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## "Do it yourself" parenting interventions: A comparison of online versus workbook delivery of a self-help positive parenting program

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Running head: Efficacy of self-help parenting interventions

### Abstract

The present study employed a noninferiority randomized trial design to compare the efficacy of two self-help variants of the Triple P-Positive Parenting Program: an online version and a self-help workbook. Families of 193 children displaying early onset disruptive behavior difficulties were randomly assigned to the online ( $N = 97$ ) or workbook ( $N = 96$ ) interventions. Parents completed questionnaire measures of child behavior, parenting, child maltreatment risk, personal adjustment and relationship quality at pre- and post-intervention and 6-month follow up. The new Triple P Online program was not inferior in its short-term intervention effects to the workbook on the primary intervention outcomes of disruptive child behavior and dysfunctional parenting as reported by both mothers and fathers. Furthermore, both interventions were associated with significant and clinically meaningful declines from pre- to post-intervention in levels of disruptive child behavior, dysfunctional parenting styles, risk of child maltreatment, and inter-parental conflict on both mother and father report measures. Moreover, mothers and fathers in both interventions reported significant improvements in parenting confidence, the quality of the parent-child relationship, and parental adjustment. These intervention effects were largely maintained at 6-month follow up. These findings support the use of parenting self-help programs within a comprehensive population-based system of parenting support to reduce child maltreatment and behavioral problems in children.

Keywords: self-directed parent training, online parent training, noninferiority design, behavioral family intervention

“Do it yourself” parenting interventions: A comparison of online versus workbook delivery of the Triple P-Positive Parenting Program

Increasing calls from clinicians and policy makers to make evidence-based parenting programs more widely accessible have led to the development of public health models of parenting support that have included different delivery formats (Sanders, 2008; 2012). These formats include large and small group programs, brief low intensity primary care programs, more intensive individually administered programs, and guided self-help programs (O’Brien & Daley, 2011). Each delivery modality has shown promise in teaching parents of children with early onset conduct problems to modify their children’s disruptive behavior and has diversified options for practitioners and consumers alike.

Despite these developments, participation rates of parents remain a major challenge as many parents experiencing difficulties with their children’s behavior do not access professional support (Authors, 2007). Self-help parenting programs have emerged as an important alternative to practitioner-delivered programs. O’Brien and Daley’s (2011) review found that self-help programs produced comparable effects to practitioner-administered group and individual programs and were associated with high consumer satisfaction. The Triple P – Positive Parenting Program (Sanders, 2008, 2012) is one example of a public health approach to parenting support within which self-help interventions have a prominent place. This multilevel system of parenting support includes several self-help variants that have been shown to be effective, including the use of television programs on parenting (Sanders, Montgomery, & Brechman-Toussaint, 2000; Calam, Sanders, Miller, Sadhnani, & Carmont, 2008; Sanders et al., 2008), workbook or bibliotherapy self-help programs (Markie-Dadds & Sanders, 2006; Sanders, Markie-Dadds, Tully & Bor, 2000), workbook self-help programs with brief telephone support (Morawska & Sanders, 2006), and, more recently, online programs (Authors, 2012). Triple P uses a self-regulation framework that is ideally suited to

self-help programs. It teaches parents the tools of personal change including self-management skills like goals setting, self-observation and self-evaluation. Furthermore, self-regulation principles such as the “minimally sufficient” intervention, the promotion of self-efficacy, and independent decision making is infused throughout the entire system of intervention. Nowak and Heinrich’s (2008) meta-analysis of Triple P studies attested to the value of self-help programs showing they produced comparable effects to group- and individually-administered programs on measures of parenting, but smaller effects on child outcomes.

Bibliotherapy has been used for many years in parent training (e.g., Clark et al, 1977; Forehand, Long, Merchant, & Garai, 2010; Lavigne et al., 2009). Online interventions, however, are a relatively recent addition to the parent training literature. Only two randomized trials to date provide empirical support for internet-based parenting programs. Both programs evolved from well-established face-to-face parent management training interventions based on social learning principles (Enebrink, Hogstrom, Forster, & Ghaderi, 2012; Authors, under review). Enebrink et al. (2012) demonstrated that child conduct problems and dysfunctional parenting improved as a result of online parenting programs (Enebrink et al., 2012). However, this program provided five hours of professional contact and feedback per family to assist parents complete the program. In contrast, Authors (2012) demonstrated the efficacy of an 8-module online version of Triple P (Triple P Online) in which no professional contact or adjunctive support was provided. Compared to the internet use as usual condition, the TPOL group showed sustained improvements at 6-month follow up on multiple measures of child, parenting and parental adjustment outcomes with effect sizes ranging from  $d = 0.40$  to  $d=1.10$ .

Self-help programs have strengths and weaknesses. For instance, although television programs on parenting have potentially wide reach, quality television programs are expensive to make and once a series has been broadcast it is not always deployable in other population-

based roll outs (Calam et al., 2008). In contrast, workbook-based and online programs can be used more flexibly across contexts and time and share several advantages to practitioner-delivered programs. They are convenient to use, portable, readily accessible at any time, and are low cost per individual use compared to practitioner-delivered programs. They reduce barriers to access due to isolation, distance or transportation problems, allowing parents in rural or remote areas to participate, and avoid long delays for programs to become available in their local community. They also preserve the privacy of parents and reduce perceived stigma associated with accessing parenting services. Customization of individual delivery of the content is also possible, as parents can choose their own parenting goals and strategies to use.

No studies have compared the two delivery modalities to determine whether new online offerings of parent training are as effective as existing workbook-based versions. Head to head comparison research regarding the relative efficacy of self-help programs will assist parents make informed choices about how to invest their time when learning parenting skills to address their child's behavioral difficulties. In addition, the parent training field will be strengthened if a range of effective self-help options are available to ensure parents can access a preferred delivery modality. Thus, the present study examined whether an internet-delivered version of Triple P (Triple P Online; TPOL) is as effective as the existing and well established Every Parent's Self-Help workbook intervention (Self-Help Triple P; SHTP) in a sample of parents of 3- to 8-year-old children with early onset conduct problems. SHTP has previously been evaluated in a number of randomized controlled trials, and has been shown to produce reductions in child behavior problems and ineffective parenting practices in comparison to a waitlist control (Connell, Sanders, & Markie-Dadds, 2007; Markie-Dadds & Sanders, 2006; Morawska & Sanders, 2006).

A noninferiority randomized controlled trial design (Piaggio, Elbourne, Altman, Pocock, & Evans, 2006) was employed to assess whether TPOL was not clinically and

statistically significantly different from SHTP on the primary outcomes of child behavior and use of ineffective parenting practices. This design was chosen over a traditional superiority design because the goal was to establish whether the new self-directed variant was comparable (i.e. not inferior) to the already available and disseminated workbook variant (Greene, Morland, Durkalski, & Frueh, 2008). SHTP was considered a suitable active control condition since evidence attesting to its effectiveness (see above) is available and it is the standard self-help intervention currently offered widely in the Triple P system. Using the logic of the noninferiority approach, we tested the null hypothesis that TPOL is inferior to SHTP by at least a prespecified and empirically-derived noninferiority margin ( $H_0: \mu_{\text{SHTP}} - \mu_{\text{TPOL}} \geq \delta$  where  $\delta$  is the noninferiority margin) in its effects on disruptive child behavior and parenting practices. The alternative hypothesis was that TPOL is inferior to SHTP by less than the noninferiority margin ( $H_0: \mu_{\text{SHTP}} - \mu_{\text{TPOL}} < \delta$ ).

We were also interested in evaluating the short- and long-term intervention effects of each intervention on a range of secondary outcomes, including parenting confidence, the quality of the parent-child and inter-parental relationship, parental risk of child maltreatment and parental personal adjustment. It was predicted that both TPOL and SHTP would produce improvements on these measures at post-intervention, with these gains maintained at 6-month follow up. Finally, the effectiveness of the programs was examined for both mothers and fathers. It was considered important to include fathers given their lower participation in evaluations of interventions for child behavioral and emotional problems (Lundahl, Tollefson, Risser, & Lovejoy, 2008; Phares, Lopez, Fields, Kamboukos, & Duhig, 2005).

