 (0.36)	2.91 (0.51)	2.86
Child age				
Mean (*SD*)	5.61 (0.29)	5.77 (0.31)	5.68 (0.29)	1.03
Previous schooling				
Mean (*SD*)	52.9 (9.3)	56.2 (7.2)	53.1 (10.6)	0.57
Mother's years of schooling				
Mean (*SD*)	14.1 (2.8)	13.1 (3.5)	14.4 (2.4)	2.85
Father's years of schooling				
Mean (*SD*)	12.9 (2.6)	12.5 (3.0)	14.1 (3.2)	2.10
Family income ($)	57,200	36,200	66,600	
Mean (*SD*)	(21,370)	(27,850)	(20,140)	9.52***
Spousal relationship according to mothers				
Consensus	0.80 (0.39)	0.74 (0.37)	0.85 (0.41)	0.40
Spousal satisfaction	1.11 (0.33)	1.28 (0.29)	1.25 (0.44)	0.97
Cohesion	2.96 (0.54)	2.78 (0.73)	3.17 (0.37)	3.18*
Affection	0.86 (0.32)	0.67 (0.19)	0.72 (0.39)	1.48
Spousal relationship according to fathers				
Consensus	0.79 (0.27)	0.89 (0.22)	0.83 (0.32)	0.47
Spousal satisfaction	1.08 (0.25)	1.16 (0.17)	1.22 (0.37)	1.17
Cohesion	3.12 (0.45)	3.30 (0.25)	2.99 (0.36)	3.54*
Affection	0.72 (0.22)	0.90 (0.23)	0.85 (0.36)	1.54
Depression				
Mother	8.33 (3.25)	11.1 (7.66)	5.25 (3.93)	6.21**
Father	5.22 (4.11)	5.42 (8.28)	4.19 (4.25)	0.39

Note: CBP = child behavior problem; C group = control group; M group = mother only participating; MF group = both mother and father participating.
*p < .05. **p < .01. ***p < .000.

income, M < MF and C, $F = 9.52$, $p < .000$, cohesion according to mother, M and C < MF, $F = 3.18$, $p = .048$, cohesion according to father, M and C > MF, $F = 3.54$, $p = .035$, and maternal depression, M > MF and C, $F = 6.21$, $p = .032$. Significant intergroup differences were also observed in terms of maternal parenting practices as measured by the questionnaire (see Table 2), namely: involvement, MF > M, $F = 3.69$, $p = .030$; inconsistencies, M > C, $F = 3.51$, $p = .036$; and affective rejection, M > C, $F = 4.47$, $p = .015$. Consequently, these variables were considered covariates in the analyses. No other differences emerged on any of the other child and parent variables.

Table 2. Scores at Pre- and Post-Test for Maternal Parenting Practices for All Groups and Comparisons Across Groups (n = 68).

Maternal parenting practices	C group *M* (*SD*)	M group *M* (*SD*)	MF group *M* (*SD*)	*F*
Observed				
Emotions				
Pretest	5.28 (1.14)	5.38 (0.94)	5.08 (1.08)	0.46
Posttest	4.61 (1.24)	4.85 (0.83)	5.20 (1.02)	2.05
Availability				
Pretest	5.67 (1.03)	5.58 (0.95)	5.54 (0.98)	0.10
Posttest	5.22 (1.17)	5.38 (0.87)	5.70 (0.74)	1.92
Autonomy				
Pretest	5.06 (1.06)	5.38 (0.74)	4.81 (1.16)	1.45
Posttest	4.36 (1.22)	4.81 (1.03)	5.12 (1.17)	2.62
Instructions				
Pretest	4.97 (1.22)	5.42 (0.91)	5.09 (1.02)	0.72
Posttest	4.78 (1.11)	5.38 (0.77)	5.27 (1.02)	1.85
Control				
Pretest	4.92 (1.50)	5.00 (1.00)	4.42 (1.43)	1.27
Posttest	4.56 (1.29)	4.92 (1.19)	5.05 (1.27)	0.95
Questionnaire				
Involvement				
Pretest	3.92 (0.48)	3.66 (0.66)	4.11 (0.48)	3.69*
Posttest	3.81 (0.66)	3.95 (0.52)	4.00 (0.43)	0.78
Positive practices				
Pretest	4.58 (0.38)	4.48 (0.55)	4.61 (0.24)	0.41
Posttest	4.55 (0.53)	4.52 (0.60)	4.67 (0.38)	0.63
Self-efficacy				
Pretest	3.08 (0.56)	3.05 (0.90)	3.12 (0.67)	0.07
Posttest	3.49 (0.78)	3.27 (0.93)	3.30 (0.65)	0.45
Inconsistencies				
Pretest	2.14 (0.50)	2.58 (0.44)	2.21 (0.49)	3.51*
Posttest	2.27 (0.58)	2.87 (0.65)	2.20 (0.50)	6.85**
Hostile practices				
Pretest	1.44 (0.27)	1.67 (0.44)	1.60 (0.39)	1.60
Posttest	1.55 (0.35)	1.67 (0.43)	1.51 (0.40)	0.73
Affective rejection				
Pretest	1.36 (0.17)	1.65 (0.45)	1.44 (0.23)	4.46*
Posttest	1.42 (0.24)	1.55 (0.42)	1.39 (0.28)	1.36

