

# A Randomized Controlled Trial Evaluating the Efficacy of Triple P Online with Parents of Children with Early-Onset Conduct Problems

Matthew R. Sanders

Sabine Baker

Karen M. T. Turner

Parenting and Family Support Centre, School of Psychology, University of Queensland, Brisbane, Australia

---

## Abstract

*Objective:* This study examined the efficacy of Triple P Online (TPOL), an eight-module intensive online positive parenting program for parents of children with early-onset disruptive behavior problems.

*Method:* One hundred and sixteen parents with 2-9-year-old children displaying early-onset disruptive behavior difficulties were randomly assigned to either the intervention condition ( $N = 60$ ) or an internet-use-as-usual control group ( $N = 56$ ).

*Results:* At post-intervention assessment, parents receiving the internet intervention TPOL had significantly better outcomes on measures of problem child behavior, dysfunctional parenting styles, parents' confidence in their parenting role, and parental anger. At 6-month follow-up assessment intervention gains were generally maintained, and in some cases enhanced. Consumer satisfaction ratings for the program were high.

*Conclusions:* Internet-delivered self-help parenting programs appear to make a valuable contribution to a comprehensive public health approach to parenting support.

**Keywords:** Parenting; Internet; Online; Child behavior

---

## Introduction

The prevention of potentially detrimental parenting practices is an important public health priority in light of the prevalence and costs, both human and financial, of inadequate parenting (Kirp, 2011). The need for better access to evidence-based parenting interventions has been widely recognized by professional bodies and policy informing groups (e.g., American Psychological Association, 2009; National Institute of Clinical Excellence and Social Care, 2006; National Research Council and Institute of Medicine, 2009); influential international organizations (e.g., United Nations Office on Drugs and Crime, 2009; World Health Organization, 2009) and parents as consumers (Sanders & Kirby, 2012).

To truly impact on the prevalence and burden of dysfunctional parenting, as with other mental health issues, integrated prevention and treatment approaches are required which harness the opportunities provided by technology, nontraditional service delivery and self-help interventions (Kazdin & Blase, 2011). Over the past decade, the adoption of a public health approach has increased the range of parenting interventions available to communities for the prevention and management of disruptive behavior difficulties. The Triple P-Positive Parenting Program is an example of a tiered, integrated, multilevel system of parenting interventions based on social learning, cognitive-behavioral and self-regulation theory (see Sanders, 2008, 2012). It incorporates five levels of intervention of increasing intensity and narrowing population reach, ranging from media and information strategies (Level 1) to intensive cognitive-behavioral family intervention (Level 5). A range of delivery formats have been shown to be effective including small and large group programs (Morawska, Haslam, Milne, & Sanders, 2011; Zubrick et al.,

2005), individual face-to-face (Sanders, Markie-Dadds, Tully, & Bor, 2000; Turner & Sanders, 2006), and telephone-based and self-directed programs (Markie-Dadds & Sanders, 2006; Morawska & Sanders, 2007). These interventions range from brief, low intensity “light touch” interventions such as age and topic-specific 2-h parent discussion groups (e.g., Joachim, Sanders, & Turner, 2010) to more intensive individual and group programs for complex problems such as oppositional defiant disorder, or challenging behavior in children with developmental disabilities (Sanders et al., 2000, 2004). Although these formats have increased options available for parents and practitioners, only a small proportion of mothers and even fewer fathers that could benefit from parenting programs actually participate (Sanders, Markie-Dadds, Rinaldis, Firman, & Baig, 2007). Completing a parenting program is still not socially normative, and numerous barriers can hinder parental involvement and program completion (Sanders & Wilkinson, 2012). These include logistical problems (e.g., transportation difficulties, work schedule conflicts, availability and affordability of childcare), mistrust in providers due to negative prior experiences, perceived ethnic and cultural barriers, perceived social stigma (Prinz & Sanders, 2007), and limited access, particularly in rural areas (Radey & Randolph, 2009).

The internet has been proposed as an alternative vehicle for delivering evidence-based parenting programs as its usage is widespread and increasing. For example, in 2010, four in five Australian households had internet access, prevalent across all socioeconomic groups (Australian Research Council, 2010). The internet has the capacity to bring parenting programs to a much broader range of parents by: 1) overcoming barriers common to face-to-face services; 2) destigmatizing and normalizing parenting assistance; and 3) harnessing the power of video-based modeling, interactivity and personalization (Self-Brown & Whitaker, 2008). Compared to more traditional face-to-face parenting programs, internet delivery has the potential to increase the reach of parenting programs resulting in greater cost-efficiency and enhanced capacity to tailor program content to the needs and interest of parents. It is also an increasingly popular method of accessing parenting information and advice in comparison to traditional approaches such as home visits, therapy and parenting groups (Metzler, Sanders, Rusby, & Crowley, 2012).

Contrary to the view that internet programs are mainly suitable for well educated, middle class families, several studies show widespread use of the internet by disadvantaged and vulnerable parents including young, single parents (Radey & Randolph, 2009). Very high levels of interest in and acceptance of video and online parenting programs have been found among low-income child welfare populations of African American and Hispanic families (Love, Sanders, Metzler, Prinz, & Kast, in press) and ethnically diverse families (Metzler et al., 2012). Research on internet programs targeting health problems has exploded in recent years (Glasgow, 2007), and interactive online interventions have shown substantial effects on a broad range of psychosocial and health outcomes (Barak, Hen, Boniel-Nissim, & Shapira, 2008) with effect sizes comparable to face-to-face delivery.

Given the popularity and widespread use of the internet for parenting and health information and advice, it is not surprising that there has been a proliferation of parenting websites. These sites vary in scope and quality and include government sponsored sites on parenting and child health; commercial sites selling child and baby products; sites developed by television and radio networks promoting parenting shows; social networking sites for parents; parenting apps for portable devices; and practitioner sites promoting professional services. However, the sheer volume of information available can be confusing for parents. Furthermore, the parenting advice offered typically lacks a clear theoretical or scientific evidence base and can be contradictory, making it difficult for parents to differentiate between high and poor quality information (Plantin & Daneback, 2009).

Despite strong advocacy for use of the internet to enhance outcomes in parenting programs, there is little controlled evidence attesting to the efficacy of this approach. There is some evidence of positive outcomes following online interventions for parents of infants (e.g., Baggett et al., 2010; Hudson, Campbell-Grossman, Fleck, Elek, & Shipman, 2003), and an online variant of the Incredible Years program successfully engaged parents but yielded modest outcomes (Taylor et al., 2008). There is also evidence that a parenting program delivered via CD-ROM was effective in reducing child behavior problems and increasing parental satisfaction (Cefai, Smith, & Pushak, 2010). However, there is a distinct lack of randomized controlled research, particularly in the area of child emotional and behavioral problems, and therefore a pressing need to rigorously evaluate the efficacy of parenting support delivered online. To

date only one randomized study from Sweden (Enebrink, Hogstrom, Forster, & Ghaderi, 2012) has demonstrated that child conduct problems and dysfunctional parenting improve as a result of an online parenting program. However, this program provided additional limited assistance and feedback from research staff to complete the program (approximately 5 h per family).

