

THE PARENTING WISELY
PARENT TRAINING PROGRAM:
AN EVALUATION WITH AN AUSTRALIAN SAMPLE

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ABSTRACT

The effectiveness of the Parenting Wisely parenting program was examined with an Australian sample in regards to improving parenting knowledge, parental sense of competence, and child behavior. The impact of group versus individual treatment format was examined. One hundred and sixteen parents and their children were randomly assigned to three conditions: a two-session group based intervention, a two-session individual intervention, or to a waitlist control group. Across both treatment modalities results revealed a significant increase in parental satisfaction, efficacy, and parenting knowledge and a reduction in child problem behavior. Improvements were maintained at three-months follow-up. Results indicated completing the program via individual format enhanced treatment gains relative to the group format.

There is a need to develop cost effective interventions which target children showing early signs of aggressive behaviour as well as for children with an established pattern of aggressive and anti social behaviours. These interventions need to have evidence for being effective across cultures and distances. In addition, these interventions need to be relatively simple and easy to use so that expensive and intensive practitioner training is not a barrier for dissemination.

Behavioural parent training has been shown to reduce and prevent conduct problems and behavioural disorders in children (Connolly, Sharry, & Fitzpatrick, 2001; Miller & Printz, 1990; Taylor & Biglan, 1998; Webster-Stratton & Hammond, 1997) and to bring children's problem behaviors within the normative range of functioning relative to peers (Kazdin, 1998). A meta-analysis of 36 randomized studies on behavioural parent training found an effect size average of .86 in decreasing child anti-social behaviour (Serketich and Dumas 1996). Hence, the effectiveness of behavioural parent training is well established and has the largest empirical support of any psychosocial intervention (Kazdin, 2006, p 32). The current study will compare the effectiveness of both individual and group parent training both of which are delivered in an easy to use, highly cost effective manner that does not require extensive practitioner training.

Self-directed Parenting Programs

Research demonstrates brief, self-directed parent education can be as effective as therapist led intervention. Nicholson & Sanders, (1999) compared self-directed behavioural family intervention with standard behavioural family intervention with a therapist and a control group. No difference was found on measures of child disruptive behaviors for the 2 treatment groups. Webster-Stratton demonstrated a self-administered videotaped parenting program was effective in significantly improving parent-child interactions, improving parental attitudes, and reducing child conduct behaviour (Webster-Stratton, 1985; 1990; 1994; Webster-Stratton, Hollinsworth, & Kolpacoff, 1989). Webster-Stratton's program has been shown to reduce maternal depression, increase both parent and child's problem solving skills, and improve parent communication skills (Webster-Stratton, 1994). The program is cost effective (Thompson, Ruma, Schuchmann, & Burke, 1996; Webster-Stratton, & Hancock, 1998), achieves high consumer satisfaction and low drop out rates (Webster-Stratton & Hancock, 1998). The self-administered format was shown to be just as effective as counsellor-therapist administered intervention.

In one study (Webster-Stratton, Kolpacoff, & Hollinsworth, 1988), individual administered videotape achieved highly significant improvement in child conduct problems, with a low drop out rate of 8.2% and treatment effects sustained at one year follow-up (Webster-Stratton, Hollinsworth, & Kolpacoff, 1989). The low drop out is noteworthy, considering the average drop out rate in parent training has been reported to be 28% (Forehand, Middlebrook, Rogers, & Steffe, 1983), However, despite the effectiveness of the videotaped format, consumer satisfaction was significantly lower

compared to videotape combined with group discussion. Participants in the videotape only condition indicated the lack of personal contact and feedback were undesirable (Webster-Stratton et al., 1988).

