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Self-Directed Triple P (Positive Parenting Program) for Mothers with Children at-Risk of Developing Conduct Problems

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Abstract. A self-directed variant of the Positive Parenting Program (Triple P) was evaluated using 63 preschool-age children at-risk of developing conduct problems. Families were randomly assigned to either Self-directed Triple P (SD), a self-administered behavioural family intervention program, or a waitlist group (WL). The 10-unit SD program teaches parents 17 parenting skills to increase pro-social child behaviours and decrease problem behaviours in home and community settings. Using mothers' reports of child behaviour and parenting practices, mothers in the SD group reported significantly less child behaviour problems, less use of dysfunctional discipline strategies, and greater parenting competence than mothers in the WL group. On measures of parental adjustment, there was no significant difference in conditions at post-intervention based on mothers' reports of depression, anxiety, stress and conflict with partners over parenting issues. Mothers' reports at 6-month follow-up indicated that gains in child behaviour and parenting practices achieved at post-intervention were maintained.

Keywords: Parent training, self-help, behavioural family intervention.

Introduction

Of all treatment approaches used with disruptive children, parent training programs have received the greatest empirical scrutiny. They have proved to be effective in helping parents reduce aggressive and oppositional behaviours in their children (e.g. McMahon and Wells, 1998; Sanders and Dadds, 1993; Webster-Stratton, 1993). Parent training programs, based on social learning principles, produce positive outcomes for parents and children immediately following treatment (e.g. Sanders and Dadds, 1993) and in the long-term (e.g. Forehand and Long, 1988; McMahon and Wells, 1998; Sanders, 1996). Treatment effects often generalize to untreated siblings and behaviours, and to different settings (e.g. Dadds, Sanders and James, 1987; McMahon, 1994; Sanders and Glynn, 1981), and parents are generally satisfied with the programs they receive (Sanders, Markie-Dadds, Tully and Bor, 2000; Webster-Stratton, 1989).

Behavioural parent training has been successfully offered in both group and individual face-to-face session formats (O'Dell et al., 1982). Many parents, however, find it difficult to attend regular clinic-based sessions due to full-time employment or shiftwork, transportation

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problems, childcare or financial difficulties, or geographical isolation. Furthermore, as conduct problems appear to have become more prevalent (Zubrick et al., 1995), the high demand for services indicates a need for more flexible approaches to delivering parent training programs.

Over the past two decades, the use of media materials as stand-alone self-help programs and in conjunction with therapeutic interventions has become more prevalent (Glasgow and Rosen, 1978). However, many of these self-help materials have not been evaluated (e.g. Rosen, 1987). With technological advances, videotape (e.g. Bigelow and Lutzker, 1998; Webster-Stratton, 1994; Webster-Stratton, Kolpacoff and Hollinsworth, 1988), laserdisc (e.g. Lagges and Gordon, 1999) and television broadcast (e.g. Sanders, Montgomery and Brechman-Toussaint, 2000) versions of parent training programs are becoming available. Parenting books are also popular within the community. Clarke-Stewart (1978) found that more than 44% of a sample of mothers of 2- to 4-year-olds had read more than five childcare or parenting books, were generally highly satisfied with them, and would recommend them to others. Hunt, Hawkins and Goodlet (1992) found that 62% of parents of 4- to 7-year-olds nominated books as an important source of information, especially for parents experiencing difficulties with their child's behaviour. Written materials have several advantages in comparison to traditional clinical services: they are relatively inexpensive, easily accessible, convenient, enable the user repetitive use, and can be disseminated to a large number of people (Starker, 1990). The development of effective parent training programs that can be purchased in bookstores and be totally self-administered may reduce the need for many parents to consult with practitioners (Rosen, 1976). Consequently, the present study examines the effectiveness of written self-directed materials for parents with preschool age children with early onset conduct problems.

A self-directed parenting program that promotes self-sufficiency and independent problem-solving learning may be beneficial to parents experiencing problems with their child's behaviour. The Self-directed version of the Triple P – Positive Parenting Program is one such program. Triple P is a preventively focused system of early intervention for parents of children who have or are at-risk of developing conduct problems. It is based on social learning principles and aims to promote positive caring relationships between parents and their children, and to help parents develop effective management strategies for dealing with a variety of childhood behaviour problems and common developmental issues (Sanders, 1999). Triple P is available in many delivery formats including individual face-to-face sessions, group sessions, telephone consultations and as a self-directed program.

Self-directed Triple P targets coercive family interactions known to contribute to the development and maintenance of children's disruptive behaviour problems (Patterson, Reid and Dishion, 1992). This self-directed program comprises a parenting text and parent workbook and involves no practitioner contact or prompting following initial telephone screening and intake. Consistent with Triple P's overall emphasis on parent self-regulation (Sanders, 1999), parents learn to modify their own behaviour through a process of planned, self-directed change to promote parental self-sufficiency (Bandura, 1977; Karoly, 1993).

Several studies have demonstrated that brief self-help booklets can serve as useful and effective change agents for many families with a wide range of common child behaviour problems. However, these studies have focused on managing problem child behaviour and enhancing family interactions in discrete problem settings or times such as on shopping trips, sharing household responsibilities, and at meal-times (Clark et al., 1977; Ergon-Rowe, Ichinose and Clark, 1991; McManmon, Peterson, Metelenis, McWhirter and Clark, 1982); night time behaviour problems (Sanders, Dadds and Bor, 1989; Weymouth, Hudson and King,

1987); dealing with disobedience (Sloane, Endo, Hawkes and Jenson, 1990); reducing whining (Endo, Sloane, Hawkes and Jenson, 1991); and bedwetting (Hunt and Adams, 1989). Written self-help programs are also available for teaching parents a specific parenting skill such as time-out (e.g. Flanagan, Adams and Forehand, 1979; Hansen, Tisdelle and O'Dell, 1984). However, these brief self-directed programs have almost invariably involved some kind of practitioner prompting or support (e.g. Endo et al., 1991; Hansen et al., 1984; Hunt and Adams, 1989; Sloane et al., 1990); small sample sizes (e.g. Hansen et al., 1984), an absence of control groups (e.g. Hunt and Adams, 1989), and an absence of child behaviour outcome measures (e.g. Flanagan et al., 1979; Hansen et al., 1984). Furthermore, the children included in these studies often did not display serious behaviour problems as evidenced by low base rates of negative child behaviour (e.g. Endo et al., 1991; Sloane et al., 1990). An earlier study compared a broad-based written self-directed program with a no-intervention control group. Although achieving positive outcomes for both parents and children at post-intervention and 4-month follow-up, this self-directed program incorporated weekly telephone contact with a practitioner (Connell, Sanders and Markie-Dadds, 1997).

Few studies have examined the effectiveness of a completely self-administered written program that addresses a broad array of child behaviour problems, using controlled evaluation techniques. One exception is the work of Nicholson and Sanders (1999) who compared the effectiveness of a self-directed program for step-families experiencing child behaviour problems, with a practitioner-directed version and waitlist control group. From pre- to post-intervention, the two active interventions produced positive outcomes for parents and children in comparison to the no-intervention control group. In this trial, the practitioner-directed program was no more effective than the self-directed program on parent-reported measures of child behaviour, parenting style and competence, and parental adjustment. Although the self-directed program was mailed to parents in weekly instalments and thus involved some practitioner prompting, these findings clearly support the idea that written materials can be effective in teaching parents to modify the behaviour of their children.

A second study evaluated a self-directed program with 305 preschool-age children identified as being at high-risk of developing conduct problems. This sample was deemed high-risk given that all of the preschoolers showed clinically significant levels of disruptive behaviour as well as at least one of the following family adversity factors: low income; single parent status; marital conflict; parental mood disturbance; or high levels of stressful life events. All of these family adversity factors have been shown to be related to an increased likelihood of conduct problems in children (Sanders and Markie-Dadds, 1992). Using a sample of high-risk preschoolers, Sanders, Markie-Dadds et al. (2000) compared Self-directed Triple P with two practitioner-delivered programs (i.e. Standard Triple P and Enhanced Triple P) and a no- intervention control group. Standard Triple P is an intensive behavioural parent-training program involving approximately 10–12 hours of practitioner contact in individual consultations with a family. Enhanced Triple P, involving approximately 12–16 hours of practitioner time, combines intensive behavioural parent training with adjunctive intervention modules addressing broader issues of family dysfunction, including marital conflict and parental depression and stress. At post-intervention, only the two practitioner-assisted programs were associated with significantly lower levels of parent-reported disruptive child behaviour, lower levels of dysfunctional parenting, greater parental competence, and higher consumer satisfaction than the self-directed and waitlist conditions. The self-directed condition did not produce any favourable outcomes for the parents and children in comparison to

the waitlist condition at post-intervention. However, children in all three active conditions achieved significant reductions in observed disruptive behaviour by 1-year follow-up. This study provides some support for the effectiveness of written self-directed materials with families whose children have significant behaviour problems in the context of family adversity, at least in the long-term. It seems likely, however, that high-risk families such as those included in Sanders, Markie-Dadds et al. (2000) would require more clinical assistance than families who experience parenting problems in the absence of major family adversity. Consequently, Self-directed Triple P may produce more positive outcomes immediately post-intervention with families where child conduct problems are not complicated by other forms of family adversity (e.g. Webster-Stratton and Hammond, 1990).

The present study builds on existing research by trialling a broad focused, behavioural parent-training program in a completely self-administered format under conditions of clinical usage with a clinical population, control measures, and follow-up assessment as suggested by McMahon and Forehand (1980). The present study attempted to replicate as much as possible the context in which parents acquire and use self-help materials. Consequently, parents were able to retain the written resources at the completion of the study, as would be the case if they purchased the program from a bookshop.

The present study also sought to address the methodological limitations of previous studies by including: (a) a comprehensive assessment of child and family functioning; (b) a randomized no-intervention control group; (c) a repeated measures group design incorporating three time intervals (pre-intervention, post-intervention and 6-month follow-up); and (d) a broad focused self-directed program that addressed parenting practices known to contribute to the development of conduct problems.

Overall, the study sought to confirm that a self-directed behavioural family intervention program would produce positive child and parent outcomes for families residing in rural areas. Specifically, mothers in the SD condition were expected to perform significantly better on measures of child behaviour, parenting style and competence, and parental adjustment than mothers in the WL condition. It was also predicted that mothers in the SD condition would be moderately satisfied with the intervention they received. Sanders, Markie-Dadds et al. (2000) found that although parents rated the self-directed program favourably, satisfaction ratings were significantly lower than those achieved for the practitioner-assisted programs. In addition, treatment gains obtained at post-intervention were expected to maintain at 6-month follow-up.

Method

Participants

Participants were 63 families with a preschool-age child. Parents responded to a community outreach campaign that included newspaper stories as well as posters and flyers displayed in childcare centres, kindergartens, preschools and community health centres. A standardized telephone interview was used to ensure families who responded to the outreach campaign met the following inclusion criteria: a) the target child was aged between 2- and 5-years of age; b) mother's reported they were concerned about their child's behaviour in response to a specific question; c) the child showed no evidence of developmental disorder (e.g. autism) or significant health impairment; e) the child was not currently having regular contact with another

Table 1 Demographic characteristics of samples (descriptives)

	Self-directed condition ($n = 32$)		Waitlist condition ($n = 31$)		
Variable	*M*	*SD*	*M*	*SD*	*F* (1,61)
Child's age (months)	42.91	9.16	43.26	9.10	0.02^{ns}
Mother's age (years)	32.47	4.87	31.45	5.47	0.61^{ns}
Father's age (years)	35.27	5.30	33.50	6.47	1.34^{ns}
Father's occupational status[a]	4.21	1.04	4.14	1.17	0.05^{ns}
Mother's occupational status[a]	4.25	0.48	3.90	0.73	2.40^{ns}
Number of children	2.09	0.86	2.03	0.75	0.09^{ns}

[a]Based on a 7-point occupational prestige scale, 1 = high socioeconomic status (Daniel, 1983).

Table 2 Demographic characteristics of samples (frequencies)

	Self-directed condition ($n = 32$)		Waitlist condition ($n = 31$)		
Variable	*n*	%	*N*	%	χ^2
Child's gender					0.28^{ns}
Male	20	62.5	20	64.5	
Female	12	37.5	11	35.5	
Mother's education					5.90^{ns}
Less than 10 years	2	6.3	5	16.1	
10 or 11 years	7	21.9	7	22.6	
12 years	13	40.6	6	19.4	
Tertiary	10	31.3	11	35.5	
Father's education					4.93^{ns}
Less than 10 years	2	6.3	3	9.7	
10 or 11 years	12	37.5	6	19.4	
12 years	6	18.8	6	19.4	
Tertiary	10	31.3	13	41.9	
Marital status					2.68^{ns}
Married/defacto	28	87.5	25	80.7	
Separated/divorced	4	12.5	6	19.3	

professional or agency or taking medication for behavioural problems; and f) the parents were not currently receiving therapy for psychological problems, were not intellectually disabled and reported they were able to read the newspaper without assistance. Subsequently, to be included in the study, mothers had to rate their child's behaviour in the elevated range on the Eyberg Child Behavior Inventory (ECBI; Intensity score $\geqslant$ 127 or Problem Score $\geqslant$ 11; Robinson, Eyberg and Ross, 1980).

Demographic characteristics of the sample are summarized in Tables 1 and 2. On average, mothers and fathers were in the mid-range on the measure of socioeconmic status, Caucasian, with a predominance of male target children (63%). Parents were generally married or in a de facto relationship (84%) and on average had two children in their family (including the

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target child). More than one-third of fathers (37%) and mothers (33%) had not completed high school (i.e. 12 years of formal schooling).

Parent-report measures

Eyberg Child Behavior Inventory (ECBI; Eyberg and Pincus, 1999). The ECBI is a 36-item, multidimensional measure of parental perceptions of disruptive behaviour in children aged 2- to 16-years. It incorporates a measure of frequency of disruptive behaviours (Intensity score) rated on 7-point scales, and a measure of the number of disruptive behaviours that are a problem for parents (Problem score). The ECBI has high internal consistency for both the Intensity ($r = .95$) and Problem ($r = .94$) scores and good test-retest reliability ($r = .86$) (Robinson et al., 1980).

Parent-monitoring measures

Parent Daily Report (PDR; Chamberlain and Reid, 1987). The PDR is a checklist with 33 problem child behaviours and one item referring to the use of physical punishment by parents. Although originally developed as a telephone administered measure, it was used in the present study as a monitoring form. Mothers recorded which behaviours occurred each day on an occurrence or non-occurrence basis over a 7-day period. Two scores were derived: (a) Total Behaviour score (the sum of all occurrences of problem behaviours for the week); and (b) Target Behaviour score (the sum of all behaviours previously identified by the parent as problematic). Each of these scores was averaged to produce daily mean scores. The Target Behaviour score was used as a measure of outcome as it had high interparent reliability ($r = .89$) and adequate validity ($r = .48$) when compared to home observation data (Chamberlain and Reid, 1987), and is sensitive to change (Chamberlain and Reid, 1987).

Self-report measures

Parenting Scale (PS; Arnold, O'Leary, Wolff and Acker, 1993). This 30-item questionnaire measures three dysfunctional discipline styles in parents. It yields a Total score and three factors: Laxness (permissive discipline); Overreactivity (authoritarian discipline, displays of anger, meanness and irritability); and Verbosity (overly long reprimands or reliance on talking). The scale has adequate internal consistency for the Total score ($\alpha = .84$), Laxness ($\alpha = .83$), Overreactivity ($\alpha = .82$), and Verbosity ($\alpha = .63$) scales, and has good test-retest reliability ($r = .84$, .83, .82 and .79, respectively).

Parenting Sense of Competency Scale (PSOC; Gibaud-Wallston and Wandersman, 1978). A 16-item version of this questionnaire was used to assess parents' views of their competence as parents on two dimensions: (a) satisfaction with their parenting role (reflecting the extent of parental frustration, anxiety and motivation); and (b) feelings of efficacy as a parent (reflecting competence, problem-solving ability and capability in the parenting role). The Total score (16 items), Satisfaction factor (9 items) and the Efficacy factor (7 items) show a satisfactory level of internal consistency ($\alpha = .79$, .75 and .76, respectively; Johnston and Mash, 1989).

Parent Problem Checklist (PPC; Dadds and Powell, 1991). The PPC is a 16-item questionnaire that measures interparental conflict over child rearing. It rates parents' ability

to cooperate and work together in family management. Six items explore the extent to which parents disagree over rules and discipline for child misbehaviour, six items rate the occurrence of open conflict over child-rearing issues, and a further four items focus on the extent to which parents undermine each other's relationships with their children. The PPC has a moderately high internal consistency ($\alpha = .70$) and high test-retest reliability ($r = .90$; Dadds and Powell, 1991).

Depression Anxiety Stress Scales (DASS; Lovibond, and Lovibond, 1995). The DASS is a 42-item questionnaire that assesses symptoms of depression, anxiety and stress in adults. Using a 4-point scale from "did not apply to me" (0) to "applied to me very much or most of the time" (3), adults rate the presence of each symptom over the past week. The scale has high reliability for the Depression ($\alpha = .91$), Anxiety ($\alpha = .81$) and Stress ($\alpha = .89$) scales, and good discriminant and concurrent validity (Lovibond and Lovibond, 1995).

The Client Satisfaction Questionnaire (CSQ; Sanders, Markie-Dadds et al., 2000). The 13-item CSQ addresses the quality of service provided; how well the program met the parents' needs, increased the parents' skills and decreased the child's problem behaviours; and whether the parent would recommend the program to others. The measure derived is a composite score of program satisfaction ratings on 7-point scales (a maximum score of 91 and a minimum score of 13 are possible). The scale has high internal consistency ($\alpha = .96$). An item total correlation of .66 indicates that the items reflect client satisfaction and inter-item correlations of .30 to .87 indicate that no items are redundant.

Design

A randomized group comparison design was used with two conditions (SD and WL) and three time periods (pre- and post-intervention, and 6-month follow-up).

Procedure

The parent-observation and self-report measures were completed by mothers in both the WL and SD conditions at pre- and post-intervention. Mothers in the SD condition were also required to complete these measures at 6-month follow-up and the client satisfaction survey at post-intervention. Single-mothers did not complete measures that assess couple relationships.

Mothers completed a 10–15 minute structured telephone interview that informed them of the research trial, obtained their consent to participate and then screened families for eligibility. Subsequently, mothers completed the assessment package. On receipt of the completed questionnaires, families were randomly assigned to either the self-directed (SD; 32 families) or waitlist (WL; 31 families) group according to a table of random numbers.