This project builds on the extant literature by evaluating the efficacy of an established evidence-based parenting intervention for parents of children with early-onset conduct problems, the Triple P-Positive Parenting Program, delivered online. Triple P Online (TPOL; Turner & Sanders, 2011) corresponds to a Level 4 intervention in Triple P's multilevel system (Standard Triple P; Sanders, Markie-Dadds, & Turner, 2012) which is an intensive parent skills training program designed for parents of children with moderate to severe conduct problems. This project aimed to investigate consumer outcomes, program acceptability, and patterns of usage of the online program and resources. It was hypothesized that, compared to parents in an internet-use-as-usual control condition, parents in the TPOL condition would report 1) lower levels of disruptive child behavior; 2) lower levels of dysfunctional parenting; 3) high parental efficacy in managing their child's behavior; 4) improved parental adjustment, lower parental anger, and lower levels of conflict over parenting. It was also hypothesized that all intervention gains would be maintained at 6-month follow-up assessment.

## Method

### *Participants*

Participants were 116 parents with a 2-9-year-old child ( $M = 4.7$  years) with elevated levels of disruptive behavior. Target children were more likely to be male (67%). Family composition was explored, with the majority (85%) living in an original family, and the number of children at home ranging from 1 to 5 ( $M = 2.2$ ). The ethnic group most commonly identified with was Australian (91%). Respondents were mainly mothers (91%), living with a partner (married or de facto 90%). The mean age for parents was 37.37 years (range 23-50 years). Participants reported their highest level of education: 17% had completed high school or less, 25% had technical college or apprenticeship qualifications, and 58% had a university degree. Most participants were employed (34% were not in paid employment). Most families (76%) had an income at or above the Australian median (Australian Bureau of Statistics (ABS), 2009); 15% had experienced a time during the previous 6 months where their household could not meet essential expenses; 13% indicated they sometimes worried about whether food would run out before they could afford more.

The majority of parents reported accessing the internet every day (80%), or several times a week (15%), most of them spending many hours per week online (more than 10 h: 29%; 5-10 h: 29%; 2-5 h: 29%). Most participants reported feeling 'very' or 'totally' computer confident (81%), and 'very' or 'totally' internet confident (81%). Table 1 details the key demographic characteristics of the sample.

Recruitment was conducted in February and March 2010, through community outreach in mass media, online parenting forums, schools and childcare settings in Brisbane, Australia. Parents self-identified as having difficulties with their child's disruptive behavior. After initial contact, parents completed a 10-min telephone screening interview to inform them of the study requirements and assess eligibility. Eligibility criteria were: (1) a 2-9-year-old child for whom parents reported elevated levels of child behavior problems on the Eyberg Child Behavior Inventory (Eyberg & Pincus, 1999); (2) access to a computer and broadband internet connection; and (3) the parent's ability to read English at Year 5 level. Exclusion criteria were: (1) the child had an intellectual or developmental disability; (2) the child was taking medication or in regular contact with a professional for behavioral or emotional problems; or (3) the parents were receiving treatment for psychological or relationship problems. A total of 279 parents completed the telephone screening interview and of these, 127 met eligibility criteria, but 11 of these did not complete pre-assessment. The most common reason for exclusion was child behavior difficulties not being sufficiently elevated.

**Table 1**  
Demographic characteristics of the sample.

Variable	Triple P Online (n = 60)		Control (n = 56)		F(df)	p
	M	SD	M	SD		
Child age (years)	4.92	1.76	4.41	1.58	2.640 (1)	.107
Respondent age (years)	37.62	4.49	37.11	4.84	3.46 (1)	.557
No. of children at home	2.08	.53	2.33	.86	3.404 (1)	.068
	n	%	n	%	$\chi^2$	p
Child gender					.429	.512
Male	42	70	36	64		
Female	18	30	20	36		
Respondent						.744
Mother	54	90	52	93		
Father	6	10	4	7		
Family composition					3.187	.364
Original family	50	83	49	87		
Step-family	3	5	2	4		
Sole parent	4	7	5	9		
Other	3	5	0	0		
Marital status					.234	.628
Married/defaulto	53	88	51	91		
Single/divorced/separated	7	12	5	9		
Ethnic group					.691	.406
Australian	53	88	52	93		
Other	7	12	4	7		
Education					.188	.910
High school	10	17	10	18		
Technical college	16	27	13	23		
University	34	57	33	59		
Employment					.015	.903
Full time/part time	39	68	37	70		
Unemployed	21	32	19	30		
Annual family income <sup>a</sup>					.050	.822
<\$67,600	15	25	13	23		
≥\$67,600	45	75	43	77		
Internet use					2.655	.448
<2 h per week	9	15	5	9		
2–5 h per week	16	27	18	32		
5–10 h per week	20	33	14	25		
>10 h per week	15	25	19	34		

Note. F = univariate ANOVA effect for condition;  $\chi^2$  = Pearson's chi-square (where expected frequencies are too low for chi-square, 2-sided significance for Fisher's Exact Test is reported).

<sup>a</sup> Stratified as above or below the median Australian household income (ABS, 2009).

## Measures

### Family background

Family background questionnaire (FBQ). Family demographic data were collected using the FBQ adapted from the Western Australian Child Health Survey (Zubrick et al., 1995). Parents also completed questions about their confidence and frequency of use of computers and the internet.

### Child behavior and adjustment

*Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999)*. The ECBI is a 36-item measure of perceptions of disruptive behavior in children aged 2e16 years, including frequency of disruptive behaviors (Intensity scale) and the number of behaviors parents list as a problem for them (Problem scale). The scales have good test-retest reliability ( $r = .80$  and  $.85$ , respectively; Funderburk & Eyberg, 1989); and discriminate between children with and without disruptive behavior problems (Burns & Patterson, 2001). Both scales had good internal consistency in this sample ( $\alpha = .81$  and  $.75$  respectively).

*Strengths and Difficulties Questionnaire (SDQ; Goodman, 1999)*. The 25-item SDQ measures perceptions of prosocial and difficult behaviors in children aged 3-16 years. It has good test-retest reliability ( $r = .85$ ) and has been found to discriminate well between low-risk and high-risk samples (Goodman & Scott, 1999). Five scale scores are computed: Emotional Symptoms, Conduct Problems,

Inattention/Hyperactivity, Peer Problems, and Prosocial Behavior. In this sample, internal consistency of the subscales was varied ( $\alpha = .63$ ,  $\alpha = .51$ ,  $\alpha = .71$ ,  $\alpha = .56$  and  $\alpha = .68$  respectively).

*Observation of child disruptive behavior.* The primary caregiver and target child were observed during a 40-min videotaped clinic observation including different parenting tasks-joint free-play; clean-up compliance task; unstructured waiting time; adult-led teaching task (i.e. the parent instructs the child in a task they cannot initially complete without guidance), play with play-dough; preparation for transition; and coping with competing demands (i.e. the parent completes questionnaires while the child is asked to play independently). These observation settings were selected to replicate experiences that occur regularly in family life (Sanders et al., 2000).

Individual child disruptive behaviors were coded in 10-s observation intervals using an adapted version of the Family Observation Schedule (FOS; Sanders, 2000). A composite measure, percentage of intervals with observed child disruptive behaviors, was used to evaluate the effects of the intervention on levels of disruptive behavior. It consists of noncompliance, complaint, aversive demands, aversive verbal, negative contact, oppositional, and interrupt categories. Recorded observations were coded by four trained research assistants who were naïve to families' intervention condition and assessment phase. Inter-rater reliability assessed on a randomly selected 20% of observation sessions was satisfactory (mean  $\kappa = .61$ , SD = .16).