One aspect that may account for the relative success of self-directed parent training is that parental sense of competence may be improved more than with therapist-directed interventions. Parenting sense of competence is conceptualized as the degree to which a parent feels competent and confident in the parental role (Coleman & Karraker, 1997; Johnston & Mash, 1989). This construct contains two factors: parenting self efficacy, defined as the parent's perceived competence in the parenting role and satisfaction, defined as the extent to which parents are satisfied with the parenting role (Johnston & Mash, 1989). Parental self-efficacy is correlated with parent reports of their child's behaviour problems. Parents with low self-efficacy perceive their child's behaviour as more problematic, than parents with high self-efficacy (Johnston & Mash, 1989; Lovejoy, Verda, & Hays, 1997; Teti & Gelfand, 1991). The literature postulates this relationship is reciprocal. Coping with a child's problem behaviors may cause a parent to feel less efficacious and parents who feel less competent may unintentionally elicit child problem behaviour. When children misbehave, parents with high self-efficacy are more likely to be persistent, whereas parents with low self-efficacy are more likely to withdraw or concede defeat (Coleman & Karraker, 1997; Donovan, Lewis, & Walsh, 1990), failing to implement strategies they perceive as difficult.

Parenting satisfaction is defined as the extent to which a parent is satisfied with their parenting role (Gibaud-Wallston & Wandersman, 1978). Coleman and Karraker (2000) argue parental self-efficacy and satisfaction are intertwined. Parents with low self-efficacy are likely to derive less pleasure from their role as parents. Research indicates high levels of perceived efficacy result in greater parental persistence and satisfaction (Coleman & Karraker, 2000). Conversely, low self-efficacy is related to poor persistence, depression (Teti & Gelfand, 1991), self-blaming, negative attributions, and diminished role satisfaction (Bandura, 1989).

Using Computer CD-Rom in Parent Training

The interactive style and feedback of CD-Rom may compensate the lack of a therapist which is reported to be a weakness of self-administered videotape programs. Sanders (1982) compared parent instruction with and without feedback and found feedback increased parent attending to appropriate child behaviour and decreased attending to deviant behaviour. Therefore combining videotape modeling with feedback via CD-Rom may increase both the effectiveness and satisfaction of parent self-administered training.

Interactive CD-Rom may reduce barriers to parent education. Research indicates therapists' attempts to correct parental errors by teaching or confrontation increases parental resistance and contributes to drop out (Patterson & Forgatch, 1987). Training via CD-Rom can correct common parental errors without parents feeling personally criticized or judged. CD-Rom may be ideal for parents who have difficulties discussing family

problems or who are afraid to ask for help (MacKenzie & Hilgedick, 1999). Practitioner competence is a highly variable component of family interventions (Barnosky, 2002) and is greatly reduced with self-administered instruction. Thus another advantage of CD-Rom is the client will not be distracted by shortcomings or weaknesses of the therapist, or a mismatch between therapist and client characteristics.

Parenting Wisely (PW)

Parenting Wisely is a parent training CD-Rom program developed by Gordon (2000). Through self-administration, parents view video clips of nine common family problems. After selecting a problem parents view a video clip depicting a family struggling with that problem. Parents are encouraged to select a solution to the problem out of three alternatives, view a video enactment of their selected solution and participate in a critique of that choice. The program presents strategies such as contracting, contingency management, specific commands, I statements, active listening, assertive discipline, praise, and role modeling behaviour. At the end of each problem a series of multiple-choice questions reviews the concepts and skills depicted in that section. Parents complete the program in a little over two hours.

Evaluations on Parenting Wisely

In a randomized study, Kacir and Gordon (1999) evaluated use of the PW program in a disadvantaged community of Appalachia. Compared to waitlist control, mothers using the

program reported significantly lower rates of child problem behaviors and increased knowledge of adaptive parenting practices at one-month follow-up. These gains were maintained at four month follow-up and effect sizes on the Child Behaviour Inventory (ECBI) (Eyberg & Ross, 1978) were .66 on the Problem Intensity scale and .51 on the Problem Number scale.

