A Controlled Evaluation of an Enhanced Self-Directed Behavioural Family Intervention for Parents of Children With Conduct Problems in Rural and Remote Areas

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Few studies have examined the impact of parenting interventions for families in rural and isolated areas who have children with conduct problems, where access to professional services can be difficult. The present investigation compared the effects of three conditions, two levels of self-directed behavioral family intervention: an enhanced self-directed program that combined a self-help program using written materials and a weekly telephone consultation (ESD), a self-help program (SD) and a waitlist control group (WL). At postintervention the ESD group reported significantly lower levels of disruptive behaviour, and lower levels of dysfunctional parenting than the SD and WL controls, and higher levels of consumer satisfaction. At 6 months follow-up the main effects for the ESD group had been maintained. The SD group continued to evidence improvement from postintervention to follow-up such that 65% of children in the ESD condition and 57% of children in the SD condition showed clinical reliable change on measures of disruptive behaviour. Implications of findings and directions for future research are discussed.

Despite evidence of a higher prevalence rate for children’s disruptive behaviour problems in rural than urban areas (Reid & Solomon, 1992; Sanders, Markie-Dadds, Rinaldis, Firman, & Baig, 2001; Sanders et al., 1999; Sawyer et al., 2000), research into the provision of interventions for rural client populations has been largely neglected. Outcome studies with rural families indicate alternative modes of service delivery (e.g., Schlosser, Kavanagh, & Wilson, 1988) are needed due to difficulty accessing specialised face-to-face services. Obstacles specific to living in rural and remote areas hinder parents’ access to traditional face-to-face mental health services. These problems include a shortage of services; geographical isolation from services; difficulty in attracting and retaining qualified, trained personnel; and differences in attitude related to the stigma of accessing mental health services. Self-directed interventions have the potential to overcome some of these service difficulties.

Recently, there has been increased interest in the use of self-directed interventions both as stand-alone self-help programs and in conjunction with other therapeutic interventions (Glasgow & Rosen, 1978). However, many of these self-help programs have not been evaluated (e.g., Rosen, 1987). Advancing technology has
created a wide range of options for the development of self-directed parenting interventions, including the use of videotapes (e.g., Bigelow & Lutzker, 1998; Webster-Stratton, 1994), laserdisc (e.g., Lagges & Gordon, 1999), World Wide Web and television broadcasts. Such technology enables specific parenting skills to be demonstrated (e.g., Sanders, Montgomery, & Brechman-Toussaint, 2000). However, parenting books remain a very popular medium with parents to learn about parenting. Clarke-Stewart (1978) found that more than 44% of a sample of mothers of 2- to 4-year-olds had read more than five child care 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 totally self-administered may reduce the need for many parents to consult with practitioners (Rosen, 1976). Consequently, the present study examined 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 population-level system of early intervention for parents of children who have or are at risk of developing behavioural or emotional 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.

Considerable research has established the efficacy of group and individually administered versions of Triple P (see Sanders, Turner, & Markie-Dadds, 2002). Two studies have also demonstrated the efficacy of Triple P as a self-directed intervention. Connell, Sanders, and Markie-Dadds (1997) evaluated a self-directed version of Triple P that involved providing written parenting materials (a parenting text and companion workbook) supplemented by weekly telephone consultations. Telephone counselling is a well-established community service that provides regular practitioner support without the disadvantages of distance, stigma and threats to confidentiality. In that study parents were not provided with any additional parenting information. The telephone consultations were used to clarify parenting advice, support the parent in their efforts, and promote parental responsibility for changing their own and their child’s behaviour. Parents reported significant improvements on measures of child behaviour, parenting style and efficacy, and parental adjustment. Gains in child behaviour and parenting style were maintained at 4-month follow-up. For mothers in the waitlist condition, no changes were evident on any of the dependent measures from pre- to postintervention. A second study by Markie-Dadds and Sanders (in press) found that a completely self-directed 10-session variant of Triple P that used written materials alone without telephone calls resulted in
significantly fewer child behaviour problems, less use of dysfunctional discipline strategies and greater parenting competence compared to a waitlist control. Intervention effects were maintained at 6-month follow-up.

The present study extends this earlier work by examining whether the provision of telephone consultation enhances outcomes for parents and children presenting with early onset conduct problems. The self-directed intervention was designed to be delivered in two formats: either as a completely self-administered intervention that families completed independently or as a practitioner-assisted intervention in which families received weekly telephone calls in addition to the written self-directed materials. Participating families from rural and remote communities in Western Australia were used as self-directed programs are likely to have particular relevance to such families where access to face-to-face interventions is often limited or not available.