### *Parenting style*

*Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993).* This 30-item questionnaire measures three dysfunctional discipline styles: Laxness (permissive discipline), Over-reactivity (authoritarian discipline, anger, meanness and irritability) and Verbosity (long reprimands or reliance on talking). The scale has good test-retest reliability ( $r = .83$ ,  $.82$ , and  $.79$ , respectively) and has been found to discriminate between parents of clinic and nonclinic children; and to correlate with observational measures of dysfunctional discipline. In the current sample, internal consistency was good for the Laxness ( $\alpha = .83$ ) and Over-reactivity scales ( $\alpha = .79$ ), and modest for the Verbosity scale ( $\alpha = .55$ ).

### *Parenting confidence*

*Parenting Tasks Checklist (PTC; Sanders & Woolley, 2005).* This checklist assesses parents' confidence in successfully dealing with 14 difficult child behaviors like whining and temper tantrums (Behavior Self-efficacy), and in dealing with difficult behavior in 14 different settings such as shopping and having visitors (Setting Self-efficacy). Both subscales showed good internal consistency in this sample ( $\alpha = .94$  and  $.88$ , respectively).

### *Parental adjustment*

*Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995).* The DASS-21 is a short form of the original 42-item questionnaire that assesses symptoms of depression, anxiety, and stress in adults. It evidences good convergent and discriminant validity (Henry & Crawford, 2005), and the internal consistency of the scales was moderate to good in this sample (Depression  $\alpha = .87$ , Anxiety  $\alpha = .69$ , Stress  $\alpha = .85$ ).

### *Parental anger*

*Parental Anger Inventory (PAI; Hansen & Sedlar, 1998).* The PAI assesses anger experienced in response to misbehavior in children aged 2-12 years. Parents rate 50 child-related situations as problematic or not (Problem score) and the degree of anger evoked by each situation (Intensity score). The Problem and

Intensity scales have moderate reliability ( $r = .80$  and  $.79$ , respectively; Sedlar & Hansen, 2001), and showed good internal consistency ( $\alpha = .86$  and  $.95$  respectively) in the current sample.

### ***Conflict over parenting***

*Parent Problem Checklist (PPC; Dadds & Powell, 1991)*. This 16-item questionnaire measures inter-parental conflict over child rearing (e.g., the extent to which parents disagree over rules and discipline, have open conflict over parenting issues, and undermine each other's relationship with their children). The PPC yields an index of the number of problems (Problem scale), which has high test-retest reliability ( $r = .90$ ). The version used includes an intensity rating for the problems listed (Extent scale). Both subscales had good internal consistency in this sample ( $\alpha = .81$  and  $.91$  respectively).

### ***Intervention use***

An online reporting site was built to track and record patterns of program use. The parameters captured include website access date and time spent on each module.

### ***Client satisfaction***

*Client Satisfaction Questionnaire (CSQ; Sanders et al., 2012)* is a 13-item survey that measures consumer satisfaction with the quality of service; how well the program met the parent's and child's needs, increased the parent's skills and decreased the child's problem behaviors; and whether the parent would recommend the program. The CSQ has high internal consistency ( $\alpha = .96$ ; Sanders et al., 2000), which was evident in the current sample ( $\alpha = .95$ ). Additional items relating to the online program assessed reactions to the content, design, activities, video clips, worksheets and workbook; and the helpfulness of inbuilt features (e.g., podcasts, SMS and email summaries, and SMS reminders of weekly goals).

### ***Design***

This study was a randomized, controlled trial employing a two group (group: TPOL vs internet-as-usual control) x Time (time: pre-intervention, post-intervention, 6-month follow-up) repeated measures design. Families were randomly assigned to either the online intervention condition or a control condition (allowing internet use as usual). Participants completed assessments at three time points: pre-assessment (on enrollment in the study), post-assessment (approximately 12 weeks later), and at 6-month follow-up.

### ***Procedure***

This project followed the National Health and Medical Research Council's ethical guidelines for participation of human subjects. Ethics approval was received through the University of Queensland Behavioral and Social Sciences Ethical Review Committee (project number: 2009000302).

A list of computer-generated random numbers was created to enable random assignment to condition. Once deemed eligible through the telephone screening process, parents were emailed a link to complete the pre-intervention assessment and informed consent process online. Participants were assigned sequentially to condition (in order of initial contact), stratified for income (above or below the Australian median household income) and child gender. In addition, a randomly selected subsample of 50% of participants was assigned to complete a clinic observation procedure. The online program was offered free of charge and families received a total of \$20 in shopping vouchers as an incentive for completing post- and follow-up assessments.

Parents assigned to the intervention condition were emailed individual log in details and were prompted to complete the program within 3 months (at which time post-assessment was conducted regardless of the number of modules completed). Access to the program continued until completion of the

6-month follow-up assessment, although very few parents continued use after post-assessment. Participants were contacted by a research assistant 2 weeks and again 5 weeks after commencement to check they were not experiencing any technical problems and were aware of the program features. There was also a reminder call and email if they had not logged on to the program for 3 weeks. Phone calls took an average of 5 min and no professional advice or guidance in regard to program content was given. There was an average contact time of 11 min per participant over the course of the trial.

On completion of the study (i.e., after 9 months), participants in the internet-as-usual control group were offered access to the Triple P Online intervention.

## ***Intervention***

Triple P Online (Turner & Sanders, 2011) is an eight-module, interactive self-directed positive parenting program delivered via the internet. The intervention provides instruction in the use of 17 core positive parenting skills (e.g., descriptive praise, quiet time, time-out). The content is presented in sequenced modules: 1) What is positive parenting?; 2) Encouraging behavior you like; 3) Teaching new skills; 4) Managing misbehavior; 5) Dealing with disobedience; 6) Preventing problems by planning ahead; 7) Making shopping fun; and 8) Raising confident, capable kids. The program content is presented in a linear format (i.e. module completion opens access to the next module), which allows users to review previously completed modules.

A distinctive feature of this online interactive program is its emphasis on promoting parental self-regulation. This is achieved through sound instructional design, dynamic and demonstration-driven video content, teaching parents self-management skills (goal setting, self-evaluation). It focuses on increasing parental self-efficacy (beliefs about capacity to execute daily parenting tasks), personal agency (attributing change to one's own efforts) and self-sufficiency (independent problem solving). It also prompts parents' ongoing participation, without the need for personal contact with a clinician.

Triple P Online incorporates elements designed to engage participants and improve knowledge acquisition, positive self-efficacy, and behavior activation. These elements include: 1) user-friendly navigation; 2) video-based modeling of parenting skills, and diverse parent 'vox pops' describing their experiences; 3) personalized content including goal setting, review and feedback; 4) interactive exercises to prompt parental problem solving, decision making and self-regulation; 5) downloadable worksheets and podcasts to review session content; and 5) automated text messaging and email prompts to increase the likelihood of program completion. The program also provides parents with a customizable and printable workbook that records program content, parents' goals, and responses to exercises. Cultural sensitivity is addressed through the use of multicultural video models and the self-regulatory framework that enables parents to select goals informed by their own values and traditions.