## **Method**

### **Participants**

Participants were New Zealand parents of 193 children aged between 3 and 8 years ( $M = 5.63$  years,  $SD = 1.64$  years) displaying elevated levels of disruptive behavior problems.

Both parents in two-parent households were invited to participate in the study, resulting in 190 mothers and 148 fathers completing the baseline assessment. The mother sample consisted entirely of biological or adoptive mothers, while the father sample comprised 145 biological, adoptive or step-fathers, one grandmother, one grandfather, and one mother's same-sex partner who identified as the target child's secondary caregiver. The data from the latter three individuals were included in the father dataset to ensure that children were rated by only one participant in each set of analyses, as the child rated by these individuals was also rated by their mother.

Around 67% of the target children were male. The children largely came from New Zealand European backgrounds (90%), with representation from Maori (4%), Pacific Islander (4%) and Asian (2%) groups. Most children (77%) lived with their two biological or adoptive parents, 14% in sole parent households, and 7% in step- or blended families. Around 54% of families had a combined annual family income of over \$NZ70,000 and 20% earned less than \$NZ40,000 per year. Most parents indicated that they had enough money left over after paying for their essential expenses to purchase some (45%) or most (30%) of the things they wanted. However, 20% of parents reported that they had not been able to meet their essential expenses at some point over the past 12 months.

The mean age of mothers in the study was 37.19 years ( $SD = 5.88$  years) and the mean age of fathers was 39.63 years ( $SD = 6.73$  years). Around half the sample was university educated (47% mothers, 48% fathers), and an additional quarter of parents had completed some form of post-secondary school education, including a trade or apprenticeship (7% mothers, 17% fathers) or vocational training certificate (20% mothers, 8% fathers). Tables 1 and 2 display the relevant descriptive information (means and SDs or frequencies) for each condition on the key demographic characteristics.

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Insert Tables 1 and 2 about here

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**Recruitment and screening.** Recruitment involved community outreach via a media release distributed to local and national media and emails to schools and childcare centers throughout New Zealand. Three hundred and fifty parents from a mix of urban and rural locations responded to the advertisements and participated in a telephone screening interview designed to inform parents of the study requirements and assess eligibility. Parents were eligible for the project if they a) had a child aged between 3 and 8 years; b) the child did not have an intellectual or developmental disability (since there are other specially designed parenting interventions that are more suitable for this population); c) the child or the parent were not receiving any sort of treatment or medication for the child's behavioral difficulties; d) the parents themselves were not receiving treatment for their own emotional or psychological difficulties; and e) parents were able to read a newspaper without assistance. In addition, parents needed to report an elevated level of behavior problems in the child, based on their scores on a 15-item version of the Eyberg Child Behavior Inventory (ECBI; Eyberg, 1978) developed by Metzler, Sanders, Rusby, and Crowell (2012). This ECBI screener correlated highly with the original ECBI ( $r = .94$ ) and possessed good internal consistency ( $\alpha = .91$ ). Of the parents screened, 210 met eligibility criteria and were invited to participate. The most common reason for exclusion was parental report of child behavior below the cut-off on the ECBI screener. Parents from 193 eligible families completed their baseline assessment and were randomly allocated to receive Triple P Online ( $N = 97$ ) or the Every Parent's workbook ( $N = 96$ ). See Figure 1 for a description of the participant flow through the study.

## Measures

**Family background information.** A brief survey was used to collect demographic information at pre-intervention which included questions about parent and children's gender

and age, parental marital status, employment details and education, and family composition and financial status.

**Child behavior.** Parents completed the Eyberg Child Behavior Inventory (ECBI; Eyberg, 1978) at each assessment point. The ECBI comprises a list of 36 problem behaviors and parents are asked to rate the frequency of their occurrence on a 7-point scale (the Intensity scale), as well as to indicate whether they viewed that behavior as a problem or not (the Problem scale). Both the Intensity and Problem scales had good internal consistency in this sample ( $\alpha = .85$  and  $.80$  respectively) and the scale has been shown to discriminate between children with and without disruptive behavior problems (Burns & Patterson, 2001).

**Parenting practices.** Inappropriate discipline styles were measured using the 30-item Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993). Each item contains a less effective and a more effective anchor, and parents rate on a 7-point scale the extent to which each end is typical of their disciplinary response. Scores on the PS are summed to yield three sub-scales; Laxness, Over-reactivity, and Verbosity. Each of these scales had adequate internal consistency in the current sample ( $\alpha = .85$ ,  $.81$  and  $.63$  respectively) and have been shown to have good test-retest reliability ( $r = .83$ ,  $.82$  and  $.79$  respectively; Arnold, et al., 1993). The scales have also been shown to discriminate between clinic and nonclinic mothers, and to be significantly associated with observed parenting behavior (Arnold, et al., 1993).

**Parenting confidence.** The Parenting Task Checklist (PTC; Sanders & Woolley, 2005) was used to assess parents' task-specific self-efficacy across two domains; confidence in managing difficult child behaviors like whining, interrupting, and temper tantrums (Behavioral Self-Efficacy) and confidence in managing challenging behavior in different settings, including out shopping and going to the doctor (Setting Self-Efficacy). Parents are instructed to rate their level of confidence for each item on a scale from 0 (certain I can't do it) to 100 (certain I can do it). Both the Behavioral Self-Efficacy and Setting Self-Efficacy

scales had excellent internal consistency in this sample at pre-intervention ( $\alpha = .94$  and  $.87$  respectively), and the scales have been shown to discriminate between clinic and community mothers (Sanders & Woolley, 2005).

**Parent-child relationship.** The quality of the parent-child relationship was assessed using an 11-item scale (Metzler, Biglan, Ary, & Li, 1998). The first 10 items asked specific questions about positive and negative aspects of spending time with one's child, while the final item was a global measure of overall happiness in the parent-child relationship. Parents were asked to indicate how true each of the statements was on a 7-point scale. The internal consistency of this scale in the present study was  $\alpha = .83$ .

**Child maltreatment risk.** Two questionnaire measures were used to assess parental risk of abusing their child. The Parental Anger Inventory (PAI; Sedlar & Hansen, 2001) contains 50 items describing common child behavior and discipline issues. Parents were asked to indicate if each issue had been a problem in the past month (Problem scale), as well as to rate how angry the situation had made them on a 5-point scale (Intensity scale). The Intensity scale was used in the present study ( $\alpha = .95$ ).

A brief version of the Child Abuse Potential Inventory (Brief CAP; Ondersma, Chaffin, Simpson, & LeBreton, 2005) was also used to assess child maltreatment risk. Parents are asked to indicate whether they agreed or disagreed with a list of 34 statements. The brief CAP yields a Risk scale, a Lie scale and a Random Responding scale, with the Risk score used in the present study ( $\alpha = .83$  in the current sample). The Brief CAP Risk score is highly correlated ( $r = .96$ ) with the full CAP and predicts future child protection reports.

**Parental adjustment.** The Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) is a 21-item questionnaire that assesses symptoms of depression, anxiety and stress in adults. Each scale possessed good internal consistency in this sample ( $\alpha = .86, .83$ ).

and .84 respectively) and has been found to have good convergent and discriminant validity (Crawford & Henry, 2003).

**Parental relationship functioning.** Parents who were married or in a cohabiting relationship completed the Parent Problem Checklist (PPC; Dadds & Powell, 1991) and the Relationship Quality Index (RQI; Norton, 1983). The PPC contains 16 items covering the extent to which parents disagree over rules and discipline, engage in open conflict over child-rearing issues, and undermine each other's relationship with their children. Parents were asked to indicate for each item whether the issue had been a problem for them and their partner (the Problem scale;  $\alpha = .81$ ) and the extent to which it had been a problem (the Extent scale;  $\alpha = .90$ ). The RQI assessed overall relationship satisfaction. The first five items relate to various aspects of couple relationships and require parents to rate on a 7-point scale their agreement with each item. The final item assesses global relationship satisfaction and is rated on a 10-point scale. The RQI had excellent internal consistency in this sample,  $\alpha = .97$ .