Families in the SD condition received a 10-unit self-directed program comprising *Every Parent* (Sanders, 1992) and *Every Parent's Workbook* (Sanders, Lynch and Markie-Dadds, 1994; now *Every Parent's Self-help Workbook* by Markie-Dadds, Sanders and Turner, 1999). This positive parenting program was designed to help parents acquire a variety of skills known to influence children's development including: (a) ensuring a safe, interesting environment that provides opportunities for children to explore, discover and experiment, and develop their skills; (b) creating a positive learning environment in which parents are observant and available to their child; (c) using assertive discipline to help their children learn

to accept responsibility for their behaviour, to become aware of the needs of others, and to develop self-control; (d) having realistic expectations of children and their development, and of themselves as parents; and (e) taking care of themselves as a parent to ensure their own needs for intimacy, companionship, recreation and time alone are being met.

The program involved teaching parents 17 core child management strategies. Ten of the strategies are designed to promote children's competence and development (i.e. quality time; talking with children; physical affection; praise; attention; engaging activities; setting a good example; Ask, Say, Do; incidental teaching; and behaviour charts) and seven strategies are designed to help parents manage misbehaviour (i.e. setting rules; directed discussion; planned ignoring; clear direct instructions; logical consequences, quiet-time; and time-out). In addition, parents were taught a 6-step planned activities routine to enhance the generalization and maintenance of parenting skills (i.e. plan ahead; decide on rules; select engaging activities; decide on rewards and consequences; hold a follow-up discussion). Consequently, parents were taught to apply parenting skills to a broad range of target behaviour in both home and community settings with the target child and all relevant siblings. By working through exercises in their workbook, parents learn the skills of self-selection of goals, monitoring of child and own behaviour, self-evaluation of implementation of skills, and self-selection of behaviour change goals for future action. Table 3 provides an overview of the content of each unit of the self-directed program.

Contact between participants and the research team was minimal and there were no face-to-face meetings. All telephone calls were under 3 minutes in duration and the content restricted to requests for mothers to complete and return the assessment packages. No reference was made to any of the written materials comprising the self-directed program. Families were reassessed on the outcome measures immediately following completion of the intervention (approximately 17 weeks after completing the pre-assessment questionnaires).

Families allocated to the WL condition received no treatment and had no contact with the research team for 15 weeks. These families completed the post-assessment and then received the self-directed program. These families took no further part in the study.

Results

Attrition

Of the 32 families assigned to the SD condition, 23 (72%) completed the post-assessment measures 15 weeks following receipt of the self-directed materials. Of the 31 families assigned to the WL condition, 7 (23%) did not complete the post-assessment measures when recontacted. Six-months following the completion of the intervention, 13 (57%) families were reassessed. Chi square analyses examining Condition (SD vs WL) × Completion status (Completer vs Non-completer) indicated no significant difference in attrition rates across the two experimental groups from pre- to post-intervention ($\chi^2 = 0.26$, $p = .415$).

To examine the possibility of differential attrition from the sample at post-intervention, families who did not complete post-assessment were compared with those who completed. A series of MANOVAs were performed across all measures at pre-intervention. No significant effects were found for completer status on any of the dependent variables. Similar analyses were completed to assess the possibility of differential attrition from the sample at follow-up. No significant effects were found for completer status.

Table 3 Details of treatment program

Week	Strategies/tasks/skills
ONE	Identification of parenting traps and child behaviour patterns Causes of children's behaviour problems Setting goals for change and monitoring children's behaviour
TWO	Strategies for promoting social competence • Spending quality time with children • Praising desirable behaviour • Giving plenty of physical affection • Conversing with children • Using incidental teaching • Setting a good example through modelling • Encouraging independence through "ask, say, do" • Providing engaging activities for children
THREE	Strategies for dealing with difficult behaviour • Establishing clear ground rules • Dealing with rule breaking through directed discussion • Using good behaviour charts • Giving clear calm instructions
FOUR	Strategies for dealing with difficult behaviour • Backing up requests with logical consequences • Quiet time • Time-out • Planned ignoring • Planning activities to prevent problems
FIVE-EIGHT	Provision of parenting checklists on a range of child behaviour problems to enable self-monitoring of implementation of strategies. Parents are invited to choose from parenting guides for the following behaviours or settings: whining; temper tantrums; biting; sleeping and bedtime problems; disobedience; problems getting ready to go out; teaching children to tidy up after themselves; mealtime disruptions; problems when visitors arrive; interruptions while you are on the telephone; problems on shopping trips; disruptions while travelling in the car or during trips to the bank, doctor; leaving children with child minders
NINE	Trouble shooting and revision; identifying difficult child management settings or times, and problem-solving
TEN	Maintenance and closure; identifying potentially difficult future issues; reviewing progress; and setting goals for the future