## **Results**

### ***Preliminary analyses***

To check for adequate randomization, preliminary analyses were conducted to confirm the equivalence of the intervention and control groups at pre-test on all demographic variables using analysis of variance (ANOVA) for continuous variables, and chi-square tests for categorical variables (see Table 1). ANOVA was also conducted on all outcome variables (means are presented in Table 2). No significant differences were found between conditions on any variable, indicating that the randomization resulted in comparable groups on sociodemographic measures and the intensity of presenting problems.

### ***Retention rates***

Of the 127 eligible parents, 116 parents completed pre-assessment questionnaires and were randomly allocated to TPOL ( $n = 60$ ) or the internet-use-as-usual control condition ( $n = 56$ ). Two TPOL parents were

**Table 2**  
Short-term intervention effects: intervention and control conditions at pre- and post-intervention.

Measure	Triple P Online				Control				ANCOVA F (df)	p	d	
	Pre		Post		Pre		Post					
	M	SD	M	SD	M	SD	M	SD				
ECBI	Problem	22.13	4.82	13.10	6.33	21.75	5.57	18.00	7.53	18.84 (1,112)***	.000	.71
	Intensity	154.35	19.08	121.05	22.09	152.46	20.06	142.09	25.20	30.69 (1,112)***	.000	.89
SDQ	Conduct	3.35	1.44	2.25	1.57	3.73	1.92	3.23	1.79	9.72 (1,109)**	.002	.58
	Emotion	2.90	2.27	2.17	1.98	2.89	2.02	3.09	2.16	9.56 (1,109)**	.003	.44
Observed child disruptive behavior <sup>a</sup>		14.30	12.79	8.71	6.54	10.00	7.42	8.60	8.52		ns	
PS	Laxness	2.76	.83	2.36	.67	2.98	.84	2.79	.93	6.14 (1,111)*	.015	.53
	Over-reactivity	3.71	1.00	3.03	.98	3.81	.75	3.61	.92	16.07 (1,111)***	.000	.61
	Verbosity	3.95	.96	3.38	.97	4.07	.76	3.89	.82	8.57 (1,111)**	.004	.57
PTC	Behavior self-efficacy	61.30	17.85	81.07	12.34	58.99	16.74	67.49	19.61	20.85 (1,112)***	.000	.84
	Setting self-efficacy	78.92	11.81	88.41	8.25	76.39	13.11	81.46	13.23	12.01 (1,112)**	.001	.64
DASS-21	Depression	7.03	8.16	5.63	7.09	4.96	5.94	4.86	6.43		ns	
	Anxiety	4.43	5.66	3.50	5.57	3.50	4.39	2.96	3.76		ns	
	Stress	14.4	8.81	10.60	7.93	13.89	7.56	12.04	7.67		ns	
PAI	Problem	26.02	7.59	18.82	8.53	23.98	7.92	21.32	9.70	9.36 (1,112)**	.003	.27
	Intensity	135.22	34.44	116.38	38.15	133.14	35.17	127.25	36.36	5.79 (1,112)*	.018	.29
PPC	Problem	5.79	3.77	4.74	3.60	5.29	3.64	5.20	3.88		ns	
	Extent	39.30	20.35	34.08	19.01	35.53	16.48	36.53	18.14		ns	

Note. Pre = pre-intervention; Post = post-intervention; F = ANCOVA univariate effect for condition (only reported where the multivariate effect was significant); d = effect size; ECBI = Eyberg Child Behavior Inventory; SDQ = Strengths and Difficulties Questionnaire; PS = Parenting Scale; PTC = Parenting Tasks Checklist; DASS-21 = Depression Anxiety Stress Scales-21; PAI = Parental Anger Inventory; PPC = Parent Problem Checklist (N.B. intervention n = 53 and control n = 51 due to single family status). \*p < .05; \*\*p < .01; \*\*\*p < .001.

<sup>a</sup> Completed with a subset of participants (n at T2 = 41).

unable to commence the program but are included in all analyses as they completed pre-assessment. Questionnaire assessment was completed by 107 participants (intervention  $n = 57$ , control  $n = 50$ ) at post-assessment, representing a very high retention rate of 92%. The 6-month follow-up assessment was completed by 100 participants (86%; intervention  $n = 52$ , control  $n = 48$ ). Of the 54 parents that had completed the clinic observation procedure at pre-assessment (intervention  $n = 29$ , control  $n = 25$ ), 83% completed it at post-assessment and 69% at follow-up.

There were no significant differences in retention rates from pre- to post-intervention  $p = .311$  (2-sided Fisher's Exact Test) and from pre-intervention to follow-up  $\chi^2(1) = .022$ ,  $p = .882$  between groups. Reasons for non-completion included a lack of time, changes in family circumstances, and no longer being able to commit to the study requirements.

### Short-term intervention effects

The analytic plan used the most stringent approach, with analyses conducted as intent-to-treat analyses (ITT), that is, including data for all participants who completed pre-assessment, regardless of whether they commenced, completed the intervention, or completed the post-assessment or follow-up. Calculations were conducted using the last-observation-carried-forward method for missing data (Kendall, Flannery-Schroeder, & Ford, 1999).

To evaluate short-term intervention effects, differences between the intervention and control groups were examined using a series of two-group multivariate and univariate analyses of covariance (MANCOVAs and ANCOVAs), with post-intervention scores as dependent variables and pre-assessment data included as covariates. MANCOVAs were conducted on each set of conceptually related dependent variables: parent-reported child behavior (ECBI Problem and Intensity scales); child adjustment (SDQ Emotional Symptoms, Conduct Problems, Inattention/Hyperactivity, Peer Problems, and Prosocial Behavior scales); parenting style (PS Laxness, Over-reactivity and Verbosity scales); parental confidence (PTC Behavior Self-efficacy and Setting Self-efficacy scales); parental adjustment (DASS-21 Depression, Anxiety and Stress scales); parental anger (PAI Problem and Intensity scales); conflict over parenting (PPC Problem and Extent scales). In cases where multivariate effects were found, ANCOVAs were conducted and univariate F values examined to determine which variables contributed to the multivariate effect. Completer analyses were conducted for the observational measures given a reduced sample size due to

some recording difficulties. ANCOVAs were conducted on FOS scores of observed disruptive child behavior. Table 2 contains descriptive statistics for both conditions at pre- and post-intervention, as well as univariate  $F$  values and effect sizes (Cohen's  $d$ ) for all significant condition effects.

### *Child behavior and adjustment*

Analysis of ECBI Problem and Intensity scores using MANCOVA revealed a significant condition effect,  $F(2,111) = 15.297, p = .000$ . Univariate tests showed a significant effect for both scales, with TPOL parents reporting significantly lower rate (Problem scale) and frequency (Intensity scale) of behavior problems at post-intervention than controls, with large effect sizes evident. In terms of child adjustment, multivariate analysis of the SDQ subscales also revealed a condition effect,  $F(5,105) = 3.690, p = .004$ , with significant univariate effects for the Conduct and Emotion scales. Again, parents in the intervention condition reported significantly reduced behavioral and emotional problems at post-intervention in comparison to controls, with medium effect sizes. There were no significant univariate effects for Hyperactivity, Peer Problems, or Prosocial Behavior. Analysis of observed child disruptive behavior revealed no significant condition effects,  $F(1,38) = .983, p = .328$ . Levels of observed negative child behaviors were low from the outset.

