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Effectiveness of Parent–Child Interaction Therapy (PCIT) Among Chinese Families

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Objective: This study examined the effectiveness of Parent–Child Interaction Therapy (PCIT) among Chinese parents and children in Hong Kong with significant behavior problems. **Method:** The participants (intervention group, 48; comparison group, 62) completed questionnaires on child behavior problems and parenting stress before and after intervention. **Results:** Univariate analysis of covariance, with preintervention scores as covariates, showed the intervention group participants reported fewer child behavior problems and parenting stress postintervention than the comparison group participants. The observational data demonstrated a decrease in inappropriate child-management strategies and an increase in positive parenting practices following intervention. The intervention group participants generally maintained the changes 3 to 6 months after program completion. **Conclusions:** Cultural issues related to PCIT and culturally appropriate intervention strategies were discussed.

Keywords: *child behavior; parenting; Chinese; Parent–Child Interaction Therapy; PCIT*

Parenting young children with behavior problems is very taxing on the patience and skills of their parents and often creates great stress for the parents. Parent–Child Interaction Therapy (PCIT) is an evidence-based treatment program for preschool children displaying disruptive, oppositional, and defiant behavior (Chaffin et al., 2004; Hembree-Kigin & McNeil, 1995; Thomas & Zimmer-Gembeck, 2007; Werba, Eyberg, Boggs, & Algina, 2006). Based on Baumrind's (1966) developmental theory, and incorporating play therapy and behaviorist principles, PCIT teaches authoritative parenting—as manifested in a combination of nurturance, good communication, and firm control—in two phases of treatment (Eyberg, 2004). The first phase is a relationship-enhancement phase in which parents learn the principles of nondirective play therapy to strengthen the parent–child bond and increase the prosocial behavior of their child. In the second phase, parents learn behavioral strategies to reduce noncompliance and other negative behavior in the child. In each phase, parents are taught appropriate interaction skills through modeling, role-playing, and instruction. In subsequent sessions,

learning is facilitated through the live coaching of parents alongside their child from behind a one-way mirror with ear-piece equipment (Urquiza, 2004; Urquiza & McNeil, 1996).

Although there is evidence to support the efficacy of PCIT among Caucasian preschoolers, there is limited evidence of its effectiveness among children from other cultural backgrounds (Eyberg, 2005). Miranda, Nakamura, and Bernal (2003) argued for rigorous clinical trials to test the efficacy of psychosocial interventions with specific ethnic groups. Matos, Torres, Santiago, Jurado, and Rodriguez (2006) used PCIT with nine Puerto Rican families and found significant decreases in child behavior problems after treatment. The parents found PCIT helpful and the treatment format acceptable.

Authors' Note: The authors gratefully acknowledge the participation of the parents and their permission for us to report the results of the program in this article. Correspondence may be addressed to Cynthia Leung, PhD, Department of Educational Psychology, Counselling and Learning Needs, The Hong Kong Institute of Education, 10 Lo Ping Road, Tai Po, Hong Kong PRC; e-mail: cynthia@ied.edu.hk.

Borrego, Anhalt, Terao, Vargas, and Urquiza (2006) reported the use of PCIT in a single case study with a Spanish-speaking family and found that the child's behavior moved from the clinical to the normal range after treatment. McCabe, Yeh, Garland, Lau, and Chavez (2005) developed the GANA program, which is a version of PCIT modified for use among Mexican Americans, but its effectiveness is still being investigated. There is no information on the effectiveness of PCIT among Asian families. Furthermore, although Calzada and Eyberg (2002) have argued for a more careful examination of cultural differences in parenting practices and the impact of these differences on child development, there is only limited information on the relationship between PCIT, cultural values, and parenting (Herschell, Calzada, Eyberg, & McNeil, 2000).