Gordon and Kacir (1997) evaluated mandatory use of PW with court-referred low-income parents of juvenile delinquents compared to a matched control group of youth who received probation services. After parents completed PW these adolescents showed a 50% reduction in problem behaviour (as measured on the ECBI). These gains were maintained at one, three, and six months follow-up. Use of the program resulted in a significant increase in effective parenting knowledge that was also maintained across all follow-up periods. Effect sizes ranged from .49 to .76, indicating a robust treatment effect. Eighty-two percent of youth in the treatment group who scored in the clinically significant range at pre-test showed reliable change on the ECBI total problem scale (scoring in the normal range) at 3 month follow-up. For the control group 38% scored in the recovered range.

In a study using parents at outpatient clinics and a residential treatment center for juvenile delinquents, Segal, Chen, Gordon, Kacir, & Gylys (2003) found significant decreases in the number and intensity of child problem behaviors on the ECBI, with a third to half of the children showing clinically significant change. Effect sizes ranged from .78 (ECBI) to 1.27 (Parent Daily Report).

In a study on family violence, the program was found to reduce spousal violence and violence towards children by improving parental communication and problem solving skills. These reductions in family violence were maintained at 3 and 6 month follow-up (Rolland-Staner, Gordon, & Carlston, 2001). Participation in the program also decreased impulsive and hyperactive child behaviour.

An independent randomized control study of PW (Carr & Friedman, 2002) showed increased use of effective parenting skills and improved family functioning. In an outpatient community centre 300 parents who completed PW reported improved parenting skills and very high client satisfaction. Improvements were still present at 3 and 6 month follow-up (Paull, Caldwell, & Klimm, 2001). Carr and Friedman (2002) compared PW administered with family therapy to family therapy alone. Compared to the control group, parents who completed PW with family therapy reported improved relationships, significantly less depression, fewer behaviour problems, and their children self-reported fewer behavioural difficulties.

Hypotheses

It is hypothesized that completing the PW program, either individually or by group format, will result in a(n): increase in parental sense of competence, a reduction in child behavioural problems, an increase in parenting knowledge, greater satisfaction in the group than in the individual format, and a lower drop out rate than the average drop out rate of 28% for parent education programs (Forehand et al, 1983). It is expected that

parental sense of competence and satisfaction will be maintained over time and related to the maintenance of child behavioural improvements. This study will explore whether there were any systematic differences between parents who dropped out and those that completed the program.

METHOD

Participants

In response to an advertising 137 families expressed interest in volunteering for the study. The final sample consisted of 116 families that completed pre-test data collection. One parent and one child from each family participated in the project. Participating parents ranged in age from 24 to 55 ($M = 40.7$, $SD = 5.3$), with 92 female ($M = 40.5$ years, $SD = 4.8$) and 24 male ($M = 41.2$ years, $SD = 7.2$) participants. Child participants ranged in ages from 9 to 15 ($M = 11.9$, $SD = 1.8$), with 57 being female ($M = 12.1$ years, $SD = 1.8$) and 59 male ($M = 11.7$ years, $SD = 1.8$). Children ranged in school years from Grade 3 to Year 11. The majority of the sample was in Grades 5 to 7 (51%).

Participating families were allocated randomly to either a waitlist control or to one of two treatment groups (individual or group administration). Participants in the treatment condition ($n = 92$ families) completed the PW program. This sample included 22 participants who had been previously allocated to the waitlist control group, and after

three months were randomly assigned to group or individual administration. Hence, data from these 22 families are included in both the control and treatment group analyses.

The identified ethnic background of participating families was predominately Australian ($n = 76, 66\%$), then Italian ($n = 14, 12\%$) and Maltese ($n = 9, 9\%$). Parent educational levels were: college or higher, 20%; technical school certificate, 15%; high school diploma, 21%; completed years 10 or 11, 39%, and year 9 or below, 6%. The most frequent occupation reported by parents was parent or home duties, with 24 participants (21%), all female, followed by administration ($n = 16, 14\%$), manager ($n = 7, 6\%$), self-employed ($n = 7, 6\%$) and police ($n = 7, 6\%$). Holinshed Index of Social Position scores were 31% upper-middle, 27% middle, 36% lower middle, and 5% lower.