### *Parenting style*

MANCOVA revealed a significant condition effect for parenting style on the PS,  $F(3,109) = 5.591, p = .001$ . Univariate analyses indicated that intervention group parents reported significantly lower use of dysfunctional parenting in each of the Laxness, Over-reactivity and Verbosity domains than control group parents. The effect sizes were medium.

### *Parenting confidence*

A multivariate condition effect was found for parents' confidence on the PTC Behavior Self-efficacy and Setting Self-efficacy scales,  $F(2,111) = 10.506, p = .000$ . Univariate analyses indicated that parents receiving TPOL reported significantly greater confidence on both scales at post-assessment than control parents. A large effect size was evident for confidence in managing problem child behaviors and a medium effect size for managing difficult behavior in varied settings.

### *Parental adjustment*

No significant multivariate condition effect was found for parents' DASS-21 Depression, Anxiety and Stress scores,  $F(3,109) = .973, p = .408$ , as scores were not elevated from the outset and means for both groups fell in the normal range at pre-assessment.

### *Parental anger*

A significant condition effect was found for the PAI Problem and Intensity scales,  $F(2,111) = 5.911, p = .004$ . This was explained through univariate tests showing that the intervention group displayed significantly fewer problematic situations (Problem scale) and lower intensity of elicited anger (Intensity scale) following TPOL than controls, with small effect sizes.

### *Conflict over parenting*

There was no significant multivariate effect for condition on the PPC Problem and Extent scales,  $F(2,99) = 2.253, p = .11$ . Mean scores on the Problem scale for both groups fell just outside the normal range at pre-assessment and only the intervention group fell within the normal range at post-assessment.

### **Intervention use**

Of the 58 parents who began the program (i.e. logged on at least once), 25 (43%) had completed all eight modules at post-assessment. All participants were allowed to continue using the program until their 6-month follow-up assessment, by which time 27 (47%) had completed all eight modules. Average program completion time was 5.9 h (range 2.3-13.2). Users logged on an average of 10 times (range 6-23) and completed the program in 98 days (range 48-264). Average module completion time ranged from 40 min for Module 7-74 min for Modules 1 and 4. Table 3 provides a breakdown of intervention use and completion rates at 6-month follow-up.

### **Client satisfaction**

Parents in the intervention group reported high levels of satisfaction with the online parenting program as measured by the CSQ, with a mean score of 68.55 out of 91 (SD = 13.65). Ninety-one percent of participants rated the quality of the service they received as at least 'good' and 88% were at least 'satisfied' with the program.

### **Clinical significance of change**

The key child and parent dependent measures showing significant condition effects were explored for clinical significance of change using two methods: chi-square analyses of the proportion of participants moving from the clinically elevated to nonclinical range (Kendall, Marrs-Garcia, Nath, & Sheldrick, 1999), and a Reliable Change Index (Jacobson & Truax, 1991) that examined the extent to which pre-post changes were reliable or unlikely to be due to chance (i.e. change score in excess of 1.96 standard errors of measurement). Table 4 contains descriptive statistics and  $\chi^2$  values for measures of reliable and clinical change. There was significantly greater movement from the clinically elevated to nonclinical range for the ECBI (Intensity and Problem scores), SDQ (Conduct and Emotional scales), PS (Laxness), and the PTC (behavior and setting) for the TPOL group. Significantly greater clinically reliable change was also demonstrated for ECBI (Intensity and Problem Scores), SDQ (Emotion Score), PS (Over-reactivity Scale), PTC (Behavior Scale), PAI (Problem and Intensity Scores).

### **Maintenance effects**

Maintenance of intervention effects was analyzed by a series of MANCOVAs and ANCOVAs, with follow-up scores as dependent variables and pre-assessment data as covariates. Table 5 reports the descriptive statistics, results of univariate ANCOVAs, and effect sizes at 6-month follow-up. Follow-up results show a similar pattern to post-intervention findings, with gains largely maintained and in some cases improved over time.

### **Child behavior and adjustment**

MANCOVA revealed a significant effect for ECBI Problem and Intensity scores,  $F(2,111) = 10.619$ ,  $p = .000$ , with univariate tests showing parents in the TPOL condition reporting a significantly lower number and frequency of problem behaviors than controls, with medium effect sizes remaining. The short-term effects on the SDQ were not maintained over the 6-month period,  $F(5,105) = 1.415$ ,  $p = .225$ . Analysis at follow-up revealed a significant condition effect for observed child disruptive behavior,  $F(1,23) = 4.814$ ,  $p = .039$ , with a small effect size.

**Table 3**  
Intervention use.

Module	Module completed n (%)	Average completion time (min)
1. What is positive parenting?	55 (95)	74
2. Encouraging behavior you like	53 (91)	47
3. Teaching new skills	45 (78)	73
4. Managing misbehavior	39 (67)	74
5. Dealing with disobedience	33 (57)	48
6. Preventing problems by planning ahead	31 (53)	41
7. Making shopping fun	29 (50)	40
8. Raising confident, capable kids	27 (47)	53

**Table 4**  
Clinical and reliable change at post-assessment.

Measure	Triple P Online n/n (%)		Control n/n (%)		Clinical change		Reliable change	
	Clinically improved	Reliably improved	Clinically improved	Reliably improved	$\chi^2$	p	$\chi^2$	p
ECBI Problem $\geq$ 15	34/57 (60)	24/60 (40)	14/49 (29)	8/56 (14)	10.271	.001	9.588	.002
Intensity $\geq$ 131	34/52 (65)	32/60 (53)	8/46 (17)	5/56 (9)	22.957	.000	26.292	.000
SDQ Conduct $\geq$ 3	17/43 (40)	9/60 (15)	7/41 (17)	6/56 (11)	5.189	.023	.473	.492
Emotion $\geq$ 4	12/21 (57)	12/60 (20)	5/23 (22)	0/56 (0)	5.803	.016	12.492	.000
PS Laxness $\geq$ 3.15	15/18 (83)	7/60 (12)	8/24 (33)	4/56 (7)	10.380	.001	.691	.406
Over-reactivity $\geq$ 3.05	15/43 (35)	20/60 (33)	9/48 (19)	4/56 (7)	3.040	.081	12.108	.001
Verbosity $\geq$ 4.05	13/26 (50)	7/60 (12)	12/31 (39)	3/56 (5)	.732	.392		.325 <sup>a</sup>
PTC Behavior $\leq$ 68.44	35/38 (92)	18/60 (30)	14/37 (38)	7/56 (13)	24.376	.000	5.247	.022
Setting $\leq$ 79.3	25/32 (78)	13/60 (22)	14/34 (41)	5/56 (9)	9.310	.002	3.585	.058
PAI Problem	—	16/60 (27)	—	6/56 (11)	—	—	4.796	.029
Intensity $\geq$ 148	7/19 (37)	13/60 (22)	5/17 (29)	4/56 (7)	2.23	.637	4.885	.027

Note. Clinically improved = moved into nonclinical range; Reliably improved = Reliable Change Index  $>$  1.96;  $\chi^2$  = Pearson's chi-square (where expected frequencies are too low for chi-square, Fisher's Exact Test is reported); ECBI = Eyberg Child Behavior Inventory; SDQ = Strengths and Difficulties Questionnaire; PS = Parenting Scale; PTC = Parenting Tasks Checklist; PAI = Parental Anger Inventory. The PAI has no recommended clinical cut-off for the Problem scale therefore clinical improvement was unable to be calculated.