**Parent satisfaction.** At post-intervention, parents completed a Client Satisfaction Questionnaire (CSQ; Sanders, Markie-Dadds, Tully, & Bor, 2000). The CSQ contains 13 items rated on a 7-point scale assessing parents' opinion of the quality of the service provided. Questions address how well the program met the parent's and child's needs, whether the program decreased the child's behavior problems and improved parent's ability to manage their child's behavior.

### *Design*

The study was a 2 (group: TPOL vs. SHTP) X 3 (time: pre-intervention, post-intervention, 6-month follow up) repeated measures noninferiority randomized trial. Stratified random assignment to groups was used, controlling for parent's ethnic group membership (NZ European, Maori, Pacific Islander, Other) and household configuration (one- or two-parent household). Randomization was conducted using a list of computer-generated random numbers

and families were assigned sequentially to condition within the blocks of demographic control variables after completing their initial assessment.

### **Procedure**

Ethical clearance for the study was obtained from the University of Auckland Human Participants Ethics Committee. Written informed consent was obtained from all participating parents. Eligible parents completed the pre-intervention assessment and informed consent process either online or in hard copy. Both parents were encouraged to participate in two-parent households. Parents completed the assessment at pre- and post-intervention and at 6-month follow up. The post-intervention assessment was conducted 14 weeks after parents were notified of their condition and were posted the workbook or emailed the log on information for TPOL.

To facilitate program adherence, parents in both conditions participated in a brief five- to 10-minute motivational interview over the telephone upon allocation to condition and again 4 weeks and 8 weeks into the intervention period. The interview protocol was derived from work by Nock and Kazdin (2005) and prompted parents to identify and problem solve any barriers to completing the upcoming sessions. Parents were also asked to identify a suitable day and time each week to devote to the program in the initial interview. The interviews were not designed to offer adjunctive therapeutic support or assistance. If parents asked questions about program content or strategy implementation, they were referred to their program materials. The second author and a trained research assistant conducted the interviews.

### **Intervention conditions**

**Self-help Triple P.** Parents assigned to the SHTP condition were posted the Every Parent's Self-Help workbook (Markie-Dadds, Sanders, & Turner, 1999) after completion of their initial assessment. SHTP includes a series of 10 weekly sessions designed to assist parents with the implementation of positive parenting and discipline techniques with their children. Each module contains readings and activities and suggested homework tasks for

parents to complete. Parents are encouraged to monitor their own and their child's behavior and set and review goals for change.

In the first three modules, parents are taught about the five core principles of positive parenting and common causes of child behavioral problems, and are then presented with instruction in strategies for promoting a positive relationship with children, increasing desirable behavior, teaching new skills and behaviors and managing misbehavior. In the next three modules, parents are guided through the implementation of 20-minute practice sessions of the strategies covered in the first three sessions, then in modules seven to nine, parents are taught strategies to plan for and manage high-risk situations. The final module prompts parents to review progress made to date and provides them with suggestions for maintaining change over time.

**Triple P Online (TPOL).** TPOL (Turner & Sanders, 2011) is an 8-module behavioral family intervention formatted for delivery over the internet. The program addresses identical content areas and parenting strategies as the workbook. However, TPOL is designed to promote interest, engagement, and program compliance through its use of user-friendly navigation, appealing graphics, video demonstrations of parenting skills and case scenarios, and 'voxpops' from parents describing their experiences and challenges. Additional features include parent-driven branching to review certain topics or gain more information, computer-assisted goal setting, probes and exercises to assist parents in checking mastery, and downloadable worksheets, tip sheets and podcasts to review session content. The program also provides parents with a customizable and printable notebook that automatically records parent's goals and responses to exercises.

The 8 modules in the program are structured sequentially meaning that parents must complete the modules in a set order. The program does, however, allow users to review previously completed modules or topics. Modules one to four cover identical content as the

first three modules in the workbook program. Parents are then taken through a formal example of applying their positive parenting strategies to managing disobedience in module five, and modules six and seven cover the strategies and routines for planning ahead for high-risk times. The final module covers strategies for maintaining change and for encouraging confidence and building social skills in children.

### **Statistical analyses**

Analyses of variance (ANOVAs) for continuous variables and chi-square tests for categorical variables on all sociodemographic variables and outcome variables were conducted first to check for adequate randomization. To assess whether TPOL was noninferior in its effectiveness to SHTP, a noninferiority margin was determined based on the effect sizes on primary parenting and child behavior outcome measures from a previous waitlist control trial of SHTP (Markie-Dadds & Sanders, 2006). This approach was consistent with CONSORT guidelines for conducting and reporting noninferiority trials (Piaggio, et al., 2006) and was based on recommendations that a clinically unimportant difference between the two treatment groups should be one half or less of the historical effect size of the established intervention (Temple & Ellenberg, 2000). Specifically, effect sizes were calculated for the parenting and child behavior measures that showed significant improvement at post-intervention relative to the waitlist condition in the trial reported by Markie-Dadds and Sanders; namely the ECBI Intensity, ECBI Problem and PS Over-reactivity scales. The effect sizes for the group differences on these scales were all large ( $d = .86, .89, \text{ and } .89$  respectively). Half of these effects sizes was indicative of a medium effect, which we considered to be a clinically meaningful difference between the two groups, and therefore too large a difference to be clinically unimportant. As a result, we employed an effect size cut-off of  $d = 0.20$  as our margin of noninferiority, meaning that if the effect size for the difference between the workbook and online conditions was less than  $.20$ , then noninferiority of TPOL

can be concluded. This effect size, therefore, was much more conservative than using half of the historical effect size. Both per-protocol and intent-to-treat approaches were used in the subsequent analyses, although a per-protocol approach was used in the first instance, since this is considered to be more conservative than an intent-to-treat approach in noninferiority settings (Greene et al., 2008).

Since effectiveness of the workbook on the remaining measures had not been previously established, noninferiority of TPOL to SHTP could not be investigated. Thus, short- and long-term intervention effects on these measures were analyzed using a series of 2 (condition: workbook vs. TPOL) X 2 (time: pre-intervention and post-intervention; post-intervention and 6-month follow up) repeated-measures ANOVAs or multivariate ANOVAs (MANOVAs). This repeated measures approach was selected since we were mostly interested in time effects within each condition rather than differences in outcomes between conditions (Rausch, Maxwell, & Kelley, 2003). Based on the recommendations outlined by Rausch et al. (2003), analyses were run using both the mixed-model approach specified above and using separate single-factor within-subjects analyses (i.e., repeated measures within each condition). The findings of both analyses were identical. MANOVAs were conducted where multiple measures of the same constructs were used; namely for child behavior (ECBI Intensity and Problem), parenting styles (PS Over-reactivity, Laxness and Verbosity), parenting confidence (PTC Setting and Behavior), risk of child maltreatment (PAI Intensity and Brief CAP), parental adjustment (DASS Depression, Anxiety, and Stress), parental relationship functioning (PPC Problem and Extent, and RQI). An ANOVA was used to evaluate intervention effects for parents' reports of the quality of the parent-child relationship. For each measure and each intervention condition, effect sizes were calculated to evaluate the level of clinically significant change from pre- to post-intervention and from post-intervention to 6-month follow up. Separate analyses were performed for mother and father data.

## Results

### Preliminary Analyses

Results of independent groups *t*-tests on continuous variables and chi square analyses of categorical variables revealed no between-groups differences on any of the demographic variables. In addition, there were no significant differences in pre-intervention levels of the outcome variables as reported by mothers. For fathers, those in the SHTP condition reported a greater number of problems on the PPC ( $M = 5.33$ ;  $SD = 3.70$ ), than those allocated to the online condition ( $M = 4.02$ ;  $SD = 3.13$ ),  $t(142) = -2.29$ ,  $p = .02$ . On the whole, however, the randomization process was successful and the two groups were not significantly different at baseline by either mother or father report.