Statistical analyses

Short-term intervention effects were analysed by a series of MANCOVAs with pre-intervention scores as covariates and post-intervention scores as dependent variables. MANOVAs were conducted on each set of dependent variables within each of five measurement domains: child behaviour (ECBI, PDR), parenting style (PS); parenting competence (PSOC); parental affect (DASS), and marital conflict (PPC). Within each of these domains, the measures were grouped

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Table 4 Mothers' report of child behaviour, parenting style and competence at pre- and post-intervention

	Self-directed condition ($n = 21$)				Waitlist condition ($n = 22$)				
	Pre-intervention		Post-intervention		Pre-intervention		Post-intervention		Univariate effect for Condition
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F* (1, 37)
Eyberg Child Behaviour Inventory									
Problem score	15.71	7.37	7.95	6.27	15.23	6.26	14.55	7.00	8.57**
Intensity score	126.67	20.93	100.76	29.90	138.50	26.94	136.23	31.62	7.88**
Parent daily report checklist									
Mean problem	6.59	4.42	2.66	2.27	8.02	4.32	6.87	4.20	10.01**
Mean targeted	5.39	3.81	2.02	1.68	6.07	3.35	5.35	3.56	12.53***
Parenting scale									
Laxness	3.03	0.84	2.56	0.52	2.98	0.87	2.64	0.82	.35
Over-reactivity	3.48	0.78	2.84	0.72	3.37	0.84	3.19	0.86	8.59**
Verbosity	3.93	0.79	3.35	0.76	3.84	0.97	3.56	0.91	1.74
Parenting sense of competence									
Satisfaction	32.91	7.02	39.09	5.78	33.86	7.49	33.68	7.42	19.16***
Efficacy	26.55	3.63	29.48	4.01	26.68	6.53	27.00	6.72	4.24*
Depression Anxiety Stress Scale									
Depression	5.96	7.59	3.96	6.90	5.45	6.41	7.55	8.93	.37
Anxiety	1.74	2.80	1.78	3.29	2.68	2.66	4.09	5.96	.52
Stress	10.39	5.80	7.13	8.26	12.45	8.69	12.18	10.03	.80
Parent problem checklist									
Problem	3.84	4.05	2.50	2.01	3.83	2.53	2.89	2.37	.35
Intensity	31.72	18.25	23.72	9.18	28.44	12.05	29.17	11.44	2.69

Note: Mean problem = Mean problem score; Mean targeted = Mean targeted score.
* $p < .05$, ** $p < .01$, *** $p < .005$.

into sets or constructs based on mothers' reports. Significant condition effects indicated that after allowing for variation in scores at pre-intervention, the post-intervention scores on a dependent variable were significantly different for the SD and WL conditions. Analyses of long-term intervention effects consisted of repeated measures MANOVAs using two time periods (i.e. post-intervention and follow-up). Long-term analyses were only computed for families in the self-directed condition.

Short-term intervention effects

Table 4 presents the means and standard deviations at pre- and post-intervention for each of the dependent variables as well as the univariate *F* statistic for the condition effect.

Child behaviour

A significant multivariate effect for condition was found, $F(4, 34) = 3.39$, $p = .019$, using the measures of child behaviour. At post-intervention, there were significantly lower levels of

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disruptive child behaviour in the SD groups than the WL groups as evidenced by the ECBI intensity and problem scores as well as the PDR mean problem and mean targeted scores (see Table 4).

Parenting style and sense of competence

Significant multivariate effects for condition were found using mothers' responses to the PS ($F(3, 40) = 3.45$, $p = .025$) and PSOC ($F(2, 40) = 9.35$, $p < .001$). The univariate results (see Table 4) indicated significant differences between conditions on the over-reactivity subscale of the PS and on both the satisfaction and efficacy scales of the PSOC. Each of these effects favoured the SD condition. At post-intervention, mothers in the SD group reported lower levels of harsh or authoritarian discipline practices and higher levels of satisfaction and efficacy in their parenting role than mothers in the WL group.

Parental adjustment

A non-significant multivariate result was found using the DASS, $F(3, 38) = 0.26$, $p = .85$, such that there were no significant differences between the two conditions at post-intervention on this measure. Similarly, a null finding was found using mothers' responses to the PPC such that the conditions did not differ significantly from one another at post-intervention, $F(2, 31) = 1.56$, $p = .226$.

Consumer satisfaction

There was a high level of parent satisfaction with the self-directed program. On a 7-point scale, where 1 is "least satisfied" and 7 is "most satisfied", an overall mean satisfaction rating of 5.21 (total score 67.67, maximum score = 91) was obtained.

Intent to treat

As a more conservative estimate of the effect of attrition in the study, an intention to treat analysis was also conducted. This approach is considered the most conservative method of assessing treatment gains when a "probably efficacious" or "well established" treatment such at Triple P is being used (Kendall, Flannery-Schroeder and Ford, 1999). All parents who initially enrolled in the program were included in this analysis. Those who failed to complete post-assessment had their pre-intervention data substituted for their missing post-intervention data. The same variables that were significant for the mothers who completed treatment were significant when an intent to treat analysis was completed.

Long-term intervention effects

Table 5 shows the means and standard deviations for each of the dependent measures at pre-intervention, post-intervention and 6-month follow-up, as well as the univariate F statistic for the main effect for time. Analyses using mothers' reports of child behaviour (ECBI and PDR) revealed a non-significant multivariate effect for time, $F(4, 8) = 1.25$, $p = .365$. Consequently, there was no change on any of the measures of child behaviour from post-intervention to follow-up. Similarly, a null finding was found on the multivariate analyses of the parenting scale, $F(3, 8) = 0.56$, $p = .658$. These results indicate that gains achieved at post-intervention on

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Table 5 Long term effects of self-directed intervention based on mothers' reports

	Self-directed condition							
	Pre-intervention		Post-intervention		6-month follow-up		Univariate Effect for time	
	M	*SD*	*M*	*SD*	*M*	*SD*	*F* (1, 11)	*p*
Eyberg Child Behavior Inventory								
Intensity score	124.58	17.75	90.75	33.83	103.58	24.44	3.47	.09
Problem score	17.06	7.98	7.92	6.73	9.00	6.59	0.41	.53
Parent daily report checklist								
Mean problem	6.83	5.53	2.47	2.06	2.13	1.64	0.21	.66
Mean targeted	5.44	4.57	2.19	1.82	1.81	1.78	0.18	.68
Parenting scale								
Laxness	3.10	1.07	2.48	0.65	2.42	0.68	0.06	.82
Over-reactivity	3.55	1.00	2.78	0.85	3.03	1.28	0.71	.42
Verbosity	4.13	0.89	3.12	0.76	3.13	1.04	0.00	.97
Parenting sense of competence								
Satisfaction	32.25	6.81	41.08	4.94	37.00	8.40	5.38	.04
Efficacy	27.58	3.40	31.42	2.87	28.58	3.37	8.71	.01
Depression Anxiety Stress Scale								
Depression	3.67	5.61	4.92	8.17	4.50	10.18	0.03	.87
Anxiety	1.08	1.08	2.58	4.14	1.75	2.86	0.57	.47
Stress	8.83	5.08	7.67	9.49	7.58	9.90	0.00	.98
Parent problem checklist								
Problem score	3.13	4.39	2.25	1.83	3.75	4.27	1.39	.27
Intensity score	31.25	26.88	20.38	6.65	34.50	26.30	1.50	.26

Note: Mean problem = Mean problem score; Mean targeted = Mean targeted score.

measures of child behaviour and parenting style in the SD group were maintained at 6-month follow-up.

A significant multivariate result was found, however, in the analysis using the PSOC, $F(2, 10) = 5.60$, $p = .23$. For both subscales of the PSOC, there was a significant decline in scores from post-intervention to follow-up such that mothers reported lower levels of satisfaction and efficacy in their parenting role at follow-up than at post-intervention (see Table 5). Analyses on measures of parental adjustment produced null findings for the DASS, $F(3, 9) = 0.367$, $p = .779$ and the PPC, $F(2, 7) = 0.679$, $p = .538$.

Clinical significance of improvement in child behaviour

The Reliable Change Index (RCI; Jacobson and Truax, 1991) was used to assess the clinical significance of change. Using mothers' ECBI intensity scores to calculate RCI at post-intervention, 30% (7/23) of children in the SD condition showed clinically reliable improvements in their behaviour while none of the children in the WL condition reliably

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improved. At 6-month follow-up, 23% (3/13) of the children in the SD condition showed clinically reliable improvements in their behaviour in comparison to pre-intervention.

Discussion

The present findings add further empirical support attesting to the efficacy of Triple P as a self-directed variant of behavioural family intervention (BFI). Mothers in the SD condition reported significantly lower levels of disruptive child behaviour at post-intervention than mothers in the WL condition. These improvements occurred on a variety of mother-observed and reported measures of problem behaviour (PDR Mean Problem and Mean Targeted scores; ECBI Intensity and Problem scores). Overall, 30% of the children showed clinically reliable change and their behavioural improvements were maintained at 6-month follow-up. These findings, showing mothers experience fewer problems with their children following self-directed BFI, are consistent with earlier work by Nicholson and Sanders (1999), which showed that self-directed BFI can be an effective form of intervention. In comparison to Sanders, Markie-Dadds et al. (2000), mothers in the present study achieved significant improvements on measures of child behaviour and parenting immediately post-intervention that were maintained at follow-up. This finding may be explained by the differential sample characteristics that existed in these two studies. In contrast to Sanders, Markie-Dadds et al. (2000), the present study did not specifically recruit families with early onset child behaviour problems in the context of other major family adversity such as parental depression or marital conflict. Consequently, Self-directed Triple P may have more beneficial short-term outcomes for families where child behaviour problems are not complicated by other forms of family adversity.

Outcomes on measures of parenting and parental adjustment measures are less clear. Condition effects supporting the SD program were found on mothers' reports of harsh, punitive discipline strategies as well as their satisfaction and efficacy with parenting. A relapse effect was evident for mothers in the SD group on the measure of parenting satisfaction and efficacy such that scores on this measure declined from post-intervention to 6- month follow-up.

The third hypothesis predicted that there would be short-term improvements in parental adjustment for the SD condition. This hypothesis was not supported, with no significant differences between conditions found at post-intervention. While this is consistent with Sanders, Markie-Dadds et al. (2000), the present result contradicts findings reported by Connell et al. (1997), where mothers in a telephone-assisted self-directed program reported significantly less depression and stress at post-intervention and follow-up. A possible explanation for the present study's finding is that it reflects the fact that the pre-intervention scores on the DASS and PPC fell within the normal range and, hence, floor effects prevented the demonstration of treatment effects on measures of parent adjustment. In addition, access to a supportive practitioner each week via telephone in the Connell et al. (1997) study may have also contributed to the significant improvements noticed in parental adjustment.

Overall, mothers were highly satisfied with the intervention. It is not surprising that mothers were relatively satisfied with the intervention given they had experienced significant improvements in their child's behaviour. However, consumer satisfaction ratings may be affected by what choices parents see themselves as having. In trials where parents know they will receive either a self-directed or practitioner-assisted intervention, parents tend to rate the self-directed program less favourably than in the present study (e.g. Nicholson and Sanders,

1999; Sanders, Markie-Dadds et al., 2000). For example, in Sanders, Markie-Dadds et al. (2000) mothers' ratings for the self-directed program were much lower than those in the present study ($M = 57.65$ vs. 67.67). These results suggest that when mothers have no other option but to do a self-directed program, they rate the program favourably but when parents have the chance to do a practitioner-delivered program, the self-directed program is rated less favourably.

The results from the present study should be interpreted with caution as mothers' observations were unable to be confirmed with independent behavioural observations. Also, no measure of parents' compliance with homework tasks recommended in the program was attempted. Thus, it is unknown to what extent mothers actually implemented the advice they read in the materials. A methodological concern with compliance studies is how to obtain an unobtrusive, valid measure of parental implementation that does not cue and therefore bias indices of homework completion or program implementation. This version of the self-directed program relied on mothers being able to read a parenting text and a companion workbook. Although considerable effort had been made to ensure that the reading level of the material did not require high parental literacy, the effects of this program may be enhanced through the use of videotape demonstrations of skills. In a further attempt to improve the accessibility of the program, the parenting text and the workbook have recently been combined into a single source that means less reading for the parents (Markie-Dadds et al., 1999). A videotape demonstrating core parenting skills is also available (Sanders, Markie-Dadds and Turner, 1996).

Another potential limitation was the absence of follow-up for the waitlist control condition after they had received the intervention. In this study we decided that the purpose of the control condition was to rule out competing explanations for the pre-post change in the intervention group. Following up the control group after receiving the intervention would not have enhanced our capacity to do this, as time 3 comparisons between the two groups would only serve as a replication of the intervention effect already shown by the intervention group but could not rule out competing explanations for observed maintenance effects. The follow-up assessment for the intervention condition only served as a maintenance probe.

There are several important clinical implications that arise from the present findings. First, self-directed behavioural intervention should be preceded by at least a telephone-screening interview to ensure that there are no obvious contraindications to a parent proceeding with the intervention (e.g. behaviour problems in the context of unspecified physical illness or disability). Second, busy clinics should consider the use of a self-directed program as a preliminary intervention for parents on waiting lists, following an appropriate preliminary screening. Consequently, many parents would have the opportunity to immediately begin a therapy program while waiting for an appointment with a practitioner. Parents may then require only brief assistance when an appointment becomes available, thereby reducing waiting lists and times. Another advantage of using a self-directed program with families on the waitlist may be a decreased risk of dropout from the waiting list, given that parents would receive assistance with their concerns as soon as they make contact with the clinic. Third, parents who commence the self-directed intervention should be provided with guidelines on what action to take should they encounter difficulties. That is, all parents completing self-directed programs should have access, should the need arise, to backup consultation support from a practitioner. Backup support may simply involve telephone contact (Connell et al., 1997) or more intensive face-to-face consultations with a practitioner. Fourth, it is important to determine the limits of applicability of a self-directed program with parents of children with more severe conduct

problems who may be less motivated or organized to make contact. In such cases, specific additional strategies to increase engagement may be required.

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