It was hypothesised that both the Enhanced Self-Directed Triple P (ESD) and the Self-Directed Triple P (SD) programs would result in significant improvements in child behaviour and family functioning relative to the waitlist (WL) control group. We predicted that outcomes would be achieved in a tiered manner such that the ESD condition would produce more positive outcomes for parents and children than the SD condition, which in turn would produce more positive outcomes for families than the WL condition. This tiered pattern of results was predicted for child behaviour, parenting style and efficacy, and personal and relationship adjustment.

Gains achieved at postintervention within each condition were expected to be maintained at 6-month follow-up. It was anticipated that the ESD condition would continue to produce significantly better outcomes for parents and children than the SD condition at 6-month follow-up. We also predicted that families in the EDS condition who accessed professional support and assistance during the program would achieve more durable outcomes.

In terms of consumer satisfaction, it was hypothesised that parents would rate Enhanced Self-Directed Triple P more favourably than Standard Self-Directed Triple P. This prediction was based on previous findings (e.g., Nicholson & Sanders, 1999; Sanders, Markie-Dadds, Tully & Bor, 2000) in which self-directed programs have been rated less favourably than practitioner-assisted versions.

**Method**

**Participants**

Participants were 41 families with a child aged between 2 and 6 years. Eligible families resided in southern country areas of Western Australia, in a town with a population of less than 1000. Parents responded to a community outreach campaign that included newspaper stories, radio announcements, and posters and flyers displayed in childcare centres, kindergartens, preschools and community health centres.

A standardised telephone interview was used to ensure families who responded to the outreach campaign met the following criteria: (a) the target child was aged between 2 and 6 years of age, (b) mothers 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, (d) the child was not currently having regular contact with another health professional or agency or taking medication for behavioural problems, and (e) 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. For inclusion in the study, mothers also had to rate their child’s behaviour in the elevated range on the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999) — Intensity score $\geq 127$ or Problem score $\geq 11$ (Robinson, Eyberg, & Ross, 1980).

Demographic characteristics of the sample are summarised in Tables 1 and 2. Parents were predominantly employed in manual labour positions such as farm hand and were Caucasian, there was a predominance of male target children (76%) and, in most families, both parents were present (90%). On average, mothers were 32 years of age and fathers 35 years. About 41% of mothers and 54% of fathers had not completed high school.

Analyses using ANOVAs and chi-square found no significant differences among the three groups on any of the demographic characteristics prior to intervention, indicating the three groups were well matched sociodemographically.

**Parent-Report Measure**

*Eyberg Child Behavior Inventory.* The ECBI is a 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 Measure**

*Parent Daily Report.* The Parent Daily Report (PDR; Chamberlain & Reid, 1987) 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 nonoccurrence 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 has high interparent reliability ($r = .89$) and adequate validity ($r = .48$) when compared to home observation data (Chamberlain & Reid, 1987), and is sensitive to change (Chamberlain & Reid, 1987).

**Self-Report Measures**

**Parenting Scale.** The Parenting Scale (PS; Arnold, O’Leary, Wolff, & Acker, 1993) measures three dysfunctional discipline styles in parents. It yields a Total score and three factors: Laxness (permissive discipline), Over-reactivity (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 ($\alpha = .83$), Over-reactivity ($\alpha = .82$) and Verbosity ($\alpha = .63$) scales, and has good test–retest reliability ($r = .84$, .83, .82 and .79, respectively).

**Parenting Sense of Competency Scale.** A 16-item version of the Parenting Sense of Competency Scale (PSOC; Gibaud-Wallston & Wandersman, 1978) 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 & Mash, 1989).

**Parent Problem Checklist.** The Parent Problem Checklist (PPC; Dadds & Powell, 1991) 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 & Powell, 1991).

**Depression Anxiety Stress Scales.** The Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) assess symptoms of depression, anxiety and stress in adults. 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 & Lovibond, 1995).

**The Client Satisfaction Questionnaire.** The Client Satisfaction Questionnaire (CSQ; Sanders, Markie-Dadds, et al., 2000) 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 interitem correlations of .30 to .87 indicate that no items are redundant.

**Procedure**
A randomised group-comparison design was used with three conditions (ESD, SD and WL) and three time periods (pre- and postintervention, and 6-month follow-up). The parent-monitoring, parent-report and self-report measures were completed by mothers and fathers in all three conditions at pre- and postintervention. Parents in the ESD and SD conditions were also required to complete these measures at 6-month follow-up and the client satisfaction survey at postintervention. Single parents did not complete measures that assess couple relationships.