Note: C group = control group; M group = mother only participating; MF group = both mother and father participating.
*p < .05. **p < .01. ***p < .000.

Tables 2 and 3 give the mean scores and standard deviations obtained at pre- and post-test for each dimension of maternal and paternal parenting practices as perceived by the parents themselves and as coded by independent observers.

Table 3. Scores at Pre- and Post-Test for Paternal Parenting Practices of All Groups and Comparisons Across Groups (n = 55).

Paternal parenting practices	C group *M* (*SD*)	MF group *M* (*SD*)	*F*
Observed			
Emotions			
Pretest	4.92 (0.73)	5.16 (0.97)	0.90
Posttest	4.72 (0.97)	5.24 (0.73)	4.92*
Availability			
Pretest	5.05 (1.46)	4.95 (1.59)	0.06
Posttest	4.19 (1.45)	5.11 (1.27)	5.69*
Autonomy			
Pretest	4.92 (0.97)	5.03 (1.27)	0.10
Posttest	4.69 (0.89)	5.16 (1.01)	2.80
Instructions			
Pretest	4.64 (1.43)	4.88 (1.50)	0.32
Posttest	3.92 (1.22)	4.86 (1.42)	5.89*
Control			
Pretest	4.58 (1.52)	4.89 (1.43)	0.54
Posttest	4.31 (1.43)	4.89 (1.26)	2.39
Questionnaire			
Involvement			
Pretest	3.82 (0.63)	3.77 (0.67)	0.06
Posttest	3.95 (0.68)	3.61 (0.68)	2.32
Positive practices			
Pretest	4.59 (0.71)	4.49 (0.51)	0.24
Posttest	4.41 (0.67)	4.40 (0.48)	0.10
Self-efficacy			
Pretest	3.40 (0.71)	3.15 (0.71)	1.20
Posttest	3.58 (0.57)	3.43 (0.54)	0.75
Inconsistencies			
Pretest	2.29 (0.50)	2.24 (0.48)	0.13
Posttest	2.07 (0.45)	2.27 (0.55)	1.40
Hostile practices			
Pretest	1.43 (0.33)	1.61 (0.42)	2.03
Posttest	1.25 (0.22)	1.46 (0.33)	4.60*
Affective rejection			
Pretest	1.37 (0.39)	1.47 (0.29)	0.90
Posttest	1.31 (0.19)	1.38 (0.24)	0.80

Note: C group = control group; MF group = both mother and father participating.
*p < .05. **p < .01. ***p < .000.

Differences Between Fathers

First, intergroup differences were examined in terms of self-reported and observed paternal parenting practices, while controlling pretest differences in family income,

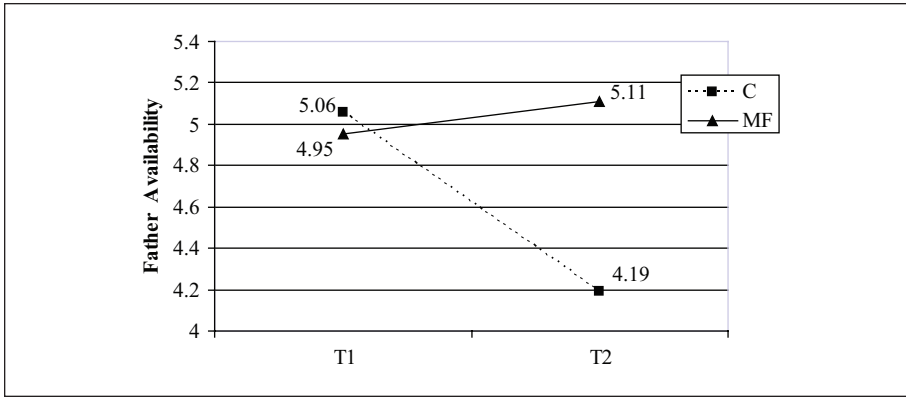

Figure 1. Quality of father availability over time and between groups.