<sup>a</sup> 2-Sided significance for Fisher's Exact Test.

**Table 5**  
Maintenance effects: intervention and control conditions at pre- and follow-up.

Measure	Triple P Online				Control				ANCOVA	p	Effect size
	Pre		Follow-up		Pre		Follow-up				
	M	SD	M	SD	M	SD	M	SD			
ECBI Problem	22.13	4.82	12.85	7.90	21.75	5.57	17.52	7.58	14.00 (1,112)***	.000	.60
Intensity	154.35	19.08	116.80	28.73	152.46	20.06	137.52	27.41	20.53 (1,112)***	.000	.74
SDQ Conduct	3.35	1.44	2.36	1.69	3.73	1.92	3.12	1.87		ns	
Emotion	2.90	2.27	2.31	2.42	2.89	2.02	2.82	2.26		ns	
Observed child disruptive behavior <sup>a</sup>	16.39	14.50	7.19	7.71	9.54	7.76	8.66	12.64	4.814 (1,23)*	.039	.14
PS Laxness	2.76	.83	2.22	.72	2.98	.84	2.82	.78	19.24 (1,111)***	.000	.80
Over-reactivity	3.71	1.00	2.90	1.03	3.81	.75	3.71	.90	28.69 (1,111)***	.000	.84
Verbosity	3.95	.96	3.30	.95	4.07	.76	3.93	.87	13.43 (1,111)***	.000	.69
PTC Behavior self-efficacy	61.30	17.85	83.25	13.41	58.99	16.74	67.78	18.08	30.26 (1,112)***	.000	.98
Setting self-efficacy	78.92	11.81	89.97	8.02	76.39	13.11	81.58	13.61	16.60 (1,112)***	.000	.76
DASS-21 Depression	7.03	8.16	5.20	7.93	4.96	5.94	5.75	7.32		ns	
Anxiety	4.43	5.66	3.50	6.11	3.50	4.39	3.64	5.90		ns	
Stress	14.40	8.81	8.76	8.29	13.89	7.56	13.60	8.24	17.42 (1,111)***	.000	.59
PAI Problem	26.02	7.59	17.60	9.67	23.98	7.92	22.50	9.04	14.64 (1,112)***	.000	.52
Intensity	135.22	34.44	114.86	42.40	133.14	35.17	129.16	37.97	5.99 (1,112)*	.016	.35
PPC Problem	5.79	3.77	4.11	3.70	5.29	3.64	5.50	4.08	9.68 (1,100)**	.002	.36
Extent	39.30	20.35	30.77	19.13	35.53	16.48	36.96	18.20	10.81 (1,100)**	.001	.33

Note. Follow-up = 6-month post-intervention; F = ANCOVA univariate effect for condition (only reported where the multivariate effect was significant); d = effect size; ECBI = Eyberg Child Behavior Inventory; SDQ = Strengths and Difficulties Questionnaire; PS = Parenting Scale; PTC = Parenting Tasks Checklist; DASS-21 = Depression Anxiety Stress Scales-21; PAI = Parental Anger Inventory; PPC = Parent Problem Checklist (N.B. Intervention n = 53 and control n = 51 due to single family status).

\*p < .05; \*\*p < .01; \*\*\*p < .001.

<sup>a</sup> Completed with a subset of participants (n at T3 = 26).

### *Parenting style*

Multivariate analysis of the PS Laxness, Over-reactivity and Verbosity scales revealed a significant condition effect,  $F(3,109) = 10.610$ ,  $p = .000$ . Univariate analyses indicated that at follow-up, parents in the TPOL condition continued to report less use of dysfunctional parenting strategies in each domain than control parents. The effects for Laxness and Over-reactivity increased from medium to large, and the effects for Verbosity (medium) were maintained.

### *Parenting confidence*

The multivariate condition effect found for parents' confidence on the PTC Behavior Self-efficacy and Setting Self-efficacy scales at post-assessment was also maintained at follow-up,  $F(2,111) = 15.090$ ,  $p = .000$ . Univariate analyses indicated that intervention group parents continued to report significantly greater confidence than parents in the control condition, with large effect sizes on both scales at follow-up.

### *Parental adjustment*

A new significant multivariate condition effect was found for parental adjustment on the DASS-21,  $F(3,109) = 8.938$ ,  $p = .000$ . Univariate analyses indicated a medium effect on the Stress scale, with parents in the intervention group indicating lower levels of stress at follow-up than control group parents.

### *Parental anger*

The significant MANCOVA condition effect found for the PAI at post-assessment was maintained,  $F(2,111) = 8.171$ ,  $p = .000$ , with univariate tests showing that TPOL parents continued to display significantly lower scores on both scales than control parents. A medium effect was evident for the number of problematic situations (Problem scale) and a small effect for the intensity of elicited anger (Intensity scale).

### *Conflict over parenting*

A new significant multivariate condition effect was also found at follow-up for parental conflict over parenting,  $F(2,99) = 5.783$ ,  $p = .004$ , with small univariate effects found for both the PPC Problem and Extent scales.

## **Discussion**

This study provides empirical support for the efficacy of a self-help online positive parenting program for parents of children with early-onset conduct problems. It is the first randomized controlled trial that has demonstrated sustained improvements in child and family outcomes from a completely self-directed online parenting intervention. As hypothesized, use of TPOL was associated with significantly lower levels of parent-reported child conduct problems; less use of ineffective discipline; greater parental confidence in managing children's problem behaviors; less stress, anger and conflict over parenting. The large intervention effect sizes for child conduct problems at post-assessment (ECBI Intensity  $d = .71$  and Problem Score  $d = .89$ ), were fairly stable at follow-up (Intensity Score  $d = .60$  and Problem Score  $d = .74$ ). These results compare favorably to published effect sizes for group and individually administered versions of Triple P (Nowak & Heinrichs, 2008).

Overall, these findings extend previous research that has evaluated other Triple P interventions. They provide empirical support for the efficacy of Triple P as an online self-directed intervention, a format increasingly sought by parents (O'Brien & Daley, 2011). TPOL therefore appears to be a meaningful

addition to other delivery formats of Triple P and supports the use of such an intervention format as part of a comprehensive population level approach that reaches all parents (Sanders, 2012).

The present findings are consistent with Enebrink et al. (2012), the only other internet-based RCT reporting improvements in conduct problems in children. Both studies achieved sustained reductions in child problem behavior, with the present study achieving even larger post-intervention effect sizes using ITT analyses (ECBI Intensity Score:  $d = .89$  vs  $d = .42$ ). In addition, the self-directed approach used here demonstrates the potential for even greater cost-efficiency, with only 11 min technical support provided in contrast to 5 h support with session completion.

Feedback in regard to usability and design of the intervention was very positive, suggesting parents find the online program acceptable, engaging, and easy to use. In comparison to consumer satisfaction with other Level 4 Triple P intervention formats (Sanders et al., 2000), these scores were slightly lower than average scores for face-to-face Standard Triple P, but markedly higher than average scores for Self-Directed Triple P. Therefore, online delivery of parenting support can be an effective and attractive alternative or addition to traditional parenting support that may prove particularly helpful for families unable to or preferring not to attend face-to-face programs.

## **Limitations**

A limitation of this study is the underrepresentation of low-income families. Participants were of higher than average SES (58% had a university degree and 76% had an income above the Australian median), which may reduce the generalizability of the results to other, higher risk samples. Additionally, the power of the observational analyses was low due to the reduced sample size, and the generally low base rates of negative behaviors during the observation tasks.