During the initial telephone contact with the research team, families completed a 10–15 minute structured interview that informed parents about the research trial, obtained their consent to participate and then screened for eligibility. Subsequently, parents completed the assessment packages. Upon returning the completed assessment forms and meeting selection criteria, families were randomly assigned to either the enhanced self-directed (14 families), self-directed (15 families) or waitlist (12 families) group.

Families in the SD condition received a 10-unit self-directed program comprising Every Parent (Sanders, 1992) and Every Parent's Workbook (Sanders, Lynch, & Markie-Dadds, 1994; now Every Parent's Self-Help Workbook by Markie-Dadds, Sanders, & Turner, 1998). 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 six-step planned activities routine to enhance the generalisation 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.

For families in this condition, contact with the research team was minimal and there were no face-to-face meetings. All telephone calls were under 3 minutes in duration with the content restricted to requests for parents to complete and return the assessment packages. No reference was made to any of the written materials comprising the self-directed program. Families completed the postintervention measures approximately 12 weeks after receiving the written parent-training program.

Families allocated to the ESD condition received the same written parenting resources as families in the SD condition. However, in consultation with a practitioner, a mutually convenient time was arranged for weekly telephone contact and families were given a free-call telephone number. The calls were always client-initiated and the mother participated in all of the telephone sessions. To encourage father engagement, mothers were asked about their partner’s progress in reading the materials and were prompted to involve them in the program. The aim of the weekly telephone consultations was to encourage parents’ problem-solving skills. When parents reported problems with implementing suggested parenting strategies, they were prompted to refer back to the written material provided rather than rely on the practitioner for solutions. Parents were prompted to self-monitor their own and their child’s behaviour, to self-select goals and specific behaviours for change, to select strategies to use, to identify their own and their child’s strengths and areas for improvement, and to select contingent rewards for themselves and their child. Discussions were restricted to behaviour problems of the target child and elaboration of concepts nominated by the parents as not being well understood. Each call lasted no longer than 30 minutes, with a mean of 20 minutes and a range of 5 to 30 minutes. Treatment integrity was addressed by (a) having one skilled clinical psychologist deliver the telephone consultations to all relevant families, and (b) audio taping all telephone consultations.
consultations for periodic review with the first author to ensure protocol adherence and competent delivery of the intervention. Furthermore, the clinical psychologist received training in the delivery of the telephone sessions at the commencement of the trial and participated in fortnightly clinical supervision consultations with the first author via telephone for the duration of the trial.

**TABLE 3**
Details of Self-Directed Program

<table>
<thead>
<tr>
<th>Week</th>
<th>Strategies/tasks/skills</th>
</tr>
</thead>
</table>
| 1    | Identification of parenting traps and child behaviour patterns  
Causes of children’s behaviour problems  
Setting goals for change and monitoring children’s behaviour |
| 2    | 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 |
| 3    | Strategies for dealing with difficult behaviour I  
• Establishing clear ground rules  
• Dealing with rule breaking through directed discussion  
• Using good behaviour charts  
• Giving clear calm instructions |
| 4    | Strategies for dealing with difficult behaviour II  
• Backing up requests with logical consequences  
• Quiet time  
• Time-out  
• Planned ignoring  
• Planning activities to prevent problems |
| 5–8  | 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 etc.; leaving children with child minders. |
| 9    | Trouble-shooting and revision, identifying difficult child-management settings or times and problem-solving |
| 10   | Maintenance and closure, identifying potentially difficult future issues, reviewing progress, and setting goals for the future. |
Families allocated to the WL condition received no treatment and had no contact with the research team for 12 weeks. These families completed the postintervention measures and then received the program of their choice, namely Enhanced Self-Directed Triple P or Self-Directed Triple P. These families took no further part in the study.

Results

Attrition

There was a very low level of attrition in the current study. One family, assigned to the ESD condition, did not complete the postassessment, meaning that 40 (98%) families completed pre and postassessment. One family, from the SD condition, did not complete the 6-month follow-up assessment.

Short-Term Intervention Effects

Child behaviour. As reported in Table 5, significant differences between conditions at postintervention were found for all mother-reported measures of child behaviour, \( F(4, 30) = 10.41, p = .0001 \). At postintervention, children in the ESD condition showed significantly lower levels of disruptive child behaviour on the ECBI Problem and Intensity scores than children in both the SD and WL conditions. Furthermore, children in the SD condition showed significantly lower levels of disruptive child behaviour on these measures in comparison to children in the WL. Children in the ESD and SD conditions also displayed significantly less disruptive child behaviour than children in the WL condition on the PDR Mean Problem score. Using mothers’ reports on the PDR Mean Targeted score, children in the ESD condition showed less disruptive behaviour than children in both the SD and WL conditions. No other pairwise comparisons were significant. Analyses of father-reported measures of child behaviour failed to produce any significant effects.