The application of PCIT among Chinese families requires several cultural hurdles to be addressed, such as family values, parenting styles, and parenting behavior. Chinese families from societies such as mainland China, Taiwan, Hong Kong, and Singapore value hierarchy, parental control and authority, interdependence among family members, a sense of duty and honor to the family, and respect for authority (Bond, 1996; Lee & Rong, 1988; Schneider, Hieshima, Lee, & Plank, 1994). Parenting affects both the dyadic parent–child system and the extended family. In such societies, whether parents can effectively manage a young child reflects not only their parenting competence but also their ability to adequately teach their child to show due respect to seniors in the family and other sources of authority. In terms of parenting style and socialization, the concept of filial piety has been prominent among Chinese families for centuries (Ho, 1996) and has even persisted among those who have migrated to Western countries (Wu, 1996). The concept encapsulates the prescription of children's behavior toward their parents and the justification of absolute parental authority over children and emphasizes the responsibility and duty of a child toward the parents. Parents are expected to direct their children in work and play and to exercise verbal and even physical control in instances of perceived misbehavior. Parental praise of good behavior is seen as unnecessary and as running the risk of spoiling children by encouraging them to be arrogant. Given the emphasis on parental authority over children, discipline and obedience in Chinese culture, it is likely that some Chinese parents will find it hard to subscribe to the PCIT principle of giving equal value to the parent–child relationship and to parental authority and control. They may also find it difficult to subscribe to the emphasis on praising and showing affection to children in addition to expecting them to

follow parental instructions. Furthermore, as Chinese fathers are usually reluctant to participate in parent education programs, a mother who is well-versed in the attitudes and skills of PCIT may not be appreciated by her spouse. Chinese parents living in extended families may also find it difficult to practice PCIT techniques with their child if other extended family members do not endorse PCIT principles.

However, despite these hurdles, it is argued that some aspects of PCIT may be acceptable to Chinese parents. For example, given the emphasis on respect for authority in Chinese culture, it is likely that Chinese parents will regard the therapists as authority figures and accept the direct coaching approach of PCIT. Furthermore, research conducted since the 1990s shows that in modern Chinese families, dogmatic attitudes of filial piety are declining, and the authority relations between parents and children are changing (Ho, 1996). Instead of merely expecting their children to be obedient (Cheung, 2000) and filial, many parents now prefer their children to be healthy, happy, and achieving (Ebbeck, 1996). In addition, many parents have given up the use of physical discipline or control in dealing with parent–child conflicts, preferring to use multiple strategies, such as reasoning, ignoring the conflict, and dealing with the underlying emotions involved instead (Chinese University of Hong Kong, 2002; Tsang, 1996). Research in this area suggests that Chinese parents are increasingly open to alternative parenting styles and approaches despite the strong influence of traditional culture and that PCIT may thus stand a good chance of being effectively adopted by couples with young children.

Aside from assessing the usefulness of PCIT in Chinese families, this study also aims to advance evidence-based practice in parent education programs in Hong Kong. Since the 1980s, social workers have been offering programs and services to help parents to better manage their children's problems, enhance child development, and enrich family life. Although some of these programs have adapted programs developed overseas, many others have been locally developed, often without a clear articulation of the theoretical framework on which they are based (Tsang & Leung, 2005). Efforts to evaluate these programs began in the 1990s (Leung & Tsang, 2003), but concentrated mainly on user satisfaction surveys. There were scattered attempts of more systematic evaluations, including a quasi-experimental design study (Kwok, 1994) and some single group pre- and postdesign evaluations, such as the assessment of the Parent Effectiveness Program by Cheung and Yau (1996), a behaviorist program by Ho et al. (1999), and programs of an unspecified nature (Cheung, 2001).

However, the only randomized controlled trial study was the evaluation of the group Positive Parenting Program (Leung, Sanders, Leung, Mak, & Lau, 2003). All these studies investigated the effectiveness of group programs targeted at children with behavior problems or parents with parenting problems.

PCIT is an individualized intervention program designed for families with children whose behavior problems are in the clinical range. Intensive coaching is essential for difficult or high-risk families (e.g., physically abusive and neglectful parents) to produce and sustain improvement (Borrego, Urquiza, Rasmussen, & Zebell, 1999), but some high-risk families may be unable to benefit from group interventions and may claim that the parenting skills taught in such interventions cannot be applied to their situation or are ineffective in their case. The individualized coaching approach of PCIT may be more effective in supporting such parents to practice the parenting skills taught. Clearly, in view of the limited local information on the effectiveness of parent training programs and the unique characteristics of the delivery format and target clients of PCIT, an evaluation of its effectiveness will contribute significantly to evidence-based social work practice in Hong Kong.

The aim of this study was therefore to collect evidence on the effectiveness of PCIT among Chinese parents in Hong Kong, using quasi-experimental design, with a matched comparison group. There were four research questions.