### Attrition

Rates of attrition at post-intervention and follow up are displayed in Figure 1. A series of independent groups *t*-tests and chi square analyses were used to assess whether there were any systematic biases in participant attrition. Mothers who did not complete post-intervention had significantly higher risk scores on the Brief CAP ( $M = 8.67$ ;  $SD = 5.61$ ) compared to mothers who did complete post-intervention ( $M = 5.79$ ;  $SD = 4.60$ ),  $t(188) = .28$ ,  $p = .024$ . There were no other significant differences in baseline measures between non-completers and completers at post-intervention and follow up for mothers or fathers. There were also no significant differences in demographic characteristics between completers and non-completers.

### Noninferiority analyses on primary outcome measures

Table 3 presents the means and standard deviations for mother- and father-reported changes from pre- to post-intervention for the ECBI Intensity and Problem scales and PS Over-reactivity scale, as well as the effect sizes for the difference between the two conditions on these measures. For all three measures, by both mother and father report, the effect size for

the difference between the workbook and online conditions was less than the noninferiority cut-off of 0.20. Thus, TPOL produced short-term intervention effects for child behavior and dysfunctional parenting that were noninferior to the intervention effects of SHTP.

**Intent-to-treat analyses.** The noninferiority analyses reported above were repeated for all participants who were present at randomization regardless of assessment or intervention completion. The last-observation-carried-forward method was used to replace values for participants who did not complete the post-intervention assessment. Consistent with the per-protocol analyses, all effects sizes for both mothers and fathers were below the noninferiority cut-off. Specifically, for mothers, the effect sizes for the ECBI Intensity and Problem scales and PS Over-reactivity scale were  $d = -0.12$ ,  $-0.08$ , and  $-0.02$  respectively, and for fathers the effect sizes were  $d = -0.14$ ,  $-0.18$ , and  $0.08$ .

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Insert Table 3 about here

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### Short-term intervention effects

Table 4 contains descriptive statistics for mothers and fathers for all measures at pre- and post-intervention, as well as univariate  $F$  values for the main effects of time and condition and for the condition  $\times$  time interaction. Effect sizes for pre- to post-intervention change are also displayed in Table 4.

**Child behavior.** There were no significant multivariate effects of condition from pre- to post-intervention for mothers ( $F(2, 171) < 1.00$ , *ns*) or fathers ( $F(2, 117) < 1.00$ , *ns*), nor was there a significant condition  $\times$  time interaction,  $F(2, 171) < 1.00$ , *ns* for mothers and  $F(2, 117) < 1.00$ , *ns* for fathers. Thus, there were no differences between the intervention conditions in parent-reported changes over time in child behavior. There was, however a significant multivariate effect of time by both mother ( $F(2, 171) = 199.09$ ,  $p < .001$ ) and

father report ( $F(2, 117) = 44.36, p < .001$ ), and significant univariate effects for both scales on the ECBI (see Table 4). Thus, there were significant decreases in child behavior difficulties at post-intervention as reported by both parents. For mothers, these effects were large for both conditions, and for fathers the effect was large for TPOL and medium for the SHTP.

**Parenting styles.** For both mothers and fathers, the multivariate effects of condition ( $F(3, 170) < 1.00, ns$  for mothers;  $F(3, 116) < 1.00, ns$  for fathers) and the condition X time interaction were not significant ( $F(3, 170) < 1.00, ns$  for mothers;  $F(3, 116) < 1.00, ns$  for fathers) indicating that declines in dysfunctional parenting styles did not differ across the two interventions. The multivariate effect for time was significant for both parents ( $F(3, 170) = 97.53, p < .001$  for mothers,  $F(3, 116) = 12.42, p < .001$  for fathers), and there were significant univariate time effects for all three scales on the PS (see Table 4). For mothers, the significant effects from pre- to post-intervention in dysfunctional parenting were large for both interventions. For SHTP fathers, the effects were medium for over-reactivity and verbosity, and small for laxness. Fathers who received TPOL evidenced small intervention effects across all three styles of dysfunctional parenting.

**Parenting confidence.** There were no multivariate effects of condition for mothers ( $F(2, 171) = 2.47, ns$ ) or for fathers ( $F(2, 117) < 1.00, ns$ ), nor was there a significant multivariate condition X time interaction for mothers ( $F(2, 171) = 1.55, ns$ ) or fathers,  $F(2, 117) < 1.00, ns$ . However, there was a multivariate effect of time for both parents, indicating that there were significant improvements from pre- to post-intervention in parenting confidence for both conditions and on both types of parenting confidence,  $F(2, 171) = 173.30, p < .001$  for mothers,  $F(2, 117) = 19.78, p < .001$  for fathers. The effects sizes for mothers in both the SHTP and TPOL interventions were large, while for fathers the effect sizes were small for both conditions for setting self-efficacy, and medium for behavior self-efficacy.

**Parent-child relationship.** For both parents, the effect of condition and the condition X time interaction were not significant, while the effect of time was significant (see Table 4), suggesting that the parent-child relationship improved in quality from pre- to post-intervention for both interventions. The intervention effect for mothers in both conditions was large, while the effects for fathers were medium.

**Child maltreatment risk.** As with the previous measures, there were no significant multivariate effects of condition for either parent ( $F(2, 171) < 1.00$ , *ns* for mothers,  $F(2, 117) < 1.00$ , *ns* for fathers) and the multivariate condition X time interaction was also not significant,  $F(2, 171) < 1.00$ , *ns* for mothers,  $F(2, 117) = 1.02$ , *ns* for fathers. The main effect for time was significant for both parents,  $F(2, 171) = 35.40$ ,  $p < .001$  for mothers,  $F(2, 117) = 4.57$ ,  $p = .012$  for fathers. Mother-reported anger over child-rearing issues declined significantly in both interventions, with SHTP mothers showing a medium effect on this measure and TPOL mothers showing a small effect. Similarly, mothers' scores on the Brief CAP declined in both conditions over the course of the intervention period, with small effect sizes for both interventions. For fathers, however, there was no univariate effect of time for the Brief CAP, although there was a significant decline in fathers' scores on the PAI Intensity scale. Examination of the effect sizes for each condition indicated that the decline in father-reported anger was medium for the workbook condition, but not clinically significant for fathers who received TPOL.

**Parental adjustment.** There were no multivariate effects of condition for mothers ( $F(3, 170) < 1.00$ , *ns*) or fathers ( $F(3, 116) < 1.00$ , *ns* for fathers) and the condition X time interaction was also not significant,  $F(3, 170) < 1.00$ , *ns* for mothers,  $F(3, 116) = 2.19$ , *ns* for fathers. There was a significant multivariate improvement in parental wellbeing from pre- to post-intervention for both parents in both treatment conditions,  $F(3, 170) = 23.77$ ,  $p < .001$  for mothers,  $F(3, 116) = 7.40$ ,  $p < .001$  for fathers. For mothers, the univariate effects of time

were significant for all three scales on the DASS. The effects for depression were small in both conditions and the effects for stress were medium. On the anxiety scale there was a small effect for the TPOL condition, but no clinically meaningful effect for mothers who took part in SHTP. The only significant univariate effect of time on the DASS scales for fathers was for stress, which was in the medium range for SHTP fathers, and small for TPOL fathers. It should be noted that, even though there was no univariate effect for depression, the improvement shown by SHTP fathers was indicative of a small effect.

**Parental relationship quality.** There were no significant differences between intervention conditions on the measures of parental relationship quality ( $F(3, 144) < 1.00$ , *ns* for mothers;  $F(3, 112) = 2.16$ , *ns* for fathers) and the multivariate condition X time interaction was not significant, ( $F(3, 144) = 1.29$ , *ns* for mothers;  $F(3, 112) < 1.00$ , *ns* for fathers). The multivariate effect of time was significant for mothers  $F(3, 144) = 33.00$ ,  $p < .001$ ), with the univariate effects of time significant for mother-reported conflict over child-rearing on the PPC Extent and Problem scales. The effects were large for both of these scales for the SHTP group, and medium for the TPOL condition. There was no significant univariate effect of time for the RQI. The same pattern of findings was seen for fathers; both the multivariate effect of time ( $F(3, 112) = 12.31$ ,  $p < .001$ ) and the univariate effects of time on both of the PPC scales were significant, but not on the RQI. For SHTP fathers, the effect size of the decline over time in conflict over discipline was medium on both PPC scales, while for TPOL fathers, the effect was small on both scales.