Parenting style and competence. Using mothers’ reports on the PS, a significant effect for condition was found, \( F(3, 32) = 3.49, p = .03 \). Mothers in the ESD condition reported lower scores on the Laxness subscale than mothers in the SD and WL conditions. No other pairwise comparisons were significant. A significant condition effect was also found using mothers’ reports on the PSOC, \( F(2, 33) = 9.73, p = .0001 \), such that mothers in the ESD condition reported higher levels of parenting efficacy than mothers in the SD and WL conditions and higher parenting satisfaction than mothers in the WL condition. No significant effects were found using fathers’ reports on these measures of parenting style and competence.

Parental adjustment. At postintervention, there were no significant differences between conditions on mothers’ or fathers’ ratings of parental (DASS) or relationship adjustment (PPC).

Consumer satisfaction. In terms of consumer satisfaction, mothers in the two intervention conditions reported that they were very satisfied with the program they received (ESD: \( M = 74.25, SD = 7.50 \); SD: \( M = 65.64, SD = 9.74 \)). However, mothers in the ESD condition were significantly more satisfied with the program they received than mothers in the SD condition, \( F(1, 24) = 6.21, p = .02 \).
### TABLE 4
Correlations Between Mothers’ and Fathers’ Reports of Child Behaviour

<table>
<thead>
<tr>
<th></th>
<th>Mo ECBI intensity score</th>
<th>Mo ECBI problem score</th>
<th>Mo PDF mean problem score</th>
<th>Mo PDF mean targeted score</th>
<th>Fa ECBI intensity score</th>
<th>Fa ECBI problem score</th>
<th>Fa PDR mean problem</th>
<th>Fa PDR mean targeted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mo ECBI Intensity score</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mo ECBI Problem score</td>
<td>.46*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mo PDR Mean Problem score</td>
<td>.64***</td>
<td>.45**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mo PDR Mean Targeted score</td>
<td>.62***</td>
<td>.62***</td>
<td>.74***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fa ECBI Intensity score</td>
<td>.62***</td>
<td>.45**</td>
<td>.53**</td>
<td>.57***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fa ECBI Problem score</td>
<td>.45**</td>
<td>.59***</td>
<td>.44*</td>
<td>.55**</td>
<td>.55***</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fa PDR Mean Problem score</td>
<td>.48*</td>
<td>.45*</td>
<td>.82***</td>
<td>.63**</td>
<td>.56*</td>
<td>.48*</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Fa PDR Mean Targeted score</td>
<td>.50*</td>
<td>.58*</td>
<td>.71***</td>
<td>.79***</td>
<td>.72***</td>
<td>.69***</td>
<td>.82***</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: Mo = Mother, Fa = Father, ECBI = Eyberg Child Behavior Inventory; PDR = Parent Daily Report.

*p < .01, **p < .001, ***p < .0001.
## TABLE 5
Short-Term Intervention Effects: Mothers’ Reports at Pre- and Postintervention

<table>
<thead>
<tr>
<th></th>
<th>Enhanced self-directed (n = 13)</th>
<th>Self-directed (n = 15)</th>
<th>Waitlist (n = 12)</th>
<th>Contrasts (t statistics)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre M (SD)</td>
<td>Post M (SD)</td>
<td>Pre M (SD)</td>
<td>Post M (SD)</td>
</tr>
<tr>
<td>Eyberg Child Behaviour Inventory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensity</td>
<td>149.77 (29.01)</td>
<td>100.69 (17.41)</td>
<td>160.20 (35.12)</td>
<td>129.87 (35.12)</td>
</tr>
<tr>
<td>Problem</td>
<td>12.31 (6.36)</td>
<td>2.15 (3.36)</td>
<td>19.27 (6.82)</td>
<td>12.47 (10.15)</td>
</tr>
<tr>
<td>Parent Daily Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Problem</td>
<td>8.53 (4.56)</td>
<td>3.76 (2.76)</td>
<td>9.21 (6.07)</td>
<td>6.24 (5.07)</td>
</tr>
<tr>
<td>Mean Target</td>
<td>3.81 (1.97)</td>
<td>0.50 (0.56)</td>
<td>6.33 (4.88)</td>
<td>4.36 (4.07)</td>
</tr>
<tr>
<td>Parenting Scale</td>
<td></td>
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<tr>
<td>Laxness</td>
<td>2.98 (1.10)</td>
<td>1.94 (0.71)</td>
<td>2.80 (0.67)</td>
<td>2.55 (0.65)</td>
</tr>
<tr>
<td>Over-reactivity</td>
<td>2.78 (0.86)</td>
<td>2.10 (0.78)</td>
<td>3.66 (0.79)</td>
<td>3.29 (0.79)</td>
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<td>Verbosity</td>
<td>3.23 (0.82)</td>
<td>2.58 (0.89)</td>
<td>3.78 (0.77)</td>
<td>3.29 (0.97)</td>
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<tr>
<td>Parenting Sense of Competence</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Satisfaction</td>
<td>35.54 (8.02)</td>
<td>43.62 (6.61)</td>
<td>29.60 (7.05)</td>
<td>34.64 (8.54)</td>
</tr>
<tr>
<td>Efficacy</td>
<td>28.31 (4.40)</td>
<td>35.62 (5.44)</td>
<td>24.40 (5.28)</td>
<td>26.14 (6.83)</td>
</tr>
<tr>
<td>Parent Problem Checklist</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem</td>
<td>7.00 (4.10)</td>
<td>4.00 (3.92)</td>
<td>6.13 (3.04)</td>
<td>4.73 (3.79)</td>
</tr>
<tr>
<td>Intensity</td>
<td>32.64 (15.44)</td>
<td>38.46 (28.63)</td>
<td>39.07 (153.53)</td>
<td>29.53 (13.39)</td>
</tr>
<tr>
<td>Depression Anxiety Stress Scales</td>
<td></td>
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<tr>
<td>Depression</td>
<td>4.08 (4.13)</td>
<td>3.15 (4.62)</td>
<td>12.33 (11.68)</td>
<td>7.93 (9.84)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.77 (1.09)</td>
<td>0.62 (0.87)</td>
<td>4.07 (4.91)</td>
<td>2.47 (3.50)</td>
</tr>
<tr>
<td>Stress</td>
<td>14.08 (20.51)</td>
<td>5.15 (4.04)</td>
<td>17.40 (8.10)</td>
<td>11.40 (8.41)</td>
</tr>
</tbody>
</table>

Note: Pre = preintervention, Post = postintervention, Mean Problem = Mean Problem score; Mean Target = Mean Targeted score.

***p < .001, **p < .01, *p < .05.
Long-Term Intervention Effects
From postintervention to 6-month follow-up, there were no significant effects using mothers’ or fathers’ reports of parenting competence, parental adjustment and relationship adjustment. There were also no significant effects using fathers’ reports of child behaviour. However, a significant main effect for time was found using mothers’ reports of child behaviour on the ECBI, \( F(2, 22) = 2.83, p = .05 \), such that mothers in the SD condition reported a significantly lower level of disruptive child behaviour on the ECBI at follow-up than at postintervention. For mothers in the ESD condition, there was no change from postintervention to follow-up on ratings of child behaviour using the ECBI. Furthermore, a significant Condition \( \times \) Time interaction, \( F(3, 20) = 3.47, p = .04 \), was found using mothers’ reports on

### TABLE 6
Long-Term Intervention Effects: Mothers’ Reports at Postintervention and Follow-Up

<table>
<thead>
<tr>
<th></th>
<th>Enhanced self-directed (( n = 13 ))</th>
<th>Self-directed (( n = 14 ))</th>
<th>Cond ( \times ) Time</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Post (M (SD))</td>
<td>Follow-up (M (SD))</td>
<td>Post (M (SD))</td>
<td>Follow-up (M (SD))</td>
</tr>
<tr>
<td>Eyberg Child Behaviour Inventory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensity</td>
<td>100.69 (17.41)b</td>
<td>101.62 (12.69)</td>
<td>126.93 (34.55)</td>
<td>107.57 (25.26)a</td>
</tr>
<tr>
<td>Problem</td>
<td>2.15 (3.36)c</td>
<td>3.23 (3.61)d</td>
<td>11.71 (10.10)c</td>
<td>8.00 (5.76)d</td>
</tr>
<tr>
<td>Parent Daily Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Problem</td>
<td>3.76 (2.76)</td>
<td>3.63 (3.26)</td>
<td>5.80 (4.95)</td>
<td>4.44 (3.75)</td>
</tr>
<tr>
<td>Mean Target</td>
<td>0.50 (0.56)</td>
<td>0.53 (0.74)</td>
<td>4.25 (4.20)</td>
<td>2.54 (2.74)</td>
</tr>
<tr>
<td>Parenting Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laxness</td>
<td>1.94 (0.71)eh</td>
<td>2.45 (0.88)a</td>
<td>2.56 (0.68)h</td>
<td>2.47 (0.57)</td>
</tr>
<tr>
<td>Over-reactivity</td>
<td>2.10 (0.78)fg</td>
<td>2.45 (0.89)f</td>
<td>3.25 (0.99)g</td>
<td>2.79 (0.86)g</td>
</tr>
<tr>
<td>Verbosity</td>
<td>2.58 (0.89)</td>
<td>2.82 (1.12)</td>
<td>3.31 (0.63)</td>
<td>3.12 (0.60)</td>
</tr>
<tr>
<td>Parenting Sense of Competence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>43.62 (6.61)</td>
<td>41.46 (6.94)</td>
<td>35.54 (8.17)</td>
<td>36.86 (7.69)</td>
</tr>
<tr>
<td>Efficacy</td>
<td>35.62 (5.44)</td>
<td>33.23 (3.68)</td>
<td>26.77 (6.67)</td>
<td>27.64 (6.50)</td>
</tr>
<tr>
<td>Parent Problem Checklist</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem</td>
<td>4.00 (3.92)</td>
<td>3.82 (3.25)</td>
<td>4.36 (3.63)</td>
<td>4.57 (4.26)</td>
</tr>
<tr>
<td>Intensity</td>
<td>38.46 (28.63)</td>
<td>43.46 (28.72)</td>
<td>29.64 (13.89)</td>
<td>28.07 (12.95)</td>
</tr>
<tr>
<td>Depression Anxiety Stress Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>3.15 (4.62)</td>
<td>1.69 (2.21)</td>
<td>7.07 (9.60)</td>
<td>5.29 (8.80)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.62 (0.87)</td>
<td>1.08 (1.89)</td>
<td>2.64 (3.56)</td>
<td>1.57 (2.38)</td>
</tr>
<tr>
<td>Stress</td>
<td>5.15 (4.04)</td>
<td>4.62 (4.09)</td>
<td>10.86 (8.47)</td>
<td>8.79 (7.12)</td>
</tr>
</tbody>
</table>