- Was PCIT effective in reducing child behavior problems?
- Was PCIT effective in reducing parenting stress?
- Was PCIT effective in reducing inappropriate parenting practices?
- Was PCIT effective in increasing positive parenting practices?

Method

Participants

Intervention group. The participants were parents of 2- to 8-year-old children who were referred by hospitals, social service agencies, preschools, or primary schools, or who were self-referred because of concerns about their child's behavior. The participants were assessed by PCIT therapists and invited to participate in the intervention if they met the inclusion and exclusion criteria (UC DMC CAARE Center, 2004). There were 53 participants in the intervention group.

Comparison group. The comparison group participants were referred for parent training by preschools or primary schools. Only those who fulfilled the inclusion criteria were included. There were 77 comparison group participants, none of whom were offered any intervention during the study period. The comparison group participants were recruited separately from the intervention group participants, within around 12 months of the recruitment of the intervention group.

Measures

Sociodemographic questionnaire. The questionnaire included questions about child's age, gender, educational level, and length of residence in Hong Kong, and about parent's age, length of residence in Hong Kong, occupation, educational attainment, marital status, family type, household income, and social security status.

Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). The ECBI contains 36 items on disruptive behavior (e.g., noncompliance and temper tantrums) and comprises an Intensity Scale and a Problem Scale. The Intensity Scale measures the frequency of various behavior on a 7-point scale, and the Problem Scale measures whether the specific behavior are considered to be problematic (*yes* = 1, *no* = 0). Higher scores indicate a higher frequency of problem behavior and parental concern. The published cutoff scores are 131 for the Intensity Scale and 15 for the Problem Scale (Eyberg & Pincus, 1999). The Chinese version of the ECBI has been psychometrically examined and shown to have a good reliability (.94 and .93) for both the scales (Leung, Chan, Pang, & Cheng, 2003). In the validation study of Leung and colleagues, the mean scores of children referred for psychological services because of behavior problems were just below the published ECBI cutoff points, which suggests that these cutoff points are applicable to the Hong Kong population. Children with scores above the cutoff points are considered to display behavior problems that are serious enough to warrant further investigation and about which their parents are concerned. The reliability (Cronbach's alpha) estimates in this study were greater than .7 for both the intervention and comparison groups at all the assessment points.

Parenting Stress Index Short Form (PSI; Abidin, 1990). This scale consists of 36 questions that measure three factors of parenting stress: parental distress (PD), which measures the impaired sense of parental competence and depression; parent-child dysfunctional interaction (PCDI), which measures dissatisfaction with the

parent–child interaction; and difficult child (DC), which measures the behavioral characteristics of the child. A total score can be calculated with a higher score representing a higher level of parenting stress. The Chinese version of this scale has been examined in Hong Kong and shown to have an overall reliability of .89 (Lam, 1999), but Hong Kong norms for the PSI have not been established. The reliability (Cronbach's alpha) estimates in this study were greater than .7 for both the intervention and comparison groups at all the assessment points, except for the comparison group preintervention PCDI subscale, which had an estimate of .61.

Dyadic Parent–Child Interaction Coding System: Abbreviated Version (DPICS–A; Robinson & Eyberg, 1981). The intervention group participants were assessed using the DPICS on three occasions: before and after the completion of the PCIT program and at follow-up. The DPICS assesses the quality of parent–child interactions through observations of parent–child dyads in a clinical setting. Six DPICS parent categories were coded for this study, including questions, criticisms, commands, descriptions, reflections, and praise. The frequency of use of corporal punishment during the previous month was also recorded at the three assessment points. The Chinese version of the DPICS–A was translated by a postgraduate psychology student and reviewed by the three PCIT therapists and their supervisor.

Procedures

Preparation. Three social workers from the Tung Wah Group of Hospitals, which is a nongovernmental organization, received PCIT training from the Diagnostic and Treatment Center of the University of California (CAARE Center), where they completed 40 hr of didactic training with role-play, 16 hr of skills building, and 200 supervision hours. They had to meet the CAARE Center PCIT training competencies for therapists, and to be able to administer, score, and interpret the pre- and postquestionnaire measures and DPICS scoring. All the training materials were translated into Chinese and reviewed by the PCIT therapists.