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Insert Table 4 about here

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**Client satisfaction.** Independent group *t* tests revealed no significant differences in mothers' level of satisfaction with the intervention between the SHTP ( $M = 67.34$ ,  $SD =$

14.06) and TPOL conditions ( $M = 68.66$ ,  $SD = 12.17$ ,  $t(172) < 1.00$ , *ns*). There were also no significant differences in fathers' satisfaction between the SHTP ( $M = 64.31$ ,  $SD = 12.28$ ) and TPOL interventions ( $M = 63.36$ ,  $SD = 14.06$ ,  $t(118) < 1.00$ , *ns*).

**Intent-to-treat analyses.** An identical pattern of results was seen using an intent-to-treat approach across all measures and for both parents. There were no multivariate effects of condition, the condition X time interaction was not significant, but the multivariate effects of time were significant. In addition, the univariate effects of time significant in the per-protocol analyses were also significant using an intent-to-treat approach. Thus, for both parents, there were significant declines from pre- to post-intervention in levels of disruptive child behavior (ECBI Intensity and Problem), dysfunctional parenting styles (PS Over-reactivity, Laxness and Verbosity), risk of child maltreatment (PAI Intensity and Brief CAP for mothers only), and interparental conflict (PPC Problem and Extent). Moreover, significant improvements were evidenced in parenting confidence (PTC Setting and Behavior), the quality of the parent-child relationship, and parental adjustment (DASS Depression, Anxiety, and Stress for mothers, DASS Stress for fathers).

### Long-term intervention effects

Table 5 reports the descriptive statistics, results of univariate ANOVAs, and effect sizes for the post-intervention and follow up assessments.

**Child behavior.** There were no significant multivariate effects of condition from post-intervention to 6-month follow up for mothers ( $F(2, 156) < 1.00$ , *ns*) or fathers ( $F(2, 97) = 1.50$ , *ns*), nor was there a significant condition X time interaction,  $F(2, 156) < 1.00$ , *ns* for mothers and  $F(2, 97) = 1.01$ , *ns* for fathers. For fathers, there was no significant multivariate effect of time ( $F(2, 97) < 1.00$ , *ns*), indicating that the improvements shown from pre- to post-intervention were maintained at 6-month follow up. However, there was a significant multivariate effect of time for mothers ( $F(2, 156) = 4.66$ ,  $p = .011$ ). Follow up univariate

ANOVAs indicated that this was due to a significant univariate effect of time for the ECBI Intensity scale (see Table 5), indicative of a small but significant increase in the intensity of disruptive child behavior from post to follow up. It is worth noting that the scores on the ECBI Intensity scale at follow up were well below the scores reported by mothers at baseline (see Table 4) and were below the clinical cut-off score on the ECBI Intensity scale of 131. The effect size for this change was small for the SHTP condition, but not clinically meaningful for mothers who received TPOL.

**Parenting styles.** The same pattern of long-term intervention effects seen for the EBCI was shown for the PS. For both parents, the multivariate effects of condition were not significant ( $F(3, 155) < 1.00$ , *ns* for mothers;  $F(3, 96) < 1.00$ , *ns* for fathers), nor were the multivariate effects for the condition X time interaction,  $F(3, 155) < 1.00$ , *ns* for mothers;  $F(3, 96) < 1.00$ , *ns* for fathers. For fathers, the significant short-term intervention effects were maintained at follow up, as there was no multivariate effect of time,  $F(3, 96) < 1.00$ , *ns*. In contrast, the multivariate effect of time was significant for mothers,  $F(3, 155) = 12.07$ ,  $p < .001$ . There were significant univariate effects of time on all three scales on the PS, suggesting that across both conditions, there were increases in the use of dysfunctional parenting strategies at long-term follow up. For both conditions and on all three parenting styles, the effect sizes for this post-intervention to follow up change were small.

**Parenting confidence.** For both parents, there were no multivariate effects of condition ( $F(2, 156) = 2.31$ , *ns* for mothers;  $F(2, 97) < 1.00$ , *ns* for fathers) or time ( $F(2, 156) = 2.36$ , *ns* for mothers;  $F(2, 97) = 1.19$ , *ns* for fathers), and the condition X time interaction was also not significant,  $F(2, 156) < 1.00$ , *ns* for mothers;  $F(2, 97) = 1.47$ , *ns* for fathers). Thus, the improvements shown in parenting confidence at post-intervention were maintained.

**Parent-child relationship.** The significant univariate effect of time for mothers indicated that there were continued improvements in mother reports of the quality of the

parent-child relationship at follow up. The size of this effect was medium for SHTP mothers and small for TPOL mothers. The effect of time for fathers was not significant, nor was the condition X time interaction, suggesting that the short-term intervention improvements in the father-child relationship were sustained at follow up for both conditions.

**Child maltreatment risk.** The multivariate effects of condition were not significant for mothers ( $F(2, 156) < 1.00, ns$ ) or for fathers ( $F(2, 97) < 1.00, ns$ ), nor were the effects of time ( $F(2, 156) = 2.56, ns$  for mothers;  $F(2, 97) = 1.25, ns$  for fathers). The condition X time multivariate effect was also not significant,  $F(2, 156) = 1.99, ns$  for mothers;  $F(2, 97) < 1.00, ns$  for fathers. Thus, for both parents in both conditions, the short-term improvements in risk of child maltreatment were maintained at follow up. There was, however, a significant univariate effect of time for mothers on the PAI Intensity scale (see Table 5), which indicated that mother-reported anger continued to decline from post-intervention to follow up. This improvement was clinically meaningful only for mothers who received TPOL, with the effect size for this change in the small range.

**Parental adjustment.** The declines in mother-reported depression, anxiety and stress and in father-reported stress at post-intervention were maintained at 6-month follow up. There were no significant multivariate effects of condition ( $F(3, 155) < 1.00, ns$  for mothers;  $F(3, 96) < 1.00, ns$  for fathers) or time ( $F(3, 155) < 1.00, ns$  for mothers;  $F(3, 96) = 2.21, ns$  for fathers), and the condition X time interaction was also not significant,  $F(3, 155) < 1.00, ns$  for mothers;  $F(3, 96) < 1.00, ns$  for fathers. However, at the univariate level, there was a small and clinically meaningful decline in father-reported anxiety from post-intervention to follow up in both conditions (see Table 5).

**Parental relationship quality.** Although the multivariate effects of condition ( $F(3, 128) < 1.00, ns$  for mothers;  $F(3, 94) = 1.47, ns$  for fathers) and the condition X time interaction were not significant ( $F(3, 128) = 1.89, ns$  for mothers;  $F(3, 94) < 1.00, ns$  for

fathers), there was a significant multivariate effect of time for both parents,  $F(3, 128) = 5.51$ ,  $p = .001$  for mothers;  $F(3, 94) = 2.75$ ,  $p = .047$  for fathers. Inspection of the results of univariate ANOVAs indicated that mother-reported conflict over discipline issues on the PPC Problem and Extent scales had significantly increased at long-term follow up (see Table 5). However, the increase in interparental conflict was clinically meaningful only for mothers who completed SHTP, with small effect sizes on both measures. There were also significant and clinically relevant declines in relationship quality on the RQI for both parents, however, this finding is difficult to interpret since there were no changes on the RQI from pre- to post-intervention.

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Insert Table 5 about here

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**Intent-to-treat analyses.** Analyses involving all participants, regardless of assessment or intervention completion, produced an identical pattern of results as the per-protocol analyses reported above. For mothers, the same univariate effects of time were found for the ECBI Intensity scale, all styles of parenting on the PS, both the Extent and Problem scales on the PPC, and the RQI. The significant improvement in parental anger at follow up was found again using the intent-to-treat approach. Similarly, for fathers, no significant multivariate effects of time were found for any outcome domain, while the significant univariate effects of time found for DASS Anxiety and the RQI in the per protocol analyses were found again in the intent-to-treat analyses.

## Discussion

Previous randomized trials have confirmed that both online and workbook-based self-directed variants of Triple P are superior to no intervention or waitlist control conditions (Authors et al., under review; Markie-Dadds & Sanders, 2006; Morawska & Sanders, 2006).