Materials and outcome measures

The materials used in this study consisted of the PW program, computer equipment to run the program, workbook and the following outcome measures:

Parenting Sense of Competence (PSOC). The PSOC (Gibaud-Wallston & Wandersman, 1978) consists of 16 items that measures parental competence on two dimensions: (1) Efficacy - defined as the parent's perceived competence in the parenting role and problem solving ability (reliability co-efficients of .82) and (2) Satisfaction - defined as the extent to which parents are satisfied with the parenting role as reflected by their level of anxiety and frustration (reliability coefficient of .70 Gibaud-Wallston & Wandersman, 1978). Johnston and Mash (1989) found the overall internal consistency of the PSOC to be .79,

with a Cronbach alpha of .75 for the Satisfaction factor and .76 for the Efficacy factor. Other studies have demonstrated good internal consistency, ranging from .77 to .82 for parents on the Efficacy and Satisfaction scales, and a factor structure that supported those two factors as distinct aspects of parenting self-esteem (Ohan, Leung, & Johnston, 2000). Hence, it is a valid and reliable measure of parental efficacy and satisfaction.

Eyberg Child Behaviour Inventory (ECBI). The ECBI is a 36-item measure, designed for children aged 2-16 years, that assesses behaviors likely to be present in a child with behaviour problems. The inventory indexes the number (problem scale) and frequency (intensity scale) of problem behaviors. The ECBI is a valid instrument in discriminating between problem and non-problem children (Eyberg & Ross, 1978). The ECBI test-retest reliability is .86. The ECBI has an internal consistency of .98 (Eyberg & Ross, 1978).

Parenting Knowledge Questionnaire (PKQ). The PKQ (Gordon, 1994) is a 34 item, multiple-choice questionnaire that assesses knowledge about parenting strategies taught in the PW program. The questionnaire asks questions about specific terms of the program, such as, active listening, assertive discipline, contingency management, contracting, and so forth. The PKQ has previously been used in research involving PW (Jenks, Gordon, & Lagges, 1999). A pilot study using only the PW program demonstrated increased performance on the PKQ, compared to a control group receiving no parent skill information (Segal, Chen, Gordon, Kacir, & Gylys, 2003).

Procedure

Individual Administration Condition. Participants allocated to individual administration scheduled an appointment time to attend a centre of their choice: a University Psychology

Clinic and two community treatment centers in outer metropolitan Melbourne. Participants completed the pretest outcome measures, were given basic instructions on how to navigate through the program, were advised they could complete as much of the program as they desired and they could return for additional sessions (40% 54% and 6% took one, two and three sessions respectively). An average of 3.2 hours was spent completing the program. Parents were given the PW workbook to keep. At the conclusion of the program participants completed a satisfaction questionnaire, and three months later completed all of the outcome measures.

Group Administration Condition. Participants in this condition completed the PW program in a group setting. The researcher facilitated each group and navigated parents through the program, viewing each problem in the series. After each vignette was viewed the group was asked to select the solution they would most likely experience in their own families. The facilitator used the question and answer section to generate group discussion. After viewing at least one of the ineffective solutions the correct solution to each problem was shown. The facilitator allowed discussion to develop amongst the group, while allowing almost 2-3 hours for each of the two sessions. An average of 4.5 hours was spent completing the program. At the completion of the program participants were asked to complete a satisfaction questionnaire, and three months later completed all of the outcome measures.

Control group. The waitlist control group did not receive any intervention. At the conclusion of a three-month wait, these participants were asked to complete and return a

second questionnaire booklet. Upon receipt of this material, the researcher contacted the participant to offer them a place in the treatment program. Those (n=22) that wished to proceed were randomly allocated to either the group or individual administration of the program. Their final scores after the three-month wait were used as pre-test scores for treatment, with follow up measures given three months after treatment.