Note: Post = postintervention, Follow-up = 6-month follow-up; Cond \( \times \) Time \( F \) = Univariate \( F \) value for the condition by time interaction; Time \( F \) = Univariate \( F \) value for main effect for time; Mean Problem = Mean Problem score; Mean Target = Mean Targeted score. Means having the same superscript are significantly different at \( p < .05 \) by the \( t \) test.

\( ^a t(1, 13) = 2.46, p < .03; ^b t(1, 26) = 2.71, p < .01; ^c t(1, 13) = 3.49, p < .005; ^d t(1, 12) = 3.33, p < .01; ^e t(1, 12) = 2.88, p < .01; ^f t(1, 13) = 2.53, p < .05; ^g t(1, 26) = 2.39, p < .05. \)

\( ^*** p < .001, ^** p < .01, ^* p < .05. \)

Long-Term Intervention Effects
From postintervention to 6-month follow-up, there were no significant effects using mothers’ or fathers’ reports of parenting competence, parental adjustment and relationship adjustment. There were also no significant effects using fathers’ reports of child behaviour. However, a significant main effect for time was found using mothers’ reports (see Table 6) of child behaviour on the ECBI, \( F(2, 22) = 2.83, p = .05 \), such that mothers in the SD condition reported a significantly lower level of disruptive child behaviour on the ECBI at follow-up than at postintervention. For mothers in the ESD condition, there was no change from postintervention to follow-up on ratings of child behaviour using the ECBI. Furthermore, a significant Condition \( \times \) Time interaction, \( F(3, 20) = 3.47, p = .04 \), was found using mothers’ reports on
the Laxness and Over-reactivity subscales of the PS, such that mothers in the ESD reported an increase in their scores on Laxness and Over-reactivity from postintervention to follow-up whereas mothers in the SD condition reported a decrease in their scores on Over-reactivity from postintervention to follow-up. By follow-up, there was no significant difference between the two self-directed conditions on measures of Laxness and Over-reactivity.

**Clinical Significance of Improvement in Child Behaviour**

The Reliable Change Index (RCI; Jacobson & Traux, 1991) was used to assess the clinical significance of change. Using mothers’ ECBI Intensity scores to calculate RCI at postintervention, 69% \((n = 9)\) and 60% \((n = 9)\) of children in the ESD and SD conditions respectively showed clinically reliable improvements in their behaviour while none of the children in the WL condition reliably improved. These figures were maintained at 6-month follow-up. Similarly, using the ECBI Intensity score to compute RCI, 69% \((n = 9)\) and 57% \((n = 8)\) of the children in the ESD and SD conditions respectively showed clinically reliable improvements in their behaviour at follow-up in comparison to preintervention.

**Discussion**

The present findings add further empirical support attesting to the efficacy of a self-directed variant of behavioural family intervention with parents living in rural and remote areas with children evidencing early conduct-problem behaviour. As expected, both Triple P self-directed interventions produced significant short-term improvements in mother-reported child behaviour. Furthermore, a tiered result was obtained such that mothers in the ESD condition reported significantly lower levels of disruptive behaviour at postintervention than mothers in the SD condition, who in turn reported significantly lower levels of disruptive child behaviour in comparison to mothers in the WL condition. These findings are consistent with those obtained by Connell and colleagues (1997) in their evaluation of Enhanced Self-Directed Triple P with a sample of rural families. Also, the findings relating to the SD condition are consistent with those reported by Markie-Dadds and Sanders (in press) as well as with the evaluation of a self-directed intervention for stepfamilies by Nicholson and Sanders (1999). In comparison to Sanders, Markie-Dadds, et al. (2000), the SD condition in the present study led to significant improvements in mothers’ reports of child behaviour immediately postintervention and there was also evidence of continued improvement in mothers’ reports of children’s behaviour from postintervention to follow-up. This finding may be explained by the different samples used in the studies in contrast to the present sample (Markie-Dadds & Sanders, in press; Sanders, Markie-Dadds, et al., 2000).

With respect to the clinical significance of improvements in child behaviour, the active conditions produced similar results with 69% and 60% of children in the ESD and SD conditions respectively showing clinically reliable improvements in their behaviour. In contrast, none of the children in the WL condition showed clinically reliable improvement in their behaviour. These results indicate that for two thirds of the sample, clinically significant improvements in behaviour were achieved. This result suggests that the use of self-directed materials alone or in conjunction with telephone consultations is a viable and effective option, particularly
for families living in rural and remote locations with children displaying conduct-problem behaviour.

Partial support was found for hypothesis 2 with respect to parenting skills and parental efficacy. As anticipated, the ESD condition led to significantly more positive outcomes in comparison to the WL condition on the parenting measures. Specifically, on each of the measures of dysfunctional discipline practices, namely Laxness, Over-reactivity and Verbosity, significantly lower levels of dysfunction were evident in the ESD condition at postintervention in comparison to the SD and WL conditions. At postintervention, no significant differences were evident between the SD and WL conditions on measures of parenting skills. The failure of the SD condition to demonstrate more functional parenting practices and higher levels of parental efficacy at postintervention in comparison to the WL condition is in contrast to the results achieved by Markie-Dadds and Sanders (in press). Given that 60% of children in the SD condition evidenced clinically reliable change in their behaviour, the failure of the SD condition to produce significantly lower scores on measures of parental dysfunction in comparison to the WL condition at postintervention is perplexing.

This finding questions whether changes in parenting skills are the mechanism for improvement evidenced in child behaviour. Despite the lack of statistical significance, it is important to note that the mean scores reported on the PSOC Efficacy scale were well within normal limits for both the SD and WL conditions at pre- and postintervention. Although the ESD condition produced a significant improvement in parental efficacy, efficacy levels for all three conditions were within the normal limits at each time period. The null finding with respect to parenting strategies in the SD condition may have thus resulted from a ceiling effect and a consequent lack of statistical power to detect small improvements in efficacy. Inspection of the postintervention means for the SD condition also indicates that the scores for laxness and verbosity were well within the clinical range. Although the magnitude of change in the use of dysfunctional parenting practices and parental efficacy is not as large and significant as the change in disruptive child behaviour, parenting and efficacy beliefs are the most likely mechanism for change observed in child behaviour at postintervention.

Interestingly, at follow-up there were no significant differences evident between the ESD and SD conditions on measures of child behaviour. Improvements achieved immediately postintervention in the ESD condition were maintained at follow-up, whereas in the SD condition continued improvements in mothers’ ratings of disruptive child behaviour were evident from postintervention to follow-up. This finding is consistent with that of Sanders, Markie-Dadds, et al. (2000) who found that the SD condition failed to produce significant short-term improvements in child behaviour in comparison to a WL condition. However, the SD condition showed a significant decrease in disruptive behaviour from postintervention to follow-up such that the child outcomes produced with the SD intervention were not significantly different to those achieved with practitioner-assisted interventions. It appears that the improvements in child behaviour achieved with the SD condition occur slowly and gradually whereas for the ESD condition and other practitioner-assisted behavioural family interventions (e.g., Sanders, Markie-Dadds, et al., 2000), the improvements are rapid and immediate. This notion of difference in rate of change is supported by the work of Seymour, Brock, During, and Poole (1989) who compared the effectiveness of a written parent guide and a practitioner-delivered intervention to reduce sleep
disruption in young children. Statistically, both programs were more effective than a control and could not be differentiated from one another. However, closer inspection of behaviour diaries completed by mothers indicated that behaviour change occurred rapidly and immediately in the practitioner-assisted approach but slowly and gradually over the 4-week treatment period in the written materials condition. 