maternal depression and spousal relationship. A 2 × 2 MANCOVA (Group × Time) revealed no significant differences regarding family income, quality of spousal relationship, and group or time effects for any of the dependent variables. However, a Group × Time interaction proved significant for observed parenting practices, indicating that the two groups (C and MF) evolved differently from pre- to post-test, *Pillai's Trace* = 0.08, $F(1, 49) = 4.20$, $p = .046$, ES = .10. As shown in Figure 1, the only significant effect to emerge pertained to father availability, $F(1, 53) = 6.20$, $p = .016$, ES = .11. Comparing pre- and post-test scores for each group revealed that the effect was due to a significant decline in father availability in the C group, $t = 2.31$, $p = .033$, 95% CI [0.08, 1.65], ES = .49.

Differences Between Mothers

A set of 3 × 2 MANOVA (Group × Time) was carried out to evaluate maternal parenting practices. As was the case with fathers, no main effect emerged. However, a Group × Time interaction proved significant for observed parenting practices, indicating that the three groups evolved differently from pre- to post-test, *Pillai's Trace* = .10, $F(2, 61) = 3.38$, $p = .040$, ES = .10. The results of a series of ANOVAs revealed significant interactions on the scales measuring quality of emotions, $F(2, 65) = 3.01$, $p = .05$, ES = .07, autonomy support, $F(2, 65) = 3.68$, $p < .031$, ES = .10, and maternal control, $F(2, 65) = 3.34$, $p < .042$, ES = .09. When pretest differences were controlled, results indicated a significant difference also regarding self-reported maternal parenting inconsistencies, $F(2, 61) = 4.22$, $p = .019$, ES = .12. As illustrated in Figures 2 to 5, the post hoc tests showed that mothers in the C group expressed more negative emotions toward their children during the observation session at posttest than at pretest, $t = 2.18$, $p = .043$, 95% CI [0.02, 1.31], ES = .47. Mothers in the MF group improved with respect to quality of control, $t = -2.51$, $p = .017$, 95% CI [1.15, 0.12], ES = .39, and those in the M group showed a significant decrease in autonomy support from pre- to

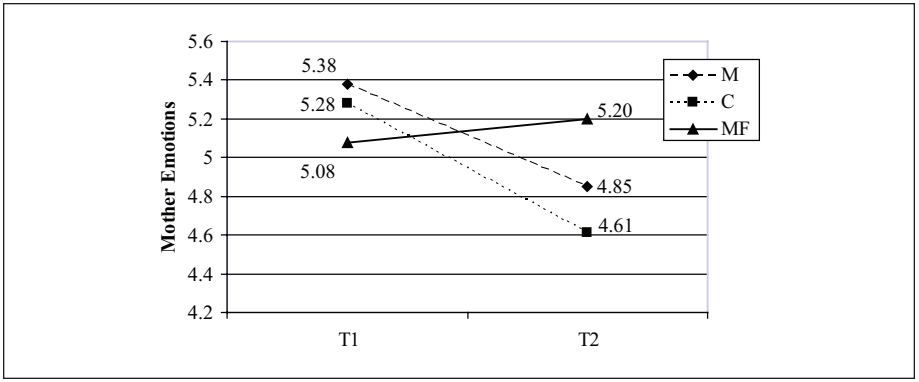

Figure 2. Quality of maternal emotions over time and between groups.

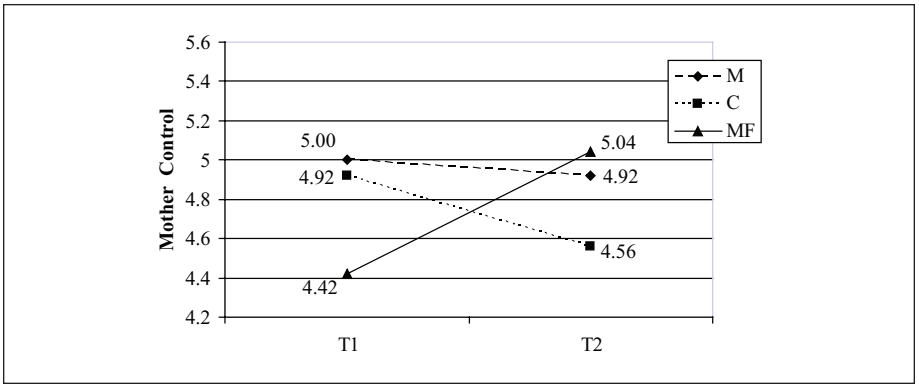

Figure 3. Quality of maternal control over time and between groups.

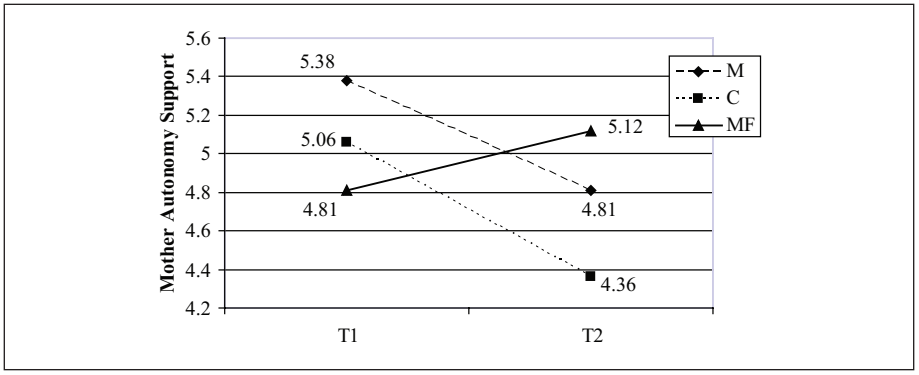

Figure 4. Maternal autonomy support to child over time and between groups.

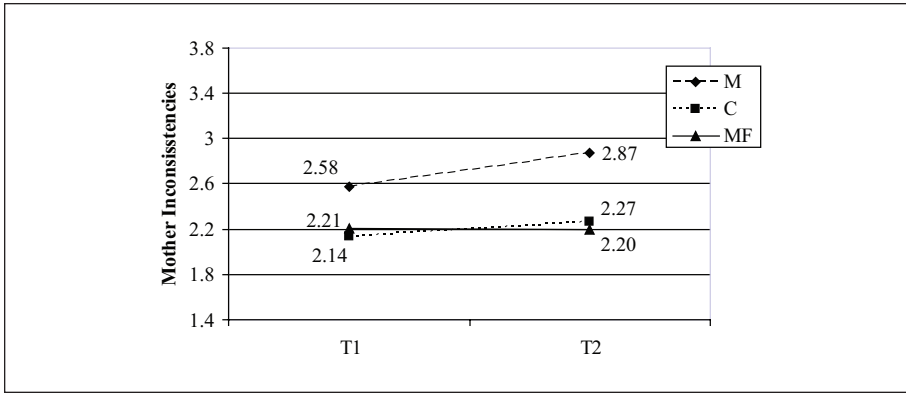

Figure 5. Mother inconsistencies over time and between groups.

post-test, $t = 2.48$, $p = .029$, 95% CI [−1.10, 1.77], ES = .58. Finally, no significant intergroup differences emerged for parenting inconsistencies.

Differences Between Children

With regard to CBP, the analyses yielded no significant group effect, $F(2, 61) = 0.47$, *ns*, or Group × Time interaction, $F(2, 61) = 0.07$, *ns*, on the basis of mother or teacher reports. However, a time effect was noted, $F(1, 61) = 80.17$, $p < .000$, ES = .57, which showed CBP in the three groups decreased from pre- to post-test.

Discussion

The purpose of our study was to test the effectiveness of parent training when both parents took part in the intervention, compared with when only mothers participated. In doing so, we sought to remedy the methodological limits of earlier research that were raised in the literature review. For example, we measured parenting practices with as much consideration for fathers as for mothers, based on both self-report and independent third-party observation. Dimensions selected to measure parenting practices covered aspects related to mothers as well as other aspects more closely connected to fathers. Moreover, statistical controls were carried out at the level of socioeconomic status, parental depression, and spousal agreement so as to gauge the impact of these variables on maternal and paternal parenting practices, respectively.

Parent Perception Versus Actual Parenting Practices. Results indicate a change in observed parenting practices but parents themselves perceived no change in their behavior, except as regards maternal parenting inconsistencies. Various works have clarified the links between severity of CPB and parental sense of self-competency with respect to

parental role (Hill & Bush, 2001; Jones & Prinz, 2005). Parental education programs for parents of children with CBP should seek to improve these aspects at all costs, in addition to modifying parent behavior (Webster-Stratton et al., 2004). It would be interesting to see whether the changes in the parents' actual child-rearing practices influence their self-perception over the long term.