RESULTS

Random Allocation Analysis. In regards to age, a multivariate analysis of variance showed participants in the waitlist control group, the individual format, and the group format did not significantly differ in terms of parent or child mean age, Wilks' $\Lambda = .95$, $F(4, 224) = 1.51$, $p > .05$. A chi-square analysis indicated no significant difference between the treatment groups according to participating parents' sex, $\chi^2(2, N = 116) = 1.29$, $p > .05$, Cramer's $v = .11$, participating child's sex, $\chi^2(2, N = 116) = 4.54$, $p > .05$, Cramer's $v = .20$, and parents' education level, $\chi^2(8, N = 116) = 3.15$, $p > .05$, Cramer's $v = .12$.

Hypothesis Testing. All analyses utilized a 2-way repeated measures Manova, with *time* (pre-test and post-test) and treatment format (individual, group, or waitlist control) as independent variables. An examination of percentage change scores from baseline to post-test was conducted for each dependent measure. Percentage change was calculated for each dependent variable measure by subtracting the overall mean pre-test score (t_1) from the overall mean post-test score (t_2). Percentage change was obtained by dividing the change score by the overall mean pre-test score, and multiplying by 100.

Parenting Sense of Competence (PSOC).

A 2-way repeated measures Manova was utilized, with the two dependent measures being parental satisfaction and efficacy scores on the PSOC. Multivariate analyses revealed a significant interaction effect for the two measures, Wilks' $\Lambda = .80$, $F(4, 242) = 7.04$, $p = .00$, $\eta^2 = .10$. There was also a significant multivariate effect for time, Wilks' $\Lambda = .85$, $F(2, 121) = 10.85$, $p = .00$, $\eta^2 = .15$, however, there was no significant multivariate effect for treatment format, Wilks' $\Lambda = .98$, $F(4, 242) = .66$, $p > .05$, $\eta^2 = .01$. Means and standard deviations for satisfaction and efficacy scores are presented in Table 1.

To examine the interaction between treatment format and time, follow up tests of simple main effects were performed. Analyses are separated into between-group and within-group comparisons.

Within-Group Comparisons. Means in both treatment groups improved across time on satisfaction and efficacy, while the waitlist control group experienced a slight decline. Within-group simple effects revealed the measures changed significantly over time for the individual format, Wilks' $\Lambda = .74$, $F(2, 121) = 20.77$, $p = .00$, $\eta^2 = .26$, and for the group format, Wilks' $\Lambda = .95$, $F(2, 121) = 3.01$, $p = .05$, $\eta^2 = .05$, but not for the waitlist control, Wilks' $\Lambda = .99$, $F(2, 121) = .59$, $p > .05$, $\eta^2 = .01$.

Between-Group Comparisons. With regard to the pre-test period, a simple effects multivariate test revealed no significant differences among the three groups, Wilks' $\Lambda = .94$, $F(4, 242) = 1.77$, $p > .05$, $\eta^2 = .03$. There were also no significant differences among the groups at post-test, Wilks' $\Lambda = .98$, $F(4, 242) = .68$, $p > .05$, $\eta^2 = .01$.

Analysis of Change. The biggest percentage change from baseline to post-test occurred for participants in the individual format on both parenting satisfaction and efficacy, with an improvement of 16.55% and 13.47%, respectively. Participants in the group format experienced a 5.50% increase in parental satisfaction and 4.97% improvement in efficacy at program completion. In contrast, waitlist participants experienced a slight decrease in both parenting satisfaction (-2.39%) and efficacy (-1.78%).

Table 1.