The treatment. The program included pre- and postassessment, relationship enhancement sessions, mid-treatment assessment, and strategies to improve compliance. Throughout the treatment, progress was guided by the regular coding of observations of parent–child interaction (Urquiza, 2004). Treatment sessions were conducted once per week and lasted approximately 1 hr. Each week, parents were given “homework sheets” to record their practice of the skills at home each day with

their child. The treatment sessions began with a 10-min check-in to review the homework and the current family situation. The therapist then conducted a 5-min observation to assess the parent's mastery of the skills. The therapist then coached the parents on the relevant skills and gave them feedback at the end of the session. The length of treatment depended on the parent's mastery of the skills. Once parents met the mastery criteria for the first interaction phase (i.e., 5 behavioral descriptions; 5 reflections; 15 instances of praise, 8 of which were labeled; and fewer than 3 commands, questions, and criticisms) they proceeded to the second phase of treatment and learned strategies to improve compliance. The entire treatment was performance based and ended when the parents had mastered the skills of the two treatment phases (relationship enhancement and strategies to improve compliance) and the child's behavior was within normal limits. The treatment was conducted in Cantonese, and the therapists were required to follow the session checklist in the CAARE Center manual. The treatment was delivered in social service centers and parent participation was voluntary. The PCIT therapists in the social service centers explained and obtained informed consent from the participating parents before service delivery.

Completion of the outcome measures. The intervention group participants completed the outcome measures at pre- and postintervention, and 3- to 6-month follow-up assessment points. The comparison group participants completed the pre- and postintervention measures at an interval of 4 to 5 months. On completion of the postintervention measures, they were offered various parenting programs according to their needs.

Data analysis. Univariate analyses of covariance (ANCOVA) were used to analyze the outcome data. These analyses were supplemented by repeated measure analysis of variance (ANOVA) to examine the change in the outcome measures across the three assessment points.

Results

Participants With Complete and Incomplete Data

Among the 130 participants, 110 had complete data at the pre- and postintervention assessment time points (intervention group = 48, comparison group = 62). Participants with incomplete data in the intervention group were dropout cases. There were no significant differences in the preintervention child behavior, parenting

Table 1
Demographic Characteristics of the Intervention and Comparison Group Participants

	Intervention Group (<i>n</i> = 48)	Comparison Group (<i>n</i> = 62)
Child's age (years)	5.48 (1.90)	5.13 (1.65)
Child length of residence in Hong Kong (years)	4.58 (2.22)	4.77 (1.79)
Number of children	1.83 (.81)	1.81 (.70)
Child gender—male	32 (66.7%)	52 (83.9%)
Mother's age (years)	35.34 (6.16) (<i>n</i> = 47)	34.80 (6.66) (<i>n</i> = 61)
Father's age (years)	41.13 (7.14) (<i>n</i> = 45)	40.04 (7.64) (<i>n</i> = 53)
Mother's length of residence in Hong Kong (years)	24.14 (15.04) (<i>n</i> = 47)	25.33 (14.45) (<i>n</i> = 61)
Father's length of residence in Hong Kong (years)	34.24 (11.65) (<i>n</i> = 45)	35.58 (10.65) (<i>n</i> = 53)
Relationship of participant to child		
Mother	39 (81%)	55 (89%)
Father	6 (13)	6 (10%)
Other female relative	3 (6%)	1 (1%)
Family type		
Nuclear family	33 (69%)	33 (53%)
Extended family	6 (13%)	16 (26%)
Single-parent family	6 (13%)	10 (16%)
Other	3 (6%)	3 (5%)
Marital status		
Married	42 (88%)	48 (77%)
Separated/divorced/widowed/unmarried	6 (12%)	14 (23%)
Mother with lower secondary education or below ^a	19 (40%)	32 (53%)
Father with lower secondary education or below ^a	22 (49%)	32 (60%)
Mother employed	12 (25%)	24 (39%)
Father employed	41 (85%)	59 (95%)
Household income of \$19,999 or below ^b	34 (72%)	50 (81%)
% of families on social security	15 (31%)	11 (18%)

a. Nine years of education or less.

b. According to the 2006 bi-census, the median monthly domestic household income is HK\$17,250.

stress, or sociodemographic characteristics between the participants with complete and incomplete data. When the intervention and comparison groups were analyzed separately, only one significant difference emerged: among the intervention group members, those with incomplete data had higher preintervention PSI PD scores ($M = 58.00$, $SD = 5.70$, $n = 5$) than those with complete data ($M = 40.29$, $SD = 7.83$, $n = 48$), $t(51) = 2.13$, $p < .05$. Twelve families in the intervention group (23%) dropped out, 9 (75%) because of personal, health, or family problems, moving home, or securing employment; 1 because of frustration with their inability to meet the mastery criteria; 1 because of perceived lack of need for further service; and 1 because their child refused to participate. Of these 12 families, 7 were contacted for postintervention assessment but 5 could not be contacted for logistical reasons. The comparison group participants with incomplete data were those who could not be contacted for logistical reasons.