Effect on Mothers and Fathers. The results indicate that the parent training had differential effects on fathers and mothers. Mothers in the three groups differed over time on three dimensions of parenting practices: quality of emotions, autonomy support, and control. Where fathers are concerned, results indicate only one effect regarding reduced degree of availability in the C group. Results point in the same direction as Lundahl et al. (2008), to the effect that parent training has a greater effect on mothers than on fathers. However, this finding might be undermined by various factors. First, few tools have been specifically developed to assess paternal parenting practices; their lack of refinement in this regard may unduly influence their assessment of fathers (Pettit, Bates, & Dodge, 1993). Furthermore, little is known about father-specific dimensions associated with CBP whereas those specific to mothers are more established (Besnard, Verlaan, Capuano, Poulin, & Vitaro, 2011). Second, results may be accounted for by the different tasks for fathers and mothers. The grocery-store game is a validated observational task frequently used to evaluate maternal parenting practices (Dumas & LaFreniere, 2000). A similar validated observational task was not available for fathers. Therefore, the jigsaw puzzle and the Lego task might not highlight the relational capacities of fathers as clearly. Also, activities of the sort are more common among children, they have fewer rules to follow and do not require the assimilation of as much information as the grocery-store game.

Hypothesis 1. Contrary to expectations, the parenting practices of fathers who participated in the parent training did not improve. However, the parenting practices of fathers who did not receive training worsened, particularly as regards quality of availability to child. These results validate the recommendations of Coplin and Houts (1991), who stressed the importance of obtaining data on the parenting practices of fathers so as to determine whether they benefit from programs. These results confirm the importance of control groups as pointed out in the literature review. Our results demonstrate maintenance of an already high level of paternal availability while a significant deterioration was quantified in the control group. Therefore, the parent training had a preventive effect on the decreasing availability of fathers for children over time. As all the children in this study were identified as exhibiting CBP at pretest and in accordance with the transactional model, it is not surprising that a breakdown in parenting practices was observed in families that did not receive the intervention. It is acknowledged that presence of CBP can over the long term have a negative effect on parenting practices (Combs-Ronto, Olson, Lunkenheimer, & Sameroff, 2009). In this regard, the aim of the targeted preventive intervention under study is precisely to stop deterioration of families presenting accrued risks.

Hypothesis 2. With regard to maternal parenting practices, the analyses revealed major differences across the three groups. First, results indicate that mothers in the MF group made greater use of approval and congratulations and established a more effective partnership with the child. Moreover, results showed considerable deterioration in the M group with regard to autonomy support, indicating that mothers were more critical of their children's initiatives, generated more doubt in the children, and encouraged children to depend on them. Significant deterioration was also observed from pre- to post-test in the C group concerning quality of emotions expressed by mothers during exchanges with children.

While we established that there was a preventive effect when both parents participated in the intervention, the deterioration noted when mothers participated alone is more difficult to explain. One assumption regards the length of the intervention; six sessions might have been sufficient when both parents participated but not so when only the mother did. According to Horton (1984), when both parents take part in an intervention, they can encourage and support each other in the practical application of what they learn. Instead, mothers who participate in an intervention unaccompanied might have greater difficulty applying new knowledge when interacting with their children. A second conjecture has to do with the characteristics of the groups, which suggest that we might be dealing with different family structures. Families in the MF and C groups had almost double the income of those in the M group even though all were dual-parent families and had an equivalent level of schooling. The income differential and the fact that only the mother agreed to participate in the intervention suggests that, in M group families, one parent (the father) worked outside the home and the mother was the one primarily responsible for child rearing. We might suspect also that M group families embraced a more traditional view of parental roles and that these fathers might in some cases have opposed or boycotted attempts by the mother to introduce change (Johnson, 2003). As a third and last possibility, while the program had a preventive effect on MF group families, it may also have slowed the evolution of difficulties for mother in M group. It would be interesting in future to examine this hypothesis by forming a control group of dual-parent families in which fathers decline to participate.

Hypothesis 3. As for our hypothesis regarding CBP, the analyses revealed no significant differences owing to father participation in the intervention. Various reasons might explain this. First, the theoretical model on which the parent-training component of the program is based suggests that observed improvements in terms of parenting practices should ultimately translate into improvements in child behavior. However, we might wonder whether the low intensity of the intervention and the modest changes observed in parenting practices are enough to actually have an impact on child behavior. In this regard, other studies have indicated the need for higher intensity interventions. For example, in the study by Webster-Stratton et al. (2004), parents took part in 23 group meetings, each two hours long. Bagner and Eyberg (2003), for their part, reported that the PC-IT required from 12 to 18 sessions for parents to master the practices taught and for their children to no

longer be considered problem cases. All this suggests that early intervention must be sufficiently intense in order to modify CBP and deflect the developmental path of young children. Another reason that might account for the nonsignificant results regarding CBP is the fact that all groups of children who participated in the school-based component showed a medium effect size over time regarding CBP; the little number of participants in each group might mask the statistical add effect of father participation.