## **Conclusion**

These findings have a number of important clinical implications. First, this trial demonstrated that it is possible to bring about significant change in child behavior and parenting problems using nontraditional, technology-based parenting interventions. This finding challenges the necessity for conventional clinical face-to-face approaches to bring about change in families. Most achieved improvements were maintained (or further enhanced) at 6-month follow-up, indicating durable change for families.

Given the variability in program completion times and log-on rates, parents may differ in how they engage with the program. In the present study, less than half of the participants completed all eight modules within 3 months. Despite this, the results were very positive, indicating it is not necessary to complete the full eight-module intensive intervention to achieve significant improvements in child behavior, parenting and parental adjustment.

Future research should investigate the minimally sufficient dose of intervention for different populations, and identify variables influencing program completion. Potential moderators of intervention effects such as child characteristics (e.g., age, gender, severity of pre-intervention problem behavior), parental characteristics (e.g., adjustment, internet self-efficacy), and familial conditions (e.g., family composition, socioeconomic disadvantage) should be examined to identify those for whom an online parenting intervention is most effective.

Interventions delivered face-to-face by mental health and parenting practitioners will always have their place. However, online parenting interventions can reach a larger proportion of the population who do not have ready access to care, or would not seek face-to-face support. Online interventions can provide a sufficient level of engagement and support for many parents, and can increase access as they are visible, flexible, and are not associated with the stigma often attached to seeking specialist help. The implementation of a cost-effective, online parenting intervention can substantially enhance the population reach of parenting support. This in turn increases capacity to reduce prevalence of childhood behavior problems, family stress, and the resulting personal and community costs.

The final publication is available online at [sciencedirect.com](http://www.sciencedirect.com)

[http://www.sciencedirect.com/science?\\_ob=ArticleListURL&\\_method=list&\\_ArticleListID=2042287&\\_sort=r&\\_st=13&view=c&\\_acct=C000016898&\\_version=1&\\_urlVersion=0&\\_userid=331728&\\_md5=b90e36322bed619921c2c300633dbcb6&searchtype=a](http://www.sciencedirect.com/science?_ob=ArticleListURL&_method=list&_ArticleListID=2042287&_sort=r&_st=13&view=c&_acct=C000016898&_version=1&_urlVersion=0&_userid=331728&_md5=b90e36322bed619921c2c300633dbcb6&searchtype=a)

## References

- American Psychological Association. (2009). *Effective strategies to support positive parenting in community health centers: Report of the Working Group of Child maltreatment Prevention*. Washington, DC: Author.
- Arnold, D. S., O'Leary, S. G., Wolff, L. S., & Acker, M. M. (1993). The parenting scale: a measure of dysfunctional parenting in discipline situations. *Psychological Assessment, 5*, 137-144.
- Australian Bureau of Statistics (ABS). (2009). *Household income and income distribution, Australia, 2007-08*. Cat. no. 6523.0. Canberra: ABS.
- Australian Research Council, Centre of Excellence for Creative Industries and Innovation, Swinburne University of Technology. (2010). CCI digital futures 2010, the internet in Australia. [www.cci.edu.au/projects/digital-futures](http://www.cci.edu.au/projects/digital-futures).
- Baggett, K. M., Davis, B., Feil, E. G., Sheeber, L. L., Landry, S. H., Carta, J. J., et al. (2010). Technologies for expanding the reach of evidence-based interventions: preliminary results for promoting social-emotional development in early childhood. *Topics in Early Childhood Special Education, 29*(4), 226-238.
- Barak, A., Hen, L., Boniel-Nissim, M., & Shapira, N. (2008). A comprehensive review and a meta-analysis of the effectiveness of internet-based psychotherapeutic interventions. *Journal of Technology in Human Services, 26*(2), 109-160.
- Burns, G. L., & Patterson, D. R. (2001). Normative data on the Eyberg child behavior inventory and Sutter-Eyberg Student behavior inventory: parent and teacher rating scales of disruptive behavior problems in children and adolescents. *Child & Family Behavior Therapy, 23*(1), 15-28.
- Cefai, J., Smith, D., & Pushak, R. (2010). Parenting wisely: parenting training via CDROM with an Australian sample. *Child & Family Behaviour Therapy, 32*, 17-33. <http://dx.doi.org/10.1080/07317100903539709>.
- Dadds, M. R., & Powell, M. B. (1991). The relationship of interparental conflict and global marital adjustment to aggression, anxiety, and immaturity in aggressive nonclinic children. *Journal of Abnormal Child Psychology, 19*, 553-567.
- Enebrink, P., Hogstrom, J., Forster, M., & Ghaderi, A. (2012). Internet-based parent management training: a randomized controlled study. *Behaviour Research and Therapy, 50*, 240-249. <http://dx.doi.org/10.1016/j.brat.2012.01.006>.
- Eyberg, S. M., & Pincus, D. (1999). *Eyberg child behavior inventory and Sutter-Eyberg Student behavior inventory—Revised: Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Funderburk, B. W., & Eyberg, S. M. (1989). Psychometric characteristics of the Sutter-Eyberg Student behavior inventory: a school behavior rating scale for use with preschool children. *Behavioral Assessment, 11*, 297-313.
- Glasgow, R. E. (2007). eHealth evaluation and dissemination research. *American Journal of Preventive Medicine, 32*(5), S119-S126.
- Goodman, R. (1999). The extended version of the strengths and difficulties questionnaire as a guide to child psychiatric caseness and consequent burden. *Journal of Child Psychology and Psychiatry, 40*(5), 791-799.