Using a noninferiority design, the present study extends these earlier findings by showing that TPOL is not statistically significantly different in its effects from the existing self-help program, thus confirming our central hypothesis. Indeed, both interventions were associated with improvements in child disruptive behavior, positive parenting, family relationships, and parental adjustment producing effects comparable to other evaluations of Triple P interventions at the same level of intensity (see Nowak & Heinrichs, 2008). These findings combined with existing evidence concerning the effects of group, individual and telephone-assisted interventions (e.g., Morawska & Sanders, 2006), suggest that both self-directed variants tested in the present study are viable programming options for parents of children with early onset conduct problems.

Furthermore, few, if any, previous evaluations of self-help parenting interventions have demonstrated maintenance of post-intervention improvements in paternal parenting and ratings of child behavior. Thus, findings from the present study indicate that self-directed parenting programs may be an effective way to increase father participation in parent training. Online and workbook self-help options may be particularly attractive to fathers whose employment and work obligations may constrain the time that they have available to attend face-to-face therapist-led sessions (Phares, Rojas, Thurston, & Hankinson, 2010).

Notwithstanding the overall positive effects on child and parent outcomes, only around 40% of families had at least one parent complete all sessions of their assigned intervention (41% TPOL, 39% SHTP). However, the majority of families (72% TPOL, 92% SHTP) completed the content within each intervention that covered the core parenting strategies (defined as the completion of session 1-4 in TPOL and the completion of session 1-3 in SHTP). Intervention outcomes were the same across both per protocol and intent-to-treat analyses at post-intervention and follow up indicating that parents may have received a sufficient “dose” of the intervention even though they did not complete the full program. This

raises the possibility that an even “lighter touch” self-help variant could be effective, at least with some parents. Further research directly comparing self-help interventions of different intensity with in-person versions are required to investigate this further.

Both Triple P self-help programs were designed to be embedded within a broader public health system of parenting support. Parents’ capacity for self-regulation and ability to progress successfully through a self-help parenting intervention operates on a continuum and in a social context. For instance, parents with low levels of partner or significant other support, who live in high conflict situations or who have serious mental health problems (e.g., chronic depression) may require additional professional support to complete self-help programs. Moreover, parents with low entry levels of self-regulatory competence or who are partial or non-responders to self-help programs should be able to access a level of professional support suitable to their needs, underscoring the need for a range of flexible and accessible delivery options for parents.

There are several policy implications of research on self-help parenting interventions. Funding for parenting programs largely supports the delivery of services by professionals. A different funding model is needed to support parents completing an evidence-based intervention as a “do it yourself” program. Such programs are potentially very cost efficient and could greatly improve population reach. However, professionals may be less than enthusiastic about the prospect of interventions that dispense with their services. Further, research is needed to clarify whether the provision of professional contact (e.g., by telephone, email, text messaging, Skype or in person) enhances outcomes for vulnerable, high-risk or disadvantaged parents. Some evidence shows that contact with a trained telephone counselor can enhance outcomes for parents completing a workbook self-help program (Morawska & Sanders, 2006). Similar evidence is lacking for online parenting programs, although

interactive online interventions have shown substantial effects on a broad range of psychosocial and health outcomes (Barak, Hen, Boniel-Nissim, & Shapira, 2008).

The present results need to be interpreted in light of the study's limitations. It could be argued that clear interpretation of intervention effects are precluded due to lack of a control group. However, both interventions evaluated here have previously been shown to be more effective than control conditions, using similar samples and the present study was planned as a direct comparison of two active self-help interventions. This also ensured that all parents were able to access the intervention in a timely manner. Second, the primary effects were assessed by use of parent-report measures rather than independent observations of parent-child interaction. Observations were not possible in the present study because families were recruited throughout New Zealand. Furthermore, while observation methods are useful to answer some research questions, they are not a panacea. They do not provide a valid measure of the child's conduct problems when the target behaviors are of low frequency but are nonetheless highly disruptive (e.g., sibling conflict, stealing, lying), or when behaviors are episodic or are reactive to the presence of observers. The present study was strengthened, however, by the assessment of child behavior from the perspective of both mothers and fathers, providing collateral support for intervention effects on child behavior. Finally, as the sample included parents who were generally well-educated, middle class, and from European backgrounds, further research is needed to determine the effects of both self-help variants with disadvantaged parents with lower educational levels, minority parents or parents with complex mental health difficulties. Due to the increasing access of parents to the internet and the interest of vulnerable parents in participating in online programs (Love, Sanders, Metzler, Prinz, & Kast, 2012), such research is needed to identify a profile of responders and non-responders to self-help programs; within these profiles, parents' own stated preferences for how they wish to receive services may prove to be important.

Given the superiority of parenting interventions to no intervention or wait list control conditions is well established, the present study demonstrated the usefulness of noninferiority designs in testing the efficacy of new interventions. Such analyses will become increasingly important as policy makers push to make a range of evidence-based modalities available to parents to enhance the population reach of parenting interventions.

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Figure 1. Participant flow through the study

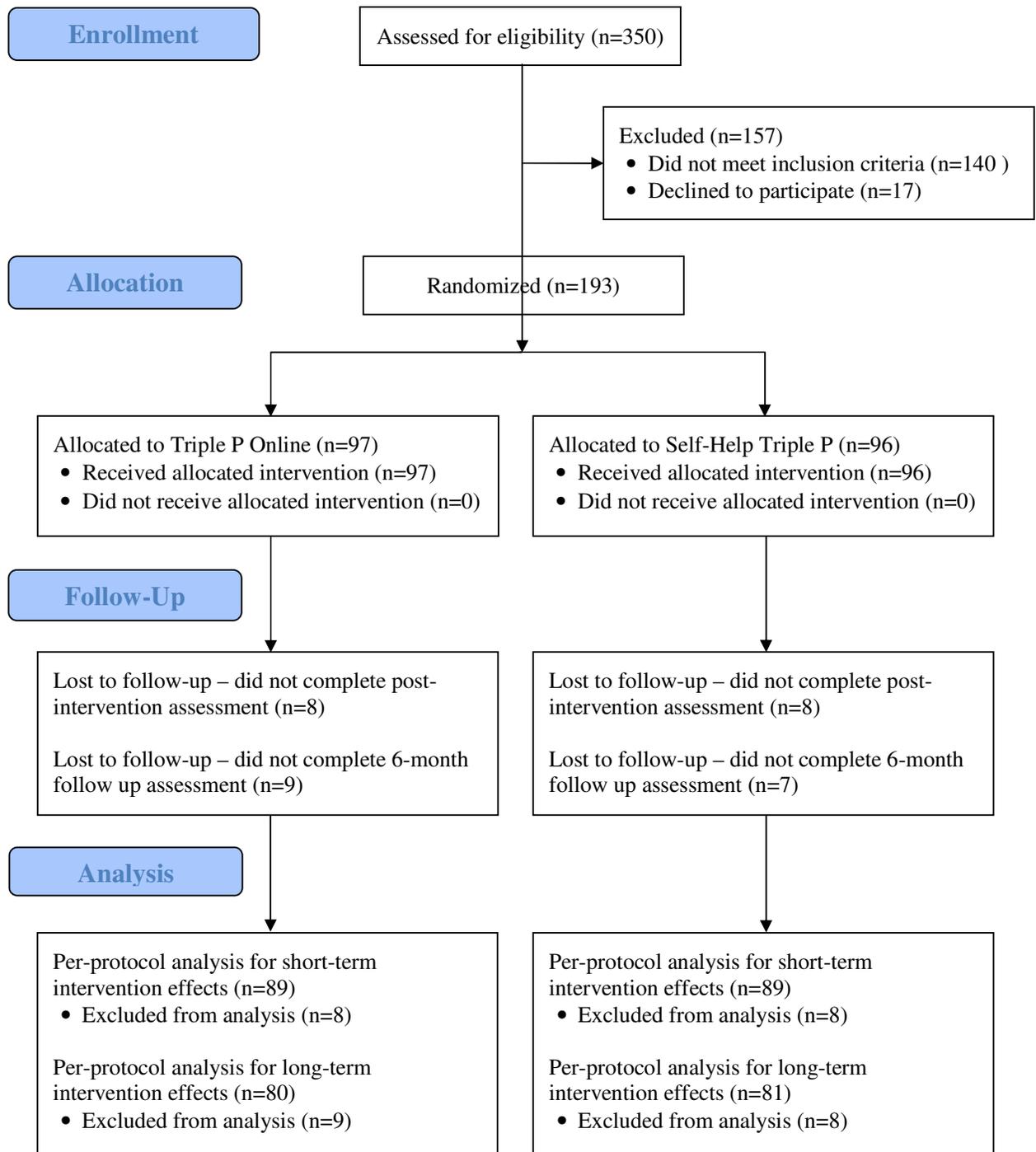


Table 1.