Limitations. The study has many strengths but also several limitations. First, as our intention was to isolate the added effect of father participation, only dual-parent families from the initial Fluppy program sample were selected. This meant that these families presented fewer risk factors (e.g., single-parent family, lower family income) than did others with children with behavior problems. Consequently, our results must be interpreted with caution and cannot be generalized to all families. Second, our study is based on a quasi-experimental design whereby families were randomly distributed across the experimental and control groups, but the experimental groups were constituted on the basis of the voluntary participation of one or both parents. Ideally, the unique effect of father participation should have been tested through random assignment across all three groups. However, as our study demonstrated, this is difficult to achieve in the field when mothers and fathers are free to decide whether to participate and few fathers actually end up doing so after being randomly assigned. Under the circumstances, the methodology adopted for our study represents a good, realistic alternative to total random assignment, which would likely prove unreliable in the end owing to high father attrition.

In conclusion, preventive programs that promote the development of positive parenting practices, such as Fluppy, seem more effective and allow bringing about a faster change in parenting practices if both parents participate. Although measurements were probably taken too soon after the intervention to observe any consequent change in CBP, our results show that the parent training has a beneficial effect on parenting practices. These results carry interesting implications for intervention particularly in that they confirm the importance of stepping up efforts to implicate both parents in prevention programs for disruptive children. Indeed, the results also confirm the importance of conducting targeted interventions early on in order to prevent an increasingly problematic parent–child relationship from taking root.

Looking forward, this study underscores the importance of continuing to develop instruments of measurement that better take into account the specificities of paternal parenting practices. Furthermore, it would be interesting to extend the research timeframe and to check whether father participation supports the longer-term maintenance of changes observed in the family. Longitudinal data would also make it possible to verify whether changes in the parenting practices of both parents translate into improved child behavior. Lastly, in future, it would be interesting to randomly distribute dual-parent families who wish to take part in research into two groups, namely, one where the mother alone undergoes parent training and the other where both parents do.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was made possible through the financial support granted the first author by the Fonds québécois de la recherche sur la société et la culture (FQRSC), the Groupe de recherche sur les inadaptations sociales de l'enfance (ARUC GRISE), the Université de Sherbrooke, and thanks to financial backing received by the other authors from the Fondation Lucie et André Chagnon, the Social Sciences and Humanities Research Council (SSHRC), the FQRSC, the Canadian Institutes of Health Research (CIHR), the Canadian Council on Learning (CCL), the Conseil québécois de la recherche sociale (CQRS), the Commission scolaire de Laval, the Agence des réseaux locaux de services de santé et de services sociaux de Laval, the Centre de santé et de services sociaux de Laval and the Centre de psychoéducation du Québec.

References

Bagner, D. M., & Eyberg, S. M. (2003). Father involvement in parent training: When does it matter? *Journal of Clinical Child and Adolescent Psychology*, *32*, 599-605.

Besnard, T., Verlaan, P., Capuano, F., Poulin, F., & Vitaro, F. (2011). Les pratiques parentales des parents d'enfants en difficultés de comportement: Effets de la dyade parent-enfant [Parenting practices of parents of children with behavior problems: Effects of the parent-child dyad]. *Canadian Journal of Behavioural Science*, *43*, 254-266.

Boyum, L., & Parke, R. (1995). The role of family emotional expressiveness in the development of children's social competence. *Journal of Marriage and the Family*, *57*, 593-608.

Capuano, F., Vitaro, F., Poulin, F., Verlaan, P., Vinet, I., & CPÉQ. (2010). The Fluppy program: History and dissemination in Quebec. *Revue de Psychoéducation*, *39*(1), 1-26.

Combs-Ronto, L. A., Olson, S. L., Lunkenheimer, E. S., & Sameroff, A. J. (2009). Interactions between maternal parenting and children's early disruptive behavior: Bidirectional associations across the transition from preschool to school entry. *Journal of Abnormal Child Psychology*, *37*, 1151-1163.

Coplin, J. W., & Houts, A. C. (1991). Father involvement in parent training for oppositional child behavior: Progress or stagnation? *Child & Family Behavior Therapy*, *13*(2), 29-51.

Cowan, P. A., Cowan, C. P., Pruett, M. K., Pruett, K., & Wong, J. J. (2009). Promoting fathers' engagement with children: Preventive interventions for low-income families. *Journal of Marriage and Family*, *77*, 663-679.

Dishion, T. J., & McMahon, R. J. (1998). Parental monitoring and the prevention of child and adolescent problem behavior: A conceptual and empirical formulation. *Clinical Child Family Psychology Review*, *1*, 61-75.

Dodge, K. A. (2001). The science of youth violence prevention: Progressing from development epidemiology to efficacy to effectiveness to public policy. *American Journal of Preventive Medicine*, *20*, 63-70.

Dumas, J. E., & LaFreniere, P. J. (2000). "Going to the store": An observational measure of parent-child interactions for preschoolers. In K. Gitlin-Werner, A. Sandgrund & A. Schaefer (Eds.), *Play diagnosis and assessment* (pp. 401-416). New York, NY: John Wiley.

Goeke-Morey, M. C., & Cummings, E. M. (2007). Impact of father involvement: A closer look at indirect effects models involving marriage and child adjustment. *Applied Development Sciences*, *11*, 221-225.

Hahn, R., Fuqua-Whitley, D., Wethington, H., Lowy, J., Crosby, A., Fullilove, M., & Dahlberg, L. (2007). Effectiveness of universal school-based programs to prevent violent and aggressive behavior: A systematic review. *American Journal of Preventive Medicine*, *33*(Supplement 2), S114-S129.

Hahlweg, K., Heinrichs, N., Kuschel, A., Bertram, H., & Naumann, S. (2010). Long-term outcome of a randomized controlled universal prevention trial through a positive parenting program: Is it worth the effort? *Child & Adolescent Psychiatry & Mental Health*, *4*, 14.

Hill, N. E., & Bush, K. R. (2001). Relationships between parenting environment and children's mental health among African American and European mothers and children. *Journal of Marriage and the Family*, *63*, 954-966.

Holmes, E. K., Galovan, A. M., Yoshida, K., & Hawkins, A. J. (2010). Meta-analysis of the effectiveness of resident fathering programs: Are family life educators interested in fathers? *Family Relations*, *59*, 240-252.

Horton, L. (1984). The father's role in behavior parent training: A review. *Journal of Clinical Child Psychology*, *13*, 274-279.

Institut de la statistique du Québec. (2003). *Census families by structure and average income, Montréal and Laval administrative regions, 2000*. Québec, City, Québec, Canada: Gouvernement du Québec.

Johnson, V. K. (2003). Linking changes in whole family functioning and children's externalizing behavior across the elementary school years. *Journal of Family Psychology*, *17*, 499-509.

Jones, T. L., & Prinz, R. J. (2005). Potential roles of parental self-efficacy in parent and child adjustment: A review. *Clinical Psychology Review*, *25*, 341-363.

Kaminski, J. W., Valle, L. A., Filene, J. H., & Boyle, C. L. (2008). A meta-analytic review of components associated with parent training program effectiveness. *Journal of Abnormal Child Psychology*, *36*, 567-589.

LaFreniere, P. J., & Capuano, F. (1997). Preventive intervention as a means of clarifying direction of effects in socialization: Anxious-withdrawn preschoolers. *Development and Psychopathology*, *9*, 551-564.

Lamb, M. E. (2004). *The role of the father in child development*. Hoboken, NJ: John Wiley.

Leaper, C., Anderson, K. J., & Sanders, P. (1998). Moderators of gender effects on parents' talk to their children: A meta-analHysis. *Developmental Psychology*, *34*, 3-27.

Lewis, C., & Lamb, M. E. (2003). Fathers' influences on children's development: The evidence from two-parent families. *European Journal of Psychology of Education*, *18*, 211-228.

Lochman, J. E., & PPPRG. (1995). Screening of child behaviour problems for preventive programs at school entry. *Journal of Consulting and Clinical Psychology*, *63*, 549-559.

Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: Moderators and follow-up effects. *Clinical Psychology Review*, *26*, 86-104.

Lundahl, B. W., Tollefson, D., Risser, H., & Lovejoy, M. C. (2008). A meta-analysis of father involvement in parent training. *Research on Social Work Practice*, *18*(2), 97-106.

National Institute of Child Health and Human Development. (2004). Fathers' and mothers' parenting behavior and beliefs as predictors of children's social adjustment in the transition to school. *Journal of Family Psychology*, *18*, 628-638.

Palm, G., & Fagan, J. (2008). Father involvement in early childhood programs: Review of the literature. *Early Child Development and Care*, *178*, 745-759.

Paquette, D., Carbonneau, R., Dubeau, D., Bigras, M., & Tremblay, R. E. (2003). Prevalence of father-child rough-and-tumble play and physical aggression in preschool children. *European Journal of Psychology of Education*, *18*(2), 171-189.

Parke, R., & Buriel, R. (1998). Socialization in the family: Ethnic and ecological perspectives. In N. Eisenberg (Ed.), *Social, emotional and personality development (Handbook of child psychology*; pp. 463-552). New York, NY: Wiley.