- Goodman, R., & Scott, S. (1999). Comparing the strengths and difficulties questionnaire and the child behavior checklist: is small beautiful? *Journal of Abnormal Child Psychology*, 27, 17-24.
- Hansen, D. J., & Sedlar, G. (1998). *Manual for the PAI: The parental anger inventory*. Lincoln, NE: CSBFIP.
- Henry, J. D., & Crawford, J. R. (2005). The 21-item version of the depression anxiety stress scales (DASS-21): normative data and psychometric evaluation in a large non-clinical sample. *British Journal of Clinical Psychology*, 44, 227-239.
- Hudson, D. B., Campbell-Grossman, C., Fleck, M. O., Elek, S. M., & Shipman, A. (2003). Effects of the new fathers' network on first-time fathers' parenting self-efficacy and parenting satisfaction during the transition to parenthood. *Issues in Comprehensive Pediatric Nursing*, 26, 217-229.
- Jacobson, N. S., & Truax, P. (1991). Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, 59(1), 12-19.
- Joachim, S., Sanders, M. R., & Turner, K. M. T. (2010). Reducing preschoolers' disruptive behaviour in public with a brief parent discussion group. *Child Psychiatry and Human Development*, 41(1), 47-60.
- Kazdin, A. E., & Blase, S. L. (2011). Rebooting psychotherapy research and practice to reduce the burden of mental illness. *Perspectives on Psychological Science*, 6(1), 21-37.
- Kendall, P. C., Flannery-Schroeder, E. C., & Ford, J. D. (1999). Therapy outcome research methods. In C. Kendall, & J. N. Butcher (Eds.), *Handbook of research methods in clinical psychology* (2nd ed.). NY: Wiley.
- Kendall, P. C., Marrs-Garcia, A., Nath, S. R., & Sheldrick, R. C. (1999). Normative comparisons for the evaluation of clinical significance. *Journal of Consulting and Clinical Significance*, 67, 285-299.
- Kirp, D. L. (2011). *Kids first: Five big ideas for transforming children's lives and America's future*. New York, NY: Public Affairs.
- Love, S. M., Sanders, M. R., Metzler, C., Prinz, R. J., & Kast, E. Z. Enhancing accessibility and engagement in evidence-based parenting programs to reduce maltreatment: conversations with vulnerable parents. *Journal of Child Public Welfare*, in press.
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the depression anxiety stress scales* (2nd ed.). Sydney, NSW: Psychology Foundation of Australia.
- Markie-Dadds, C., & Sanders, M. R. (2006). A controlled evaluation of an enhanced self-directed behavioural family intervention for parents of children with conduct problems in rural and remote areas. *Behaviour Change*, 23(1), 55-72.
- Metzler, C. W., Sanders, M. R., Rusby, J. C., & Crowley, R. (2012). Using consumer preference information to increase the reach and impact of media-based parenting interventions in a public health approach to parenting support. *Behavior Therapy*. <http://dx.doi.org/10.1016/j.beth.2011.05.004>.
- Morawska, A., Haslam, D., Milne, D., & Sanders, M. R. (2011). Evaluation of a brief parenting discussion group for parents of young children. *Journal of Developmental and Behavioral Pediatrics*, 32(2), 136-145.
- Morawska, A., & Sanders, M. R. (2007). Are parent-reported outcomes for self-directed or telephone-assisted behavioral family intervention enhanced if parents are observed? *Behavior Modification*, 33(3), 279-297.
- National Institute of Clinical Excellence and Social Care. (2006). *Parent-training/education programmes in the management of children with conduct disorders*. London: Author.
- National Research Council and Institute of Medicine. (2009). In M. E. O'Connell, T. Boat, & K. E. Warner (Eds.), *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities* (pp. 157-190). Washington, DC: The National Academies Press.
- Nowak, C., & Heinrichs, N. (2008). A comprehensive meta-analysis of Triple P-positive parenting program using hierarchical linear modeling: effectiveness and moderating variables. *Clinical Child & Family Psychology*, 11, 114-144.
- O'Brien, M., & Daley, D. (2011). Self-help parenting interventions for childhood behaviour disorders: a review of the evidence. *Child: Care, Health and Development*, 37(5), 623-637.

- Plantin, L., & Daneback, K. (2009). Parenthood, information and support on the internet. A literature review of research on parents and professionals online. *BMC Family Practice*, *10*(34). <http://dx.doi.org/10.1186/1471-2296-10-34>.
- Prinz, R. T., & Sanders, M. R. (2007). Adopting a population-level approach to parenting and family support interventions. *Clinical Psychology Review*, *27*, 739-749.
- Radey, M., & Randolph, K. A. (2009). Parenting sources: how do parents differ in their efforts to learn about parenting? *Family Relations*, *58*, 536-538.
- Sanders, M. R. (2012). Development, evaluation, and multinational dissemination of the Triple P-Positive Parenting Program. *Annual Review of Clinical Psychology*, *8*. <http://dx.doi.org/10.1146/annurev-clinpsy-032511-143104>.
- Sanders, M. R. (2000). *Family observation schedule*. Brisbane, QLD, Australia: Parenting and Family Support Centre, The University of Queensland.
- Sanders, M. R. (2008). Triple P-positive parenting program as a public health approach to strengthening parenting. *Journal of Family Psychology*, *22*, 506-517.
- Sanders, M. R., & Kirby, J. N. (2012). Consumer engagement and the development, evaluation and dissemination of evidence-based parenting programs. *Behavior Therapy*, *43*, 236-250.
- Sanders, M. R., Markie-Dadds, C., Rinaldis, M., Firman, D., & Baig, N. (2007). Using household survey data to inform policy decisions regarding the delivery of evidenced-based parenting interventions. *Child: Care, Health and Development*, *33*(6), 768-783. <http://dx.doi.org/10.1111/j.1365-2214.2006.00725.x>.
- Sanders, M. R., Markie-Dadds, C., Tully, L. A., & Bor, W. (2000). The Triple P-positive parenting program. A comparison of enhanced, standard, and self-directed behavioral family intervention for parents of children with early onset conduct problems. *Journal of Consulting and Clinical Psychology*, *68*, 624-640.
- Sanders, M. R., Markie-Dadds, C., & Turner, K. M. T. (2012). *Practitioner's manual for Standard Triple P* (2nd ed.). Brisbane, QLD, Australia: Triple P International Pty. Ltd.
- Sanders, M. R., Pidgeon, A. M., Gravestock, F., Connors, M. D., Brown, S., & Young, R. W. (2004). Does parental attributional retraining and anger management enhance the effects of the Triple P-positive parenting program with parents at risk of child maltreatment? *Behavior Therapy*, *35*(3), 513-535.
- Sanders, M. R., & Wilkinson, L. (2012). Why so few parents complete evidence based parenting programs and what can be done about it? *UK Parent Magazine*, .
- Sanders, M. R., & Woolley, M. L. (2005). The relationship between global, domain and task-specific self-efficacy and parenting practices: implications for parent training. *Child: Care, Health and Development*, *31*(1), 65-73.
- Sedlar, G., & Hansen, D. J. (2001). Anger, child behavior, and family distress: further evaluation of the parental anger inventory. *Journal of Family Violence*, *16*(4), 361-373.
- Self-Brown, S., & Whitaker, D. J. (2008). Parent-focused child maltreatment prevention: improving assessment, intervention, and dissemination with technology. *Child Maltreatment*, *13*(4), 400-416.
- Taylor, T. K., Webster-Stratton, C., Feil, E., Broadbent, B., Widdop, C., & Severson, H. (2008). Computer-based intervention with coaching: an example using the incredible years program. *Cognitive Behaviour Therapy*, *37*(4), 233-246.
- Turner, K. M. T., & Sanders, M. R. (2006). Help when it's needed first: a controlled evaluation of brief, preventive behavioral family intervention in a primary care setting. *Behavior Therapy*, *37*(2), 131-142.
- Turner, K. M. T., & Sanders, M. R. (2011). *Triple P online* [Interactive internet program]. Brisbane, QLD, Australia: Triple P International Pty. Ltd.. [www.triplep.net](http://www.triplep.net).
- United Nations Office on Drugs and Crime, Vienna. (2009). *Guide to implementing family skills training programmes for drug abuse prevention*. NY: United Nations.
- World Health Organization. (2009). *Preventing violence through the development of safe, stable, and nurturing relationships between children and their parents and caregivers In Series of briefings on violence prevention: The evidence*, . Geneva, Switzerland: Author.

Zubrick, S. R., Silburn, S. R., Garton, A., Burton, P., Dalby, R., Carlton, J., et al. (1995). *Western Australia child health survey: Developing health and well-being in the nineties*. Perth, WA: Australian Bureau of Statistics and the Institute for Child Health Research.

Zubrick, S. R., Ward, K. A., Silburn, S. R., Lawrence, D., Williams, A., Blair, E., et al. (2005). Prevention of child behavior problems through universal implementation of a group behavioral family intervention. *Prevention Science*, *6*(4), 287-304.