Differences Between the Intervention and Comparison Groups in Terms of Preintervention Measures and Sociodemographic Characteristics

There were no significant differences between the intervention and comparison groups in terms of sociodemographic characteristics, except for the gender of the target child, $\chi^2(1, N = 110) = 4.44$, $p < .05$, with more female children in the intervention group (33%, $n = 16$) than in the comparison group (16%, $n = 10$; see Table 1). The groups also differed in their preintervention ECBI intensity, $t(108) = 4.81$, $p < .001$; ECBI problem, $t(108) = 3.04$, $p < .001$; PSI total, $t(108) = 2.91$, $p < .005$; PSI-PCDI, $t(108) = 2.00$, $p < .05$; and PSI-DC scores, $t(108) = 4.00$, $p < .001$, with the intervention group participants reporting higher scores than the comparison group participants (see Table 2).

Table 2
Means and Standard Deviations of the Parent-Reported Measures

	Intervention Group (<i>n</i> = 48)		Comparison Group (<i>n</i> = 62)		Effect Size ^a	Confidence Interval
	Pre	Post	Pre	Post		
ECBI-intensity	164.65 (22.78)	102.21 (26.00)	146.10 (17.65)	140.19 (22.17)	1.59	1.15 to 1.71
ECBI-problem	20.52 (6.87)	4.92 (6.49)	16.85 (5.78)	15.63 (7.47)	1.52	1.08 to 1.43
PSI total	121.60 (17.16)	85.27 (19.91)	112.87 (14.35)	109.08 (14.98)	1.38	0.95 to 1.59
PSI PD	40.29 (7.83)	30.31 (8.10)	38.42 (8.05)	37.92 (7.65)	0.97	0.56 to 0.99
PSI PCDI	36.67 (6.84)	25.75 (6.50)	34.40 (5.04)	32.84 (5.42)	1.20	0.78 to 1.31
PSI DC	44.65 (6.43)	29.21 (7.31)	40.05 (5.60)	38.32 (6.76)	1.30	0.88 to 1.35

Note: ECBI = Eyberg Child Behaviour Inventory; PSI = Parenting Stress Index; PD = parental distress; PCDI = parent–child dysfunctional interaction; DC = difficult child.

a. Effect size = mean difference/pooled standard deviation.

Effectiveness of the PCIT Program

The effectiveness of the program was investigated using ANCOVA, in which all the measures for which the groups differed significantly at baseline (preintervention scores and gender of the target child) were used as covariates. In terms of child behavior, the intervention group parents reported significantly lower postintervention scores on the ECBI Intensity Scale, $F(1, 106) = 60.90, p < .001$. The intervention group parents also reported lower postintervention scores on the ECBI Problem Scale, $F(1, 106) = 70.55, p < .001$. The ECBI Intensity and Problem scores of 34 (71%) of the families in the intervention group and 10 of the families (16%) in the comparison group were above the cut-off points of 131 and 15, respectively, at preintervention, and below these points at postintervention. Compared with the comparison group parents, the intervention group parents also reported significantly lower postintervention parenting stress scores on the PSI Total Scale, $F(1, 106) = 71.66, p < .001$, and on all the PSI subscales: (a) PSI PD, $F(1, 106) = 49.80, p < .001$; (b) PSI PCDI, $F(1, 106) = 51.57, p < .001$; and (c) PSI DC, $F(1, 106) = 51.03, p < .001$.

The results consistently indicated that PCIT was effective in reducing child behavior problems and parenting stress, as reflected by the statistically significant group differences in the self-report measures. We also examined the between-group effect sizes (Cohen, 1988) and found all of them to be above 0.80, which, according to him, indicates a large effect (see Table 2).