Patterson, G. R. (2002). The early development of coercive family process. In J. B. Reid, G. R. Patterson & J. Snyder (Eds.), *Antisocial behavior in children and adolescents: A developmental analysis and model for intervention* (pp. 25-44). Washington, DC: APA.

Pettit, G. S., Bates, J. E., & Dodge, K. A. (1993). Family interaction patterns and children's conduct problems at home and school: A longitudinal perspective. *School Psychology Review*, *22*, 403-420.

Pleck, J. H. (1997). Paternal involvement: Levels, sources and consequences. In M. Lamb (Ed.), *The role of the father* (pp. 66-103). New York, NY: John Wiley.

Poulin, F., Capuano, F., Vitaro, F., & Verlaan, P. (2006). La prévention des problèmes de comportement chez les filles en début de scolarisation. Stratégie de dépistage [Preventing behavior problems in girls in the early school years: Screening strategy]. In P. Verlaan & M. Déry (Eds.), *Les conduites antisociales des filles* (pp. 235-256). Québec, City, Québec, Canada: PUQ.

Poulin, F., Capuano, F., Vitaro, F., & Verlaan, P. (2009). The prevention of violence in Québec: Development of a multimodal program in three phases over 25 years. In W. Craig, D. Pepler & J. Cummings (Eds.), *Rise up for respectful relationships: Prevent bullying* (pp. 91-106). Ottawa, Ontario, Canada: National Printers.

Powell, N. R., Lochman, J. E., & Boxmeyer, C. L. (2007). The prevention of conduct problems. *International Review of Psychiatry*, *19*, 597-605.

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385-401.

Rohner, E. C., Chaille, C., & Rohner, R. P. (1980). Perceived parental acceptance-rejection and the development of children's locus of control. *Journal of Psychology*, *104*, 83-89.

Sameroff, A. J., & Mackenzie, M. J. (2003). Research strategies for capturing transactional models of development. *Development and Psychopathology*, *15*, 613-640.

Shelton, K. K., Frick, P. J., & Wooton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology*, *3*, 317-329.

Spanier, G. B. (1989). *Dyadic Adjustment Scale (DAS)*. North Tonawanda, NY: Multi-Health.

Tiano, J. D., & McNeil, C. B. (2005). The inclusion of fathers in behavioral parent training: A critical evaluation. *Child and Family Behaviour Therapy*, *27*(4), 1-28.

Toupin, J., Déry, M., Pauzé, R., Mercier, H., & Fortin, L. (2000). Cognitive and social contributions to conduct disorder in children. *Journal of Child Psychology and Psychiatry*, *41*, 333-344.

Tremblay, R. E., Vitaro, F., Gagnon, C., Piché, C., & Royer, N. (1992). A prosocial scale for the Preschool Behavior Questionnaire: Concurrent and predictive correlates. *International Journal of Behavioral Development*, *15*, 227-245.

Webster-Stratton, C. (1985). The effect of father involvement in parent training for conduct problem children. *Journal of Child Psychiatry*, *26*, 801-810.

Webster-Stratton, C., Reid, M. J., & Hammond, M. (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology*, *33*, 105-124.

Wilson, S. J., & Lipsey, M. W. (2007). School-based interventions for aggressive and disruptive behaviour: Update of a meta-analysis. *American Journal of Preventive Medicine*, *33*, 130-143.

Author Biographies

Thérèse Besnard, PhD, holds the position of associate professor in the psychoeducation department at the *Université de Sherbrooke*, Sherbrooke, Québec, Canada. Her research interests include educative practices that favour the emergence of social competencies in children, whether on the part of parents or educators, and especially the differences between men and women. She is a member of the Groupe de Recherche sur les Inadaptations Sociales de l'enfance (GRISE).

Pierrette Verlaan, PhD, is a professor in the psychoeducation department at the *Université de Sherbrooke*, Sherbrooke, Québec, Canada. She is a member of the Groupe de Recherche sur les Inadaptations Sociales de l'Enfance (GRISE).

Frank Vitaro, PhD, is a full professor at the Ecole de Psychoéducation, Université de Montréal, Montréal, Québec, Canada He is a member of the Groupe de recherche sur l'inadaptation psychosociale chez l'enfant (GRIP).

France Capuano, PhD, is a professor in the Department d'éducation et formation spécialisées—Faculté des sciences de l'éducation, UQAM, Montréal, Québec, Canada. She is a member of the Groupe de Recherche sur les Inadaptations Sociales de l'Enfance (GRISE).

Francois Poulin, PhD, is a professor in the Département de Psychologie of UQAM, Montréal, Québec, Canada. He is a member of the Groupe de recherche sur l'inadaptation psychosociale chez l'enfant (GRIP).