*Summary of key participant demographic characteristics: continuously score variables*

	Triple P Online (n = 97)		Self-Help Triple P (n = 96)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Child age	5.63	1.65	5.64	1.63
Mother age	37.58	6.33	36.81	5.42
Father age	39.44	6.65	39.84	6.86
Mother hours in paid employment per week	16.70	16.48	13.39	15.49
Father hours in paid employment per week	40.15	15.59	41.80	12.96

Table 2.

*Summary of key participant characteristics: categorically scored variables*

	Triple P Online (n = 97)	Self-Help Triple P (n = 96)
	%	%
Male child gender	71	64
Child ethnic/cultural background		
New Zealand European	92	89
Other	8	10
Family composition		
Two-parent biological or adoptive	79	78
One-parent biological or adoptive	15	11
Step, blended or intergenerational	6	10
Annual family income		
<\$40,000	19	20
\$40,000 to \$70,000	30	21
>\$70,000	52	59
Mother education		
High school	22	26
Trade or apprenticeship	8	7
Vocational training certificate or diploma	26	15
University degree	45	52
Father education		
High school	21	30
Trade or apprenticeship	20	14
Vocational training certificate or diploma	9	7
University degree	50	49

Table 3.

*Descriptive statistics and effect sizes for differences between groups in pre- to post-intervention improvements for evaluation of noninferiority*

	Self-Help Triple P			Triple P Online			<i>r</i>	Effect size <i>d</i>	
	Pre <i>M (SD)</i>	Post <i>M (SD)</i>	Pre to post improvement <i>M (SD)</i>	Pre <i>M (SD)</i>	Post <i>M (SD)</i>	Pre to post improvement <i>M (SD)</i>			
Mother report		<i>N</i> = 88			<i>N</i> = 86				
ECBI Intensity	152.32 (22.88)	114.99 (25.73)	37.33 (27.62)	155.60 (20.71)	114.17 (23.77)	41.43 (26.97)	.32	-.13	
ECBI Problem	21.55 (5.64)	10.91 (7.62)	10.64 (8.02)	22.40 (5.80)	10.92 (7.50)	11.49 (8.09)	.29	-.09	
PS Over-reactivity	3.61 (0.97)	2.60 (0.88)	1.02 (0.85)	3.61 (0.77)	2.57 (0.77)	1.04 (0.81)	.53	-.03	
Father report		<i>N</i> = 59			<i>N</i> = 61				
ECBI Intensity	136.75 (24.64)	117.17 (26.12)	19.58 (27.13)	141.71 (25.52)	118.09 (27.40)	23.63 (27.71)	.44	-.14	
ECBI Problem	17.12 (7.29)	12.04 (7.50)	5.08 (6.67)	18.29 (7.25)	11.99 (9.07)	6.31 (8.74)	.51	-.16	
PS Over-reactivity	3.22 (0.99)	2.85 (0.93)	0.37 (0.71)	3.11 (0.94)	2.77 (0.99)	0.34 (0.77)	.71	.05	

*Note.* *r* = correlation between pre- and post-intervention scores for entire sample.

ECBI = Eyberg Child Behavior Inventory; PS = Parenting Scale.

Mother report based on *N* = 88 for workbook and *N* = 87 for Triple P Online; Father report based on *N* = 59 for workbook and *N* = 61 for Triple P Online.

Table 4.

*Descriptive statistics and effect sizes for short-term intervention effects for all measures*

	Self-Help Triple P			Triple P Online			Univariate <i>F</i> for time
	Pre <i>M (SD)</i>	Post <i>M (SD)</i>	Effect size <i>d</i>	Pre <i>M (SD)</i>	Post <i>M (SD)</i>	Effect size <i>d</i>	
Mother report		<i>N</i> = 88			<i>N</i> = 86		
ECBI Intensity	152.32 (22.88)	114.99 (25.73)	1.36	155.60 (20.71)	114.17 (23.77)	1.54	362.06***
ECBI Problem	21.55 (5.64)	10.91 (7.62)	1.35	22.40 (5.80)	10.92 (7.50)	1.44	328.24***
PS Over-reactivity	3.61 (0.97)	2.60 (0.88)	1.20	3.61 (0.77)	2.57 (0.77)	1.29	268.69***
PS Laxness	2.91 (0.91)	2.23 (0.69)	0.94	2.79 (0.81)	2.16 (0.80)	1.00	156.60***
PS Verbosity	3.73 (0.98)	2.79 (0.90)	0.95	3.73 (0.79)	2.73 (0.91)	1.06	175.46***
PTC Setting	77.66 (12.95)	90.09 (7.03)	-1.35	79.10 (10.25)	90.46 (7.07)	-1.27	246.64***
PTC Behavior	62.09 (18.29)	84.47 (13.68)	-1.38	67.75 (14.07)	86.20 (11.85)	-1.38	313.51***
P-C Relationship	41.20 (8.10)	51.69 (6.97)	-1.21	41.08 (7.00)	52.51 (6.44)	-1.49	308.82***
PAI Intensity	129.19 (35.49)	111.32 (37.56)	0.63	124.10 (29.70)	111.62 (35.23)	0.46	51.27***
Brief CAP	5.63 (4.89)	4.28 (4.00)	0.36	5.13 (4.03)	3.56 (3.34)	0.49	29.55***
DASS Depression	5.50 (5.09)	3.86 (5.91)	0.28	5.23 (6.03)	3.52 (5.36)	0.27	12.94***
DASS Anxiety	2.61 (3.80)	2.04 (3.60)	0.13	2.86 (4.23)	1.65 (2.78)	0.38	8.74**
DASS Stress	11.78 (6.82)	7.70 (6.72)	0.54	11.91 (6.87)	6.90 (5.67)	0.66	61.79***
PPC Extent <sup>a</sup>	39.24 (16.07)	28.74 (14.49)	0.80	34.53 (13.57)	27.95 (10.74)	0.58	70.22***
PPC Problem <sup>a</sup>	6.00 (3.87)	3.30 (3.35)	0.83	5.24 (3.54)	3.34 (2.50)	0.66	79.13***
RQI <sup>a</sup>	33.07 (8.47)	34.13 (9.68)	-0.13	34.66 (7.83)	35.04 (7.92)	-0.05	1.35
Father report		<i>N</i> = 59			<i>N</i> = 61		
ECBI Intensity	136.75 (24.64)	117.17 (26.12)	0.72	141.71 (25.52)	118.09 (27.40)	0.85	74.42***
ECBI Problem	17.12 (7.29)	12.04 (7.50)	0.76	18.29 (7.25)	11.99 (9.07)	0.73	64.01***
PS Over-reactivity	3.22 (0.99)	2.85 (0.93)	0.52	3.11 (0.94)	2.77 (0.99)	0.45	27.74***
PS Laxness	2.70 (0.77)	2.49 (0.85)	0.33	2.66 (0.83)	2.39 (0.81)	0.41	16.15***
PS Verbosity	3.78 (0.80)	3.27 (1.03)	0.62	3.62 (0.89)	3.24 (0.99)	0.36	25.49***
PTC Setting	86.05 (10.18)	89.78 (8.60)	-0.42	84.34 (11.60)	88.61 (10.90)	-0.41	20.04***
PTC Behavior	75.15 (16.48)	84.42 (12.71)	-0.67	73.95 (20.15)	83.66 (14.81)	-0.54	39.58***
P-C Relationship	48.04 (8.56)	52.13 (8.15)	-0.54	47.33 (8.12)	52.64 (7.63)	-0.71	46.89***
PAI Intensity	115.60 (32.91)	102.43 (31.61)	0.40	113.68 (34.79)	109.70 (36.30)	0.11	6.92**
Brief CAP	4.51 (4.29)	3.84 (4.46)	0.20	4.66 (4.75)	3.96 (4.73)	0.15	3.55
DASS Depression	4.45 (5.73)	2.86 (5.86)	0.36	4.24 (6.55)	4.24 (6.96)	0.00	3.87
DASS Anxiety	1.81 (2.60)	1.76 (3.39)	0.02	2.40 (4.32)	2.26 (4.52)	0.05	<1.00
DASS Stress	9.53 (6.96)	6.31 (5.56)	0.62	8.64 (6.98)	7.20 (6.92)	0.23	19.44***