The treatment efficacy was also examined in terms of the achievement of reliable change, which “determines whether the magnitude of change for a given client is statistically reliable” (Jacobson & Truax, 1991, p. 12). This is calculated as the difference between the pre- and posttest score divided by the standard error of the difference between the two scores. There were significant differences between the child behavior and parenting stress scores of

the intervention and comparison group, with a higher percentage of intervention group participants achieving reliable change (Table 3).

Given the attrition rate, another series of ANCOVAs was performed that included the participants with incomplete data. Their preintervention scores were substituted for the missing postintervention scores, which assumed no change from baseline assessment for these participants (Hutchins, et al., 2007). The dependent variables were the postintervention scores and the covariates were the respective preintervention scores, gender of the target child, and maternal employment.¹ The independent variable was group status. The results of these analyses are consistent with the main analyses that include only participants with complete data, with a significant main effect being observed for ECBI-intensity, $F(1, 125) = 55.07, p < .001$; ECBI-problem, $F(1, 125) = 64.38, p < .001$; PSI Total, $F(1, 125) = 62.42, p < .001$; PSI PD, $F(1, 125) = 43.53, p < .001$; PSI PCDI, $F(1, 125) = 44.85, p < .001$; and PSI DC, $F(1, 125) = 48.55, p < .001$. In all the analyses, the postintervention scores of the intervention group participants were lower than those of the comparison group participants.

Analyses of the Maintenance of Change Among Intervention Group Participants

Repeated-measure ANOVAs were used to examine the change in the preintervention, postintervention, and follow-up scores among the intervention group participants with complete data at all the assessment points ($n = 34$; 71%). In all the analyses, the main effects were significant (see Table 4). A pairwise comparison (with Bonferroni adjustment for confidence intervals and significance) showed that the postintervention and follow-up scores were significantly lower than the preintervention scores ($p < .001$ in all cases), but that there was no difference between the follow-up and postintervention scores.

Table 3
Achievement of Reliable Change

	Intervention Group	Comparison Group	Significance
ECBI-intensity			
Achieved	40 (83%)	5 (8%)	$\chi^2(1, N = 110) = 63.41,$ $p < .001$
Not achieved	8 (17%)	57 (92%)	
ECBI-problem			
Achieved	36 (75%)	1 (2%)	$\chi^2(1, N = 110) = 65.27,$ $p < .001$
Not achieved	12 (25%)	61 (98%)	
PSI total			
Achieved	30 (63%)	3 (5%)	$\chi^2(1, N = 110) = 42.83,$ $p < .001$
Not achieved	18 (37%)	59 (95%)	
PSI PD			
Achieved	15 (31%)	1 (2%)	$\chi^2(1, N = 110) = 19.12,$ $p < .001$
Not achieved	33 (69%)	61 (98%)	
PSI PCDI			
Achieved	23 (48%)	2 (3%)	$\chi^2(1, N = 110) = 30.77,$ $p < .001$
Not achieved	25 (52%)	60 (97%)	
PSI DC			
Achieved	31 (66%)	3 (5%)	$\chi^2(1, N = 110) = 45.22,$ $p < .001$
Not achieved	17 (35%)	59 (95%)	

Note: ECBI = Eyberg Child Behaviour Inventory; PSI = Parenting Stress Index; PD = parental distress; PCDI = parent-child dysfunctional interaction; DC = difficult child.

Change in DPICS Measures and Instances of Corporal Punishment

Repeated-measure ANOVAs were also used to examine changes in the DPICS parent measures among the intervention group participants with complete data at all the assessment points. The DPICS measures included the child compliance ratio (number of instances of child compliance divided by total number of commands given), and the number of parental questions, criticisms, commands (direct + indirect commands), descriptions (information descriptions + behavioral descriptions), and reflections and praise (unlabeled + labeled praise). The interrater reliability (κ) was greater than .70 in two thirds of the cases. In all the cases, the main effects were significant and pair-wise comparison (with Bonferroni adjustment for confidence intervals and significance) showed the postintervention and follow-up scores to be significantly different from the preintervention scores. There were decreases in the number of questions and criticisms and increases in the number of descriptions, reflections, instances of praise, and instances of compliance (Table 5).

A repeated-measure ANOVA was also used to examine changes in the instances of corporal punishment (number of instances of corporal punishment in the last month as reported by the participant) among the intervention group participants at all the assessment points. The main effect was significant and a pairwise comparison (with Bonferroni adjustment for confidence intervals

and significance) showed the postintervention and follow-up scores to be significantly lower than the preintervention scores (Table 5).

The average number of sessions attended by the intervention group participants was 15.74 (minimum, 7; maximum, 27).

Discussion and Applications to Practice

The study results indicate that PCIT was effective in reducing child behavior problems among young Chinese children in Hong Kong, with the child behavior problems at postintervention being significantly lower among the intervention group children than among the comparison group children. The majority of the intervention group children whose ECBI intensity scores were above the cutoffs before treatment fell below the clinical cutoffs at the postintervention assessment. The effect sizes of 0.97 to 1.59 compare well with those reported in a meta-analysis with effect size on child behavior (Thomas & Zimmer-Gembeck, 2007). The results also indicate that PCIT was effective in reducing parenting stress: after the intervention the intervention group showed significantly lower parenting stress scores than the comparison group.

In terms of the effectiveness of PCIT in reducing inappropriate parenting practices, the results indicate significant decreases in the use of criticisms, commands, questions, and corporal punishment after intervention. We

Table 4
Comparison Between the Preintervention, Postintervention, and Follow-Up
Scores of the Intervention Group Participants ($n = 34$)

	Pre		Post		Follow-up		Significance $F(2, 66)$	Effect Size (Partial Eta Squared)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ECBI-intensity	168.62	22.26	96.21 ^a	20.02	96.41 ^a	19.90	218.67***	.87
ECBI-problem	21.44	6.75	2.59 ^a	2.86	3.32 ^a	3.42	243.07***	.88
PSI total	123.24	11.62	78.41 ^a	12.54	80.91 ^a	12.42	155.50***	.83
PSI PD	40.74	8.24	28.41 ^a	6.53	28.79 ^a	6.26	75.24***	.70
PSI PCDI	36.50	7.39	23.41 ^a	4.76	24.65 ^a	4.52	82.23***	.71
PSI DC	46.00	6.20	26.59 ^a	4.20	27.47 ^a	4.58	173.87***	.84

Note: ECBI = Eyberg Child Behaviour Inventory; PSI = Parenting Stress Index; PD = parental distress; PCDI = parent–child dysfunctional interaction; DC = difficult child.

a. Differed significantly from the preintervention scores.

*** $p < .001$.

Table 5
Change in the Dyadic Parent–Child Interaction Coding System Measures and Instances of Corporal
Punishment^a Among the Intervention Group Participants ($n = 34$)

	Pre		Post		Follow-up		Significance $F(2, 66)$	Effect Size (Partial Eta Squared)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Praise	1.38	3.32	16.62 ^b	4.08	16.71 ^b	1.82	264.02***	.89
Descriptive and reflection statements	14.71	8.70	27.82 ^b	6.11	28.85 ^b	4.89	43.76***	.57
Criticisms, commands, and questions	25.82	12.05	0.88 ^b	1.07	1.29 ^b	1.34	143.88***	.81
Child compliance	0.60	0.06	0.97 ^b	0.01	0.96 ^b	0.02	31.84***	.49
Corporal punishment ^a	11.38	13.19	0.00 ^b	0.00	0.09 ^b	0.51	25.07***	.43

Note: There are no follow-up scores for dropout cases, although some were contacted to supply postintervention scores.

a. Number of instances of corporal punishment in the last month as reported by the participants.

b. Differed significantly from the preintervention scores.

*** $p < .001$.

also found significant increases in the instances of positive parenting practices, including the use of descriptive and reflective statements and praise, after intervention.

These results are consistent with those of other PCIT studies with ethnic minority groups in which PCIT was found to be effective in reducing child behavior problems and parenting stress (Borrego et al., 2006; Matos et al., 2006). In particular, the percentage of families achieving reliable change in child behavior in this study is similar to that reported by Matos et al. (2006). As with these other studies among ethnic minorities, the tests were translated into the native language (in this case Chinese). These Chinese-language versions of the parenting stress and child behavior measures have been validated for use with the Chinese population in Hong Kong.

As stated in the introduction, there are some cultural issues related to the use of PCIT in Chinese societies that were manifested during the study. First, many Chinese parents are hesitant to use praise as a technique for increasing

positive child behavior. Some of the participants of this study thought that praise might spoil the child and that there was no need to verbalize praise. Others thought that children *should* perform well and be respectful toward parents without need of praise. Of all the PCIT skills used to give positive attention, praise was found to be the most difficult DPICS criterion for participants to meet.

The PCIT therapists tried to empathize with the participants about the use of praise, acknowledging their reluctance, and discussing with them the importance of praise in improving the behavior and self-esteem of young children. They also suggested more subtle forms of praise, in addition to direct verbal expressions, such as pleasant facial expressions and indirect praise (e.g., “your grandmother would like that picture”; Hembree-Kigin & McNeil, 1995). Other suggested ways of dealing with hesitation about the use of praise included providing localized praise examples, providing feedback to participants on their successful use of praise and making participants

aware of the change in their children's behavior contingent on the use of praise.

A second cultural issue is the degree to which parents direct play in phase one of the treatment. Most of the parent participants seemed to find it difficult to apply the right degree of direction along the spectrum and seemed to be inclined to be overdirective and to hinder play interactions. Such behavior may stem from the traditional Chinese values of parental authority, parental control, and overprotection (Blair & Qian, 1998; Ho, 1996).

A third cultural issue concerns the technique of ignoring negative child behavior. In Chinese culture, a child's misbehavior is thought to reflect the inadequacy of the parents in disciplining their child. Thus to avoid a public display of their *inadequacy*, parents try to end such behavior as quickly as possible using methods such as criticism, physical punishment, or force. However, most parents who successfully completed the PCIT intervention were able to use the *ignoring* technique competently.

A fourth cultural issue related to the use of PCIT in Chinese society is the concern of parents that extended family members might complain about their new child management techniques. A few of the participants, and especially those living with their in-laws, faced difficulties in convincing their spouses and extended family members to share their views. Some asked their significant others to participate in the treatment with them but resource constraints did not allow the service to be provided to more than one parent-child dyad. In general, faithful graduates of a PCIT training program may struggle with other adult family members who have different parenting strategies, and family crises could emerge due to this discrepancy following treatment. It is thus proposed that more emphasis be placed on family and community education about the basis of PCIT to increase adult awareness of the approach.

In Western societies, a PCIT program is typically completed in 12 to 16 sessions. In Hong Kong, most of the participants achieved success in a similar number of sessions, although some parents ($n = 10$) with more personal and family difficulties required more than 20 sessions.

The study has some limitations that should be noted. First, it was not a randomized controlled trial, because the social work therapists in the project, all of whom were new to evaluative research, were reluctant to take the ethical risk of delaying intervention for troubled children of motivated parents by including them as waitlist controls. However, the encouraging results of this study have motivated the project therapists to adopt more rigorous research designs in the future. A second limitation is that the comparison group participants were recruited separately from the intervention group, and there were group

differences in child gender, initial child behavior problems, and parenting stress. Although identified differences were used as covariates in the statistical analysis, there may have been other noncontrolled group differences. Third, some of the participants in the intervention group did not complete the treatment, possibly because of their perception of the usefulness of PCIT, yet the intention-to-treat analyses yielded the same pattern of results. Finally, the DPICS measures and follow-up measures were not available for the comparison group participants.

Despite these limitations, the results of the study suggest that PCIT is effective in reducing child behavior problems, parenting stress, and inappropriate child management strategies, and in increasing positive parenting practice among Chinese parents in Hong Kong. The subjective impressions of the therapists suggest that extra support is needed initially to encourage parents to use the *praise* and *ignoring* techniques. Nevertheless, the data show that the participants continued to maintain these techniques at follow-up, which suggests that they probably found them useful. Strategies to elicit support from extended families also appear to be important in facilitating the parental acquisition and implementation of PCIT techniques. This may be especially important in Chinese culture, with its emphasis on the interdependence of family members.

This study makes an important contribution to evidence-based parent education in Hong Kong (Tsang & Leung, 2005) and demonstrates the potential of incorporating research into normal service delivery. However, more rigorous research is still needed to demonstrate the usefulness of PCIT across different settings (such as home and school) and different family backgrounds (in terms of socioeconomic status and psychological environment) to convince service providers and policy makers that this intensive case-by-case service is cost-efficient in promoting family solidarity and positive parent-child relationships, and in reducing disruptive child behavior.

Note

1. When the participants with incomplete data were included, there were significant differences between the intervention and comparison group in terms of the gender of the target child, maternal employment, and the preintervention child behavior and parenting stress scores.

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