This finding suggests that practitioner presence may motivate, support and encourage parents to actively work through the program as recommended in a week-by-week structure. However, when completing the program without assistance, parents may take longer than the allocated week to work through each module and may not complete as many practice tasks, thereby extending the duration of the program and slowing down the speed with which positive outcomes are achieved.

Hypotheses 3 and 4 predicted that there would be short- and long-term improvements in relationship and parental adjustment for both the ESD and SD conditions. However, these hypotheses were not supported, with no significant differences found between conditions at postintervention or follow-up. While this result is consistent with the findings of Sanders, Markie-Dadds, et al. (2000), it contradicts findings reported by Connell et al. (1997). In this latter study, mothers in a telephone-assisted self-directed program reported significantly less depression and stress at postintervention and follow-up in comparison to mothers in a WL condition. Inspection of the preintervention scores on the DASS indicates that mean scores fell within the normal range and hence floor effects prevented the demonstration of treatment effects on measures of parental adjustment. With respect to the PPC, a lack of power to detect the small changes evident on this measure may have been responsible for the null finding resulting in a Type II error (Tabachnick & Fidell, 1989). Although visual inspection of the mean scores indicates a decrease in couple conflict over parenting from pre- to postintervention, the magnitude of change was not sufficient to be significant. In addition, at preintervention, mean scores on the PPC were only moderately elevated, again indicating that floor effects may have precluded a significant finding on this measure.

As expected, mothers reported high levels of consumer satisfaction with both of the active interventions. However, consistent with hypothesis 5 and other researchers (Nicholson & Sanders, 1999; Sanders, Markie-Dadds, et al., 2000; Webster-Stratton, Kolpacoff, & Hollinsworth, 1988), mean satisfaction ratings were significantly higher for the practitioner-assisted version of the program. Again, this finding supports the notion that parent ratings are influenced by the choices they see themselves as having, and when parents have the chance to do a practitioner-assisted program, the self-directed program is rated less favourably. However, in the present study, even though a practitioner-assisted version was available, the satisfaction rating for the SD intervention was markedly higher (i.e., $M = 65.64$ vs. $M = 57.65$) than that reported in Sanders, Markie-Dadds, et al. (2000). Consequently, other factors such as the extent of improvement in child behaviour at postintervention may influence mothers’ ratings of satisfaction. In the present study, two thirds of the children demonstrated clinically reliable improvement in their behaviour in comparison to 47% of children in Sanders, Markie-Dadds, et al. (2000). It is not surprising that when improvements in child behaviour occur, parents rate programs favourably.

The results from the present study should be interpreted with caution as mothers’ observations and reports of child behaviour were unable to be confirmed by independent behavioural observations. However, the study utilised two psychometrically sound parent-report measures of child disruptive behaviour (i.e., ECBI and PDR) that
have strong correlations with other indices of child functioning, including independent observation. In addition, fathers’ ratings of child behaviour on each of the four dependent measures were highly correlated with mothers’ ratings (ranging from .59 to .82), further attesting to the reliability of the mothers’ reports of child behaviour.

The self-directed program relied on parents being able to read a parenting text and a companion workbook. Although considerable effort was 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 (e.g., Bigelow & Lutzker, 1998; Sanders, Markie-Dadds, & Turner, 1996). In a further attempt to improve the accessibility of the program, core information from the parenting text and workbook have recently been combined into a single resource, resulting in less reading for parents (Markie-Dadds, Turner, & Sanders, 1998). A videotape demonstrating core parenting skills is also now available (Sanders et al., 1996).

The present findings show that telephone-assisted interventions appear to be useful interventions, particularly to families in rural and remote areas for whom access to face-to-face services is limited. Another application of the self-directed Triple P intervention is for parents of children with conduct problems who are having to wait for clinical services. Many of these families are high risk for dropping out and not presenting to initial appointments. An initial telephone screen could be conducted to determine the suitability of the family. Parents could be offered a self-help program while they are waiting for their initial appointment. If they are interested in completing the program and there are no other contraindications, they could complete a pre-assessment package. On receipt of the assessment, they could be sent the self-directed program and given an initial appointment time at a later date, after they have had sufficient time to complete the self-directed program. During the waiting period parents could be contacted and provided with the minimally sufficient level of consultation support to motivate their completion of the self-directed program.

Acknowledgments

The study was completed in Western Australia with the assistance of Jackie Smith and Elaine Fordham from the McCall Centre, Department of Families and Children’s Services. Our thanks go to Elaine Fordham for collecting the assessment measures and providing the telephone consultations that constituted the enhanced component of the self-directed intervention.

References


of Abnormal Child Psychology, 19, 553–567.