PPC Extent <sup>b</sup>	33.31 (12.48)	26.85 (9.51)	0.62	32.78 (14.14)	28.27 (12.00)	0.34	23.31***
PPC Problem <sup>b</sup>	4.92 (3.46)	3.09 (2.99)	0.69	4.15 (3.57)	2.84 (2.79)	0.43	33.41***
RQI <sup>b</sup>	35.90 (7.06)	36.46 (8.56)	-0.09	34.82 (6.91)	34.31 (8.27)	0.12	<1.00

Note. ECBI = Eyberg Child Behavior Inventory; PS = Parenting Scale; PTC = Parenting Tasks Checklist; P-C = parent-child; PAI = Parental Anger Inventory; CAP = Child Abuse Potential inventory; DASS = Depression Anxiety Stress Scales; PPC = Parent Problem Checklist; RQI = Relationship Quality Inventory.

<sup>a</sup> Based on  $N = 74$  for workbook and  $N = 74$  for Triple P Online. <sup>b</sup> Based on  $N = 58$  for workbook and  $N = 58$  for Triple P Online.

\*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 5.

*Descriptive statistics and effect sizes for long-term intervention effects for all measures*

	Self-Help Triple P			Triple P Online			Univariate $F$ for time
	Post $M$ ( $SD$ )	6-month follow up $M$ ( $SD$ )	Effect size $d$	Post $M$ ( $SD$ )	6-month follow up $M$ ( $SD$ )	Effect size $d$	
Mother report		$N = 81$			$N = 78$		
ECBI Intensity	115.28 (24.85)	120.45 (28.74)	-0.22	113.53 (24.18)	117.22 (26.35)	-0.15	5.40*
ECBI Problem	10.81 (7.37)	11.63 (7.82)	-0.11	10.79 (7.58)	10.22 (7.13)	0.07	<1.00
PS Over-reactivity	2.57 (0.87)	2.89 (0.95)	-0.49	2.50 (0.73)	2.79 (0.80)	-0.42	31.78***
PS Laxness	2.21 (0.67)	2.40 (0.76)	-0.32	2.16 (0.82)	2.34 (0.76)	-0.35	18.10***
PS Verbosity	2.77 (0.88)	2.99 (0.89)	-0.31	2.70 (0.91)	2.96 (0.83)	-0.37	19.27***
PTC Setting	90.48 (7.92)	90.64 (7.68)	-0.02	91.00 (6.46)	92.00 (6.61)	-0.17	1.35
PTC Behavior	84.78 (13.75)	83.01 (13.10)	0.15	86.82 (11.68)	87.46 (9.67)	-0.07	<1.00
P-C Relationship	51.71 (6.79)	55.69 (8.90)	-0.57	52.72 (6.41)	56.30 (8.46)	-0.43	37.04***
PAI Intensity	113.39 (37.78)	111.13 (39.39)	0.08	109.97 (34.74)	101.64 (37.29)	0.28	5.04*
Brief CAP	4.21 (4.00)	3.72 (3.97)	0.13	3.49 (3.37)	3.70 (4.05)	-0.08	<1.00
DASS Depression	3.73 (5.90)	3.57 (5.24)	0.03	3.52 (5.52)	3.31 (5.61)	0.04	<1.00
DASS Anxiety	1.95 (3.56)	2.00 (3.33)	-0.01	1.67 (2.80)	1.68 (3.34)	0.00	<1.00
DASS Stress	7.61 (6.53)	7.89 (6.21)	-0.05	6.70 (5.69)	7.31 (6.51)	-0.11	<1.00
PPC Extent <sup>a</sup>	27.57 (12.16)	31.87 (14.27)	-0.40	26.98 (10.14)	27.39 (11.00)	-0.04	7.11**
PPC Problem <sup>a</sup>	3.16 (3.09)	3.99 (3.44)	-0.29	3.14 (2.38)	3.40 (2.99)	-0.09	4.66*
RQI <sup>a</sup>	35.15 (8.60)	32.53 (8.69)	0.40	35.68 (6.76)	34.45 (8.17)	0.27	15.03***
Father report		$N = 48$			$N = 52$		
ECBI Intensity	120.83 (25.84)	123.60 (28.96)	-0.08	113.90 (21.27)	116.50 (25.94)	-0.11	1.30
ECBI Problem	12.20 (7.31)	12.69 (8.33)	-0.08	10.50 (7.71)	9.91 (7.58)	0.08	<1.00
PS Over-reactivity	3.01 (0.93)	2.83 (0.84)	0.22	2.68 (0.95)	2.71 (0.71)	-0.05	1.02
PS Laxness	2.55 (0.89)	2.39 (0.84)	0.27	2.35 (0.79)	2.33 (0.89)	0.03	2.30
PS Verbosity	3.39 (1.05)	3.17 (0.90)	0.26	3.25 (0.99)	3.23 (0.90)	0.02	1.81
PTC Setting	88.74 (8.91)	90.59 (8.34)	-0.27	89.60 (10.66)	89.52 (10.11)	0.01	1.82

PTC Behavior	82.99 (12.86)	84.81 (14.19)	-0.18	86.13 (11.39)	84.80 (13.92)	0.15	<1.00
P-C Relationship	51.91 (8.80)	51.62 (9.13)	0.04	53.40 (6.60)	53.08 (6.47)	0.06	<1.00
PAI Intensity	106.14 (31.31)	107.78 (33.13)	-0.06	105.30 (35.17)	106.59 (37.97)	-0.05	<1.00
Brief CAP	4.02 (4.72)	3.13 (3.34)	0.22	3.58 (4.25)	3.20 (3.30)	0.08	2.02
DASS Depression	3.28 (6.37)	2.61 (4.22)	0.16	3.48 (3.96)	2.54 (3.18)	0.25	3.72
DASS Anxiety	1.87 (3.58)	1.00 (1.47)	0.30	1.78 (2.43)	1.20 (2.31)	0.24	5.99*
DASS Stress	6.83 (5.71)	6.83 (5.31)	0.00	6.39 (5.77)	5.30 (4.54)	0.21	1.12
PPC Extent <sup>b</sup>	28.13 (9.69)	28.85 (10.73)	-0.09	28.33 (12.11)	27.49 (10.45)	0.08	<1.00
PPC Problem <sup>b</sup>	3.35 (3.14)	3.47 (3.33)	-0.04	2.85 (2.85)	3.01 (2.87)	-0.05	<1.00
RQI <sup>b</sup>	36.86 (8.38)	35.47 (8.11)	0.23	34.74 (7.27)	33.42 (7.59)	0.30	6.52*

*Note.* ECBI = Eyberg Child Behavior Inventory; PS = Parenting Scale; PTC = Parenting Tasks Checklist; P-C = parent-child; PAI = Parental Anger Inventory; CAP = Child Abuse Potential inventory; DASS = Depression Anxiety Stress Scales; PPC = Parent Problem Checklist; RQI = Relationship Quality Inventory.

<sup>a</sup> Based on  $N = 66$  for workbook and  $N = 66$  for Triple P Online. <sup>b</sup> Based on  $N = 48$  for workbook and  $N = 50$  for Triple P Online.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .