

Developing a Database for Evaluating the Effectiveness of Parent Education and Support Programs: Results of a Pilot Study

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Abstract

This was a pilot study to examine the effectiveness of parent education programs and the factors related to the effectiveness of these programs. The study group included 117 parents who participated in 10 different parent education programs organized by three different non-governmental organizations in Hong Kong. The participants completed questionnaires on child behavior problems and parenting stress both before and after program participation. The results indicated that overall, the programs were effective in reducing child behavior problems and parenting stress. The effectiveness of the programs was related to facilitator social work experience and qualifications, program theoretical approach, age of target child, program duration, length of individual program sessions, and parents' time spent with target children. The results supported the value of establishing a territory-wide database to map out factors that possibly improved the effectiveness of parent education programs.

Introduction

Toward the end of the 20th century, Hong Kong enjoyed growing economic prosperity and improving quality of living—and Hong Kong parents became increasingly interested in acquiring new knowledge and techniques to bring up quality children. Since their inception in the 1980s, family life education and parent education have been gathering momentum, with increasing numbers of programs and participants, and continuous improvement in program quality. Now, in the 21st century, both service providers and users are more discerning in terms of the effectiveness and cost-effectiveness of the services, and evidence-based service is receiving more attention. The common practice of using client satisfaction surveys, although an important ingredient in evaluations, is in itself inadequate to provide convincing evidence on the effectiveness of services. Accordingly, other bases for evaluating effectiveness had to be developed. This article documents an initial effort in that direction, and reports on how a database was developed to provide

evidence-based research about the effectiveness of parent education in Hong Kong.

Parent Education: Definition and Objectives

In general terms, *parent education* refers to the parental attitudes, knowledge, and skills needed to promote the physical, cognitive, and psychosocial development of children at different stages (Mahoney, Kaiser, & Girolametto, 1999; Winton, Sloop & Rodriguez, 1999). However, parenting and caregiving can be affected by parental and family stress (Webster-Stratton & Taylor, 2001; Olds, 1988). It follows that parents may also need support in dealing with various issues in their personal lives that might affect their parenting. From this perspective, parent education involves supporting parents in developing coping skills, communication skills, and problem-solving skills, and in their own personal development.

Evaluation Research

Rigorous evaluation research is the basis of evidence-based practice. Patton (1997) defines *evaluation research* as “the systematic application of social research procedures in assessing social intervention programs” (p. 23). It includes systematic collection of data on program content, implementation process, program characteristics, and program effectiveness. The purposes of evaluation research are to evaluate the service, to improve service effectiveness, and to suggest future directions for developing more effective services. Thus, program evaluation is not merely an evaluation of a program; rather, it is also a basis for service improvement and development.

In most research on the outcome or effectiveness of parent education programs, the commonly used measures focused on parents' reports of child behavior and parent mental health (Barlow, 1998; Barlow & Coren, 2003; Nicholson & Sanders, 1999). Considering cost-effectiveness and the importance of data sources,

parental report provides both necessary and sufficient information to evaluate the usefulness of parent education programs tailored to improve parenting functioning (Herschell, Calzada, Eyberg, & McNeil, 2002; Eyberg, Funderburk, Hembree-Kigin, McNeil, Querrido, & Hood, 2001). There is also obvious conceptual and clinical evidence on the connection between parental perceived child behavior problems and perceived parental stress. The present study adopts the same research custom and uses locally validated standardized measure for the evaluation, to examine the effectiveness of parent education programs in terms of changes in child behavior and parent mental health.

Parent Education in Hong Kong and Past Evaluation of Programs

In Hong Kong, parent education services are provided mainly by the education, social welfare, and health sectors (Chinese University of Hong Kong, 2002). The service format includes public education through the mass media, talks, small-group programs, family life camps, and so on. The content includes parenting skills and management of child behavior problems, with topics such as emotional intelligence and information technology becoming more and more popular. Attention is also being paid to services for special-needs families, such as single-parent families and recent immigrants.

Throughout the 20 years during which parent education has been implemented in Hong Kong, many program materials have been developed by various organizations, and many different theoretical models or approaches have been adopted. The most predominant of those models are:

- Behaviorist programs (Martin & Pear, 1992; Sanders, 1999), which are based on social learning theories. The focus is on teaching parents strategies to increase desirable behavior and to reduce undesirable behavior.
- Relationship-based programs, which are based on humanistic, Adlerian, psychodynamic, or family systems theories. Programs such as Parent Effectiveness Training (PET) emphasize empathy and shared meanings in problem resolution, and teach skills such as active listening, sending “I-messages,” and the like (Gordon, 1975). Programs such as Systematic Training for Effective Parenting (STEP) emphasize helping parents understand the motives behind children’s behavior, and locating children’s problem behavior within

the context of family relationships (Dinkmeyer & McKay, 1976).

- The Satir model of parent education, which is based on the therapeutic belief that intrapsychic barriers to parental involvement in nurturing children originate from experiences in families of origin. Activities such as family map exploration; use of the metaphor of the personal iceberg; and development of skills in empathy, rule-setting, and choice-making help to explore feelings, feelings about feelings, perceptions, expectations, yearnings, and the self, and can ultimately deepen appreciation of children’s behavior.

Nevertheless, most locally developed programs do not articulate the theoretical model (if any) on which they are based, and do not track the program with systematic evidence-based research. (As mentioned earlier, such research, in addition to evaluation of the program implementation, would include systematic collection of data on program content, the implementation process, program characteristics, and program effectiveness.)

In terms of research, most program organizers in Hong Kong have used simple questionnaires to survey parents’ satisfaction level with regard to the timing, venue, format, and content of the program. There has been only limited evaluation of the effectiveness of programs. Furthermore, most of these outcome evaluation studies have been limited to individual programs, and the sampling has included only a limited number of participants. Few studies compare the effectiveness of different programs, and very few studies include a control or comparison group—which is understandable, as the programs’ focus and funding were to provide specific types of services.

A more recent and rigorous research project on parent education programs was conducted by the Education Department (as it was then called) and the Department of Health on the Positive Parenting Program (Leung, Sanders, Leung, Mak & Lau, 2003). In this study, 69 participants were randomly assigned to a behaviorally oriented intervention group (Positive Parenting Program) or a control group. The study investigated the effectiveness of the intervention in terms of family relationship, parenting attitudes and skills, and child behavior. The results indicated significant differences between the intervention group and the control group members in most post-intervention measures. The intervention-group members reported fewer child behavior problems,

lower levels of dysfunctional discipline styles, and higher parenting sense of competence at the post-intervention level, compared to the control group.

Another study, which evaluated the Universal Parent Education Program for Parents of Primary School Children (Parent Education Implementation Team, Education and Manpower Bureau, 2003a) used nonequivalent control-group design, involving 52 parents in the intervention group and 32 parents in the control group. The program studied uses an eclectic model, incorporating both behavioral and humanistic approaches. At post-intervention, intervention-group parents reported significantly lower incidences of child problem behavior and parenting stress than the control-group parents (Leung & Tsang, 2003).

Cheung's study (2001) examined the effect of parent education programs on the participants' marital relationship and parenting attitudes, but did not collect information about the effect of the programs on child behavior. Three other studies on individual parent education programs examined the effectiveness of a PET program (Cheung & Yau, 1996), a STEP program (Kwok, 1994), and a child management program (Ho, Chow, & Fung, 1999). Positive changes in parent-child interaction or parenting attitudes were observed for the first two programs, and improvements in parent-child interaction and child behavior were observed for the third program.

The second author and the Kwun Tong District Local Committee on Services for Young People and Kwun Tong District Council, together with various nongovernmental organizations (NGOs) in the area, implemented the "Home-School Co-operation—Parent Child Mediation" project and attempted to conduct evaluation on the parenting work with parents and adolescents in the area (Kwun Tong District Local Committee on Services for Young People and Kwun Tong District Council, 2001). However, the evaluation culture is not yet commonplace among the social service and welfare sectors, and results from the study are still forthcoming.

Commissioned by the Board of Education, the Chinese University of Hong Kong completed an evaluation on the overall provision of parent education service in 2002 (Chinese University of Hong Kong, 2002). This study found that most parents were satisfied with the service provision, though parent

participation was predictably influenced by individual, family, and social factors. However, the Chinese University study did not examine the effectiveness of the programs regarding improvements in parent-child relationships and/or child behavior.

In any such evaluation, it is important to use valid local research instruments. In Hong Kong, the Parenting Stress Index (Short Form) (PSI), a common measure of parental mental health and parent-child interaction, has been translated into Chinese, and its validity has been established (Lam, 1999). The Eyberg Child Behavior Inventory, a measure of child behavior commonly used in parent education research (Barlow & Stewart-Brown, 2000), has also been translated into Chinese, and its reliability and validity within the Hong Kong Chinese community established (Parent Education Implementation Team, Education and Manpower Bureau, 2003b).

Parent Education Evaluation Database

The evaluation of individual programs can only provide information about the effectiveness of individual programs. A comprehensive review of different programs with different formats and components, different theoretical assumptions, and different clients enables program planners and policy makers to compare the effectiveness of different types of programs with one another (MacLeod & Nelson, 2000). Research concerning the impact of contextual factors on the overall effectiveness of parent education programs is also needed to map out the overall picture of parent education and plan its future direction. Contextual factors include variations in program length, teaching methods, and facilitator experience.

The present study is a pilot project on the parent education evaluation database. The pilot database included 10 programs conducted by three nongovernmental organizations.¹ The foci included parenting attitudes and skills, communication skills, behavior management skills, multiple intelligence (e.g., aversion quotient, emotion intelligence), the role of fathers, time management, and parents' emotion management. The program formats were small groups and parenting college (lectures plus tutorial groups). There were at least four sessions² for each program and the period of data collection for all programs was between September 2002 and June 2003. The details of the programs are presented in Table 1.

Table 1 Organization And Program Information

Organization	Course Theme	Number of Sessions	Theoretical Background	Format
1	Parenting skills	2-4	PET	Group
	Parenting skills	2-4	PET	Group
	Parenting skills	2-4	PET	Group
	Parenting skills	2-3	PET	Group
2	Parent effectiveness training	5	PET	Group
	Parenting for fathers	4	Satir	Group
	Multiple intelligence	4	Eclectic	Parenting college
	Spiritually rich parents ³	5	Others	Group
3	Successful parenting college (primary)	6	Eclectic	Parenting college
	Successful parenting college (secondary)	5-6	Eclectic	Parenting college
	Parent-child communication	4	Satir	Group
	Parent support	No information	No information	Group

Specific Research Questions

The specific research questions are:

- Overall, do parent education programs result in reductions in child behavior problems and parenting stress, as perceived by the parents? Research has shown that parent training could reduce child behavior problems and maternal anxiety and stress among parents of children with a range of problems (Barlow & Coren, 2003).
- Is the outcome of the parent education program (in terms of parent stress scores and child behavior scores) related to the level of training and experience of the program facilitators? In Hong Kong, there is wide variation in the professional background, years of experience, and approach to work of parent educators. Most are professionally trained social workers or counselors, though some are psychologists, psychiatrists, or educators. A small number obtain formal accreditation in certain approaches, but there is no formal registration body for professional quality control.
- Is the outcome of the parent education program related to parent and child sociodemographic characteristics? For example, Webster-Stratton and Hammond (1990) found that social disadvantage and single-parent status were related to poorer child outcomes in parent education programs. Ruma, Burke, and Thompson (1996) reported that adolescents had the lowest rate of clinical recovery, compared to preschool- and primary-school-aged children.
- Is the outcome of the program related to program format, such as number of sessions or session duration?

Method

Participants

The participants included 201 parents recruited by the three NGOs; target children included preschool-aged, primary-school-aged, and secondary-school-aged children. In the majority of cases, parents volunteered to enroll for the programs. In four secondary schools, however, all parents of Secondary One or Two students completed the Parenting Sense of Competence Scale (Gilbaud-Wallston & Wandersman, 1978), and parents requiring support in parenting (as revealed by low scores on the scale) were invited to participate.

Of these 201 participants, 118 completed all the questionnaires (see measures section). In one case, the target child's age was outside the range for one of the questionnaires, so this case was excluded from analysis. The analysis in this report was thus based on 117 participants (23 fathers, 94 mothers). The mean ages of the fathers and mothers were 44.33 years old ($SD = 6.86$) and 39.66 years old ($SD = 4.59$), respectively, and the mean length of residence in Hong Kong of fathers and mothers were 36.17 years ($SD = 10.62$) and 29.46 years ($SD = 16.78$), respectively. In terms of family status, there were 88 (75.2%) nuclear families, 20 extended families (17.1%), 5 single-parent families (4.3%), and 3 step families (2.6%); one participant did not supply this information. Participants' marital status was also tracked: 112 (95.7%) were married, 3 (2.6%) were divorced, and 2 (1.7%) were widowed.

Thirteen of the families studied were on Comprehensive Social Security Assistance (CSSA). According to the 2001 Hong Kong census (Census and Statistics Department, 2002), the median domestic household income is \$18,705. The household income of approximately 49% of the participants was below this median. Two participants (1.7%) had monthly family income below \$4,999; 15 (12.8%) had monthly family income between \$5,000 and \$9,999; 41 (35.0%) had monthly family income between \$10,000 and \$19,999; 20 (17.1%) had monthly family income between \$20,000 and \$29,999; 13 (11.1%) had monthly family income between \$30,000 and \$39,999; and 27 (23.1%) had monthly family income above \$40,000.

In terms of the target children, there were 15 kindergarten students (mean age = 3.78 years, $SD = 1.09$, with mean length of residence in Hong Kong = 3.76 years, $SD = .99$); 32 primary-age students (mean age = 8.18 years, $SD = 3.45$, with mean length of residence in Hong Kong = 8.03 years, $SD = 1.63$); and 70 secondary-age students (mean age = 12.87 years,

$SD = 1.01$, with mean length of residence in Hong Kong = 10.73 years, $SD = 3.45$). There were 78 male target children (8 kindergarten students, 24 primary-age students, and 46 secondary-age students) and 39 female target children (7 kindergarten students, 8 primary-age students, and 24 secondary-age students). For child care arrangements, 74 (63.2%) of the target children were cared for by their parents; 22 (18.8%) by domestic helpers; 10 (8.5%) by grandparents; 2 (1.7%) by paid child care; and 1 (0.9%) by other relatives; 8 participants did not supply information on child care.

Measures

There were two measurement components, focusing on the participants and facilitators respectively. The first component consisted of three parts to be completed by the participants (demographic information, Eyberg Child Behavior Inventory, and Parenting Stress Inventory). The second component consisted of a questionnaire to be completed by the facilitators.

Demographic Information. This included basic information such as age, sex, education, occupation, and child care arrangement etc. The participants had to complete this questionnaire before they started the program.

Eyberg Child Behavior Inventory (ECBI) (Eyberg & Ross, 1978). The ECBI is a 36-item measure of parental perception of disruptive behavior in children aged 2 to 16. There are two scores that can be calculated. The first is a problem score measuring the frequency of occurrence of disruptive behaviors. The second is an intensity score, which is the sum of parents' rating of the intensity of the behaviors on a 7-point scale. Participants answered this inventory both before and after completion of the parent education program. The reliability estimates (Cronbach alpha) of pre- and post-intervention ECBI intensity were 0.94 and 0.93. The reliability estimates (Cronbach alpha) of pre- and post-intervention ECBI problem scoring were 0.92 and 0.93.

The Parenting Stress Index (PSI), Short Form (Lam, 1999). The PSI is a 36-item questionnaire consisting of three factors: Parental Distress (PD), measuring an impaired sense of parental competence and depression; Parent-Child Dysfunctional Interaction (PCDI), measuring unsatisfactory parent-child interaction; and Difficult Child (DC), measuring behavioral characteristics of the child. Most of the items are measured on a 5-point scale ranging from 1 (strong agreement) to 5 (strong disagreement). All but 3 of the items (14, 22, 33) are reverse-scored. High

scores indicate higher difficulties. In this study, only the first two factors (24 items) were included, as there was some overlap between DC and ECBI in that both measure child behavior problems.

In Hong Kong, the culture of evaluative studies is just emerging. Parents mostly have a secondary school education and limited exposure to research. They will tolerate only short questionnaires with strong facial validity appeal. It was reckoned that the longer the questionnaire, the more reluctant participants would be to complete the questionnaire. Thus, we had to be very selective about which scales to include, and overlapping items had to be eliminated—even at the risk of losing information—to reduce instrument bias. Participants completed this inventory both before and after going through the parent education program. The reliability estimates (Cronbach alpha) of pre- and post-intervention PSI-PDs were 0.84 and 0.88. The reliability estimates (Cronbach alpha) of pre- and post-intervention PSI-PCDIs were 0.77 and 0.80.

Facilitator and Program Information. These segments include information on the facilitators' qualifications and experiences, in addition to program content, format, and theoretical framework. These questionnaires were completed by the facilitators.

Procedures

In two participating NGOs, participants were located through the normal recruiting procedures, including posters, pamphlets, information bulletins and newspapers, or through mass media. With the other NGO, four secondary schools responded to the recruitment invitation; in each school, a level (Secondary One or Two) was selected. In each selected level in each participating school, as mentioned earlier, the Parenting Sense of Competence Scale was administered to parents of all students. Parents with the bottom 20% scores in each school were invited to participate in the parent education program. They were randomly divided into an intervention group and a control group within each school. The present report includes only the intervention-group data.

In all cases, participants were requested to complete pre-intervention questionnaires prior to program participation. They were also requested to complete the post-intervention questionnaires within two weeks of program completion.

A common data entry file and coding system were prepared for the three participating NGOs. Before program commencement, training on data entry and

coding was conducted for two NGOs, at their request. The completed data files were then sent to the investigators for data analysis.

Results

Comparison between Participants with Complete and Incomplete Data

A series of chi square tests and independent *t* tests were conducted to examine possible differences between participants with complete ($n = 117$) and incomplete data ($n = 83$). There were more participants on CSSA among those with complete data ($n = 13$) than those with incomplete data ($n = 2$), $\chi^2(1, N = 194) = 4.62, p < .05$. There was also a significant difference between participants with complete and incomplete data in terms of target child's educational level, $\chi^2(2, N = 192) = 7.52, p < .05$. More participants with complete data had target children at secondary level ($n = 70$) than those with incomplete data ($n = 32$). There were significant differences between the two groups in terms of father's age, $t(183) = -2.13, p < .05$, and target child's age, $t(191) = -2.97, p < .005$. The fathers in the complete-data group ($M = 44.33, SD = 6.86$) were older than those in the incomplete-data group ($M = 42.16, SD = 6.35$). The target children in the complete-data group ($M = 10.42, SD = 3.47$) were older than those in the incomplete-data group ($M = 8.79, SD = 4.06$). These differences in ages were probably related to the higher number of target children at secondary level among participants with complete data.

There was no difference between the two groups in terms of the pre-intervention scores on the various questionnaires. However, there was a significant difference between the two groups in terms of post-intervention PSI-PD scores, $t(169) = -2.60, p = .01$. Participants with incomplete data reported higher scores ($M = 36.16, SD = 6.48$) than those with complete data ($M = 33.01, SD = 7.90$).

Overall Effectiveness of Programs

Overall effectiveness of the programs was measured in terms of changes in pre- and post-intervention scores on the child behavior and parenting stress measures. The statistical technique used was a dependent *t* test. The results indicated significant differences for ECBI-problem, $t(116) = 3.22, p < .005$; PSI-PD, $t(116) = 2.69, p < .01$; and PSI-PCDI, $t(116) = 3.81, p < .001$, indicating reduction in child behavior problems and parenting stress after program participation. The mean and standard deviation scores are shown in Table 2.

Table 2
Mean And Standard Deviation Scores For Child Behavior And Parenting Stress

	Pre-intervention	Post-intervention	Significance
ECBI*-intensity	113.33 (28.50)	110.27 (22.98)	ns
ECBI-problem	9.38 (7.87)	7.68 (7.78)	<.005
PSI-PD	34.53 (7.97)	32.94 (7.81)	<.01
PSI-PCDI	32.18 (6.54)	30.32 (6.16)	<.001

Facilitator Background and Program Effectiveness

The relationship between facilitator background and program effectiveness was examined using two types of analyses. First, multivariate analyses of covariance (MANCOVAs) were used to examine the overall difference. MANCOVA is a technique to examine group differences in the dependent variables (post-intervention scores in the present case), after adjusting for the covariates (pre-intervention scores in the present case) (Tabachnick and Fidell, 2001). The research question was: “Do facilitators with different backgrounds produce different post-intervention child behavior and parenting stress scores, if pre-intervention scores are used as a baseline?” The dependent variables were post-intervention ECBI-intensity, post-intervention ECBI-problem, post-intervention PSI-PD, and post-intervention PSI-PCDI. The covariates were pre-intervention ECBI-intensity, pre-intervention ECBI-problem, pre-intervention PSI-PD, and pre-intervention PSI-PCDI.

Three MANCOVAs were performed. The independent variables in the MANCOVAs were facilitator qualifications with three levels (Master of Social Work, Bachelor of Social Work, Diploma in Social Work/others), facilitator social work experience with two levels (4 years or less, 5 years or more),⁴ and facilitator parent education experience with two levels (4 years or less, 5 years or more). The second type of analysis was a dependent *t* test; the dependent *t* tests were used as supplementary analyses only when the MANCOVA results were significant.

Facilitator Qualification. MANCOVA results indicated that facilitator qualifications had a significant effect on the post-intervention variables, $F(12, 312) = 2.81, p = .001$. The three qualification levels were then analyzed separately, using dependent *t* tests. There were significant changes in pre- and post-

intervention scores on ECBI-problem, $t(26) = 2.57, p < .05$; PSI-PD, $t(26) = 3.59, p = .001$; and PSI-PCDI scores, $t(26) = 2.15, p < .05$, for the Master of Social Work (MSW) group. There were significant changes in pre- and post-intervention scores on ECBI-problem, $t(75) = 3.61, p = .001$; PSI-PD, $t(75) = 2.04, p < .05$; and PSI-PCDI scores, $t(75) = 3.31, p = .001$, for the Bachelor of Social Work (BSW) group as well. There were no significant changes in child behavior and parenting stress measures for the Diploma of Social Work/others (DipSW) group. The mean and standard deviation scores are shown in Table 3. The pattern showed more significant changes in pre- and post-intervention scores in groups with facilitators who had higher qualifications (MSW and BSW) than in groups with less qualified facilitators.⁵

Facilitator Social Work Experience. MANCOVA results indicated a significant effect of staff social work experience on the post-intervention variables, $F(4, 104) = 2.48, p < .05$. The two groups were then analyzed separately using dependent *t* tests. The results indicated significant pre- and post-intervention score changes for all child behavior measures: namely, ECBI-intensity, $t(93) = 1.99, p < .05$, and ECBI-problem, $t(93) = 4.29, p < .001$, for the more experienced (5 years or more) group. The same was true of parenting stress measures: namely, PSI-PD, $t(93) = 2.91, p = .005$, and PSI-PCDI, $t(93) = 4.14, p < .001$, for the more experienced (5 years or more) group. There were no significant pre- and post-intervention score changes for the less experienced (4 years or under) group. The pattern thus showed significant changes between pre- and post-intervention measures in groups facilitated by more experienced social workers, but no significant changes in groups facilitated by less experienced facilitators. The mean and standard deviation scores are shown in Table 3.

Table 3
Pre- And Post-Intervention Scores By Facilitator Qualifications
And Facilitator Social Work Experience

	MSW (n = 27)	BSW (n = 76)	DipSW (n = 11)	4 years or less (n = 20)	5 years or more (n = 94)
Pre-intervention ECBI-intensity	106.30 (19.95)	118.59 (29.06)	92.91 (30.64)	105.10 (29.77)	114.93 (27.95)
Post-intervention ECBI-intensity	102.70 (16.33)	114.64 (23.26)	96.82 (30.46)	104.65 (24.36)	111.26 (22.48)
Pre-intervention ECBI-problem	6.67 (5.73)	11.22 (8.13)	3.73 (7.36)	6.75 (8.37)	9.99 (7.80)
Post-intervention ECBI-problem	4.74 (5.45)	8.92 (8.13)	6.64 (9.19)	7.75 (9.07)	7.70 (7.60)
Pre-intervention PSI-PD	31.26 (7.16)	35.87 (8.24)	34.36 (6.76)	32.80 (8.50)	35.02 (7.93)
Post-intervention PSI-PD	28.00 (6.62)	34.39 (7.30)	36.27 (9.65)	33.05 (7.92)	32.99 (7.91)
Pre-intervention PSI-PCDI	30.96 (6.58)	32.20 (6.75)	34.27 (5.02)	32.65 (5.31)	31.99 (6.83)
Post-intervention PSI-PCDI	28.98 (6.58)	30.14 (5.89)	34.45 (6.12)	32.90 (7.22)	29.73 (5.85)

Facilitator Parent Education Experience. MANCOVA results indicated no significant differences in child behavior and parenting stress scores by facilitator parent education experience.

Program Issues and Program Effectiveness

The same analysis strategies used in the analysis of facilitator background and program effectiveness were used in this section. In addition, correlation analyses were used to examine the relationship between program effectiveness and program length (number of sessions and duration of each session).

Program Theoretical Framework

MANCOVA results indicated no significant child behavior or parenting stress differences by program theoretical framework. In this analysis, the program with “others” approach was excluded, as there were only two participants with complete data in this

program. This issue is of high interest to service providers, so the three theoretical frameworks were analyzed separately using dependent *t* tests, though the overall MANCOVA results were not significant. For eclectic programs, there were significant pre- and post-intervention differences in child behavior measures: namely, ECBI-intensity, $t(43) = 4.42, p < .001$, and ECBI-problem, $t(43) = 4.55, p < .001$. The same was true of parenting stress measures: namely, PSI-PCDI, $t(43) = 4.66, p < .001$. For programs adopting the Satir approach, there were significant pre- and post-intervention differences in child behavior: namely, ECBI-intensity, $t(7) = 2.73, p < .05$, and ECBI-problem, $t(7) = 5.00, p < .005$. There was a significant difference in pre- and post-intervention PSI-PD, $t(54) = 2.05, p < .05$, for PET programs. However, it should be noted that there were only 8 participants in Satir-type programs. The mean and standard deviation scores are shown in Table 4.

Table 4
Pre- And Post-Intervention Scores By Program Theoretical Framework

	PET (n = 55)	Satir (n = 8)	Eclectic (n = 44)
Pre-intervention ECBI-intensity	98.94 (24.97)	134.00 (28.08)	124.11 (23.91)
Post-intervention ECBI-intensity	101.51 (22.56)	120.75 (21.08)	116.80 (20.90)
Pre-intervention ECBI-problem	6.91 (7.09)	11.25 (9.25)	11.68 (7.83)
Post-intervention ECBI-problem	7.05 (7.46)	6.13 (7.12)	8.52 (8.47)
Pre-intervention PSI-PD	34.93 (7.40)	33.00 (8.14)	34.07 (8.42)
Post-intervention PSI-PD	33.04 (7.76)	31.75 (4.95)	32.89 (8.68)
Pre-intervention PSI-PCDI	32.98 (5.27)	29.13 (10.26)	31.86 (7.11)
Post-intervention PSI-PCDI	32.24 (5.70)	28.13 (6.75)	28.77 (6.39)

Program Format

MANCOVAs results indicated no significant difference in child behavior or parenting stress by program format (group versus parenting college).

Number of Sessions and Session Length (Duration of Each Session)

Correlational techniques were used to examine the relationship between session number and session length, on the one hand; and program effectiveness, in terms of changes in pre- and post-intervention child behavior and parenting stress measures, on the other hand. Four new variables on pre- and post-intervention changes were calculated, by subtracting the post-intervention scores from the pre-intervention

scores of ECBI-intensity, ECBI-problem, PSI-PD, and PSI-PCDI. For each new variable, higher scores indicated bigger pre- and post-intervention difference. The results indicated that the number of sessions was positively correlated with the pre- and post-intervention differences: the higher the number of sessions, the greater the pre- and post-intervention differences. However, session duration was negatively related to pre- and post-intervention differences: the longer the duration, the smaller the pre- and post-intervention differences. The implication is that it is more effective to deliver programs in several short sessions, rather than in one long block. The session numbers ranged from 2 to 6 and the session duration ranged from 1.5 hours to 7.5 hours. The correlation coefficients are shown in Table 5.

Table 5
Correlation Between Program Length Measures And
Parents' Time With Child And Pre- And Post-Intervention Differences
In Child Behavior And Parenting Stress Measures

	Session Number	Session Duration	Father	Mother
Pre- and post-intervention difference in ECBI-intensity	.24*	-.30***	.12	.19*
Pre- and post-intervention difference in ECBI-problem	.26**	-.29***	-.01	.21*
Pre- and post-intervention difference in PSI-PD	.08	.12	-.11	-.11
Pre- and post-intervention difference in PSI-PCDI	.21*	-.17	.01	.04

* $p < .05$

** $p < .01$

*** $p < .005$

Participant Background

MANCOVAs (and dependent t tests where appropriate) and correlation analyses were used to examine the relationship between participant background and program effectiveness.

MANCOVA results indicated no significant effect of educational level of the target child on child behavior and parenting stress measures. MANCOVA results indicated no significant effect of sex of the target child on child behavior and parenting stress measures.

MANCOVA results indicated no significant effect of parents' education, family income, working status of mother, day care for target child, or relationship of program participant to target child on child behavior and parenting stress measures. Correlations between parents' time with target child and pre- and post-intervention differences in child behavior and parenting stress measures indicated a positive relationship between mother's time with target child and changes in child behavior. The correlation coefficients are shown in Table 5.

Discussion

The present study is a pilot study to examine the feasibility of establishing a parent education database.

The results are promising: they indicate that, overall, parent education programs are effective in reducing child behavior problems and parenting stress. The results are encouraging in three ways. First, they provide initial evidence that parent education programs are effective in reducing child behavior problems and parenting stress. Second, they confirm the findings on similar efforts in non-Chinese communities. Third, they indicate that the locally validated borrowed tools can be meaningfully used in Hong Kong to facilitate research and improvement of parent education programs. The results are consistent with the literature on the effectiveness of parent education programs in reducing child behavior problems and parental stress.

The results also suggest that the qualifications and social work experience of parent education facilitators, the number and duration of sessions, and parents' time with target children are factors influencing the effectiveness of the programs.

However, at this stage, it is also important to point out the limitations of the present study. First, the data set is still small, comprising 10 programs from 3 NGOs. It was not possible to gather a random sample that could be statistically representative of the parent education programs conducted. Moreover, the sample size is relatively small. Therefore, results may be affected by scores of particular groups, and the results

should be interpreted with caution. For example, some programs were conducted for families selected because of severe parenting difficulties.

Second, with the small data set, it is not possible to examine possible interactions. For example, are programs of a particular theoretical framework more effective for a particular target child age group? With a larger database, it will be possible to examine these patterns.

Third, a considerable number of participants did not complete all questionnaires, and so were not included in the present analysis. Though there were no differences in pre-intervention scores or systematic differences in demographic profiles between these participants and those included in the analysis, the present sample might still represent participants who were more conscientious and supportive of the programs.

Fourth, in some cases, the cell sizes are relatively small. Hence, these results should be interpreted with caution.

Finally, though there were significant correlations between variables such as program session number

and session length with pre- and post-intervention changes in outcome measures, it is possible that the relationship is not linear. This should be further investigated with a larger data set and a wider range of variable values.

The present pilot study, however, does support the potential for a parent education database. The pilot results point to possible patterns affecting the effectiveness of programs. With a larger data set, more analyses could be performed and the results would be less affected by sampling or random errors. The information should substantially benefit service providers in improving the effectiveness of service provision, developing programs, and training staff.

In the 21st century, evidence-based parent education research is developing rapidly in Hong Kong. Through examination of factors affecting the relative effectiveness of programs, a macro view can be obtained and overall direction can be set. Through the collaboration of various sectors, a platform for comparison and follow-up research could potentially be established, and, with concerted efforts, could build up parent education programs that can meet the needs of Hong Kong parents.

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Footnotes

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2. Owing to unforeseen circumstances, some of the programs had to be condensed from four to fewer sessions.
3. Based on "The Seven Habits of Effective Families," including themes such as win-win communication, time management, looking after oneself, and so on.
4. None of the social work assistants had more than 4 years' experience in social work.
5. All the DipSW facilitators were in NGO1, but when the results of NGO1 were singled out, the pattern was the same.

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