Descriptive statistics for PSOC and Parenting Knowledge (N=125)

	Treatment Group	N	Pre-test		Post-test	
			M	SD	M	SD
<i>Efficacy</i>						
	Waitlist	46	28.13	6.22	27.63	6.49
	Individual	40	25.98	7.61	29.48	4.41
	Group	39	27.77	7.98	29.15	7.48
<i>Satisfaction</i>						
	Waitlist	46	35.48	8.06	34.63	7.98
	Individual	40	30.50	10.52	35.55	7.86
	Group	39	34.54	8.18	36.44	8.13
<i>Knowledge</i>						
	Waitlist	46	17.91	5.33	17.30	5.46
	Individual	40	16.56	5.65	23.15	4.86

Group	39	18.55	6.80	24.45	4.13
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Parenting Knowledge

A 3 x 2 repeated measures Anova on the PKQ indicated a significant interaction effect between treatment groups over time; $\Lambda = .70$, $F(2, 122) = 25.74$, $p = .00$, $\eta^2 = .30$. There was also a significant main effect for time; $\Lambda = .63$, $F(1, 122) = 73.12$, $p = .00$, $\eta^2 = .38$, and treatment format; $F(2, 122) = 7.20$, $p = .00$, $\eta^2 = .11$. Mean knowledge scores from pre to post-test are presented in Table 1. To examine the significant interaction between treatment format and time follow-up tests of simple main effects were performed.

Within-Group Comparisons. Mean scores for both treatment groups improved in parenting knowledge. Within-group simple effects revealed change over time was significant for both the individual, Wilks' $\Lambda = .66$, $F(1, 122) = 63.50$, $p = .00$, $\eta^2 = .34$, and group format, Wilks' $\Lambda = .70$, $F(1, 122) = 52.20$, $p = .00$, $\eta^2 = .30$, but not for the waitlist control, Wilks' $\Lambda = .99$, $F(1, 122) = .64$, $p > .05$, $\eta^2 = .01$.

Between-Group Comparisons. At pre-test analysis of simple effects revealed no significant difference between the treatment groups, $F(2, 122) = 1.16$, $p > .05$, $\eta^2 = .02$. However, at post-test the three treatment groups differed significantly, $F(2, 122) = 26.54$, $p = .00$, $\eta^2 = .30$. Examination of means in Table 1 reveals both the individual and group

formats differed from the control group at post-test and this difference was significant at the .001 level; $F(2, 122) = 26.54, p = .00, \eta^2 = .30$.

Analysis of Change. The parenting knowledge mean scores were used to compute percentage change from pre to post-test. The biggest change occurred with the individual format with a 39.79% improvement. Participants in the group format experienced an improvement of 31.81% in parent knowledge. Conversely, waitlist control participants experienced a decrease of 3.4% in mean scores. Participants who completed the program experienced a significant improvement in parenting knowledge compared to parents on a waitlist.

Parent Reports of Child Behaviour

Within-Group Comparisons. Univariate analyses for the individual format showed significant improvement across time on both ECBI Intensity scores, $F(1, 122) = 42.77, p = .00, \eta^2 = .26$, and ECBI Problem scores, $F(1, 122) = 49.02, p = .00, \eta^2 = .29$. The group format also showed significant improvement on both ECBI Intensity scores, $F(1, 122) = 42.77, p = .00, \eta^2 = .26$, and Problem scores, $F(1, 122) = 49.02, p = .00, \eta^2 = .29$. Means, standard deviations and effect sizes are reported in Table 2. As suggested by Becker (1998), a single group effect size for the control condition was subtracted from the single group effect sizes for the treatment groups.

Table 2.

Pre and Post-Test Means of Eyberg ECBI Intensity and Problem Scores (N = 125)

	Treatment Group	N	Pre-test		Post-test		Effect size
			M	SD	M	SD	
<i>ECBI Intensity</i>							
	Waitlist	46	99.90	37.11	102.76	35.30	-.08
	Individual	40	119.96	35.52	97.88	26.53	.70
	Group	39	115.51	35.53	102.26	34.51	.45
<i>ECBI Problem</i>							
	Waitlist	46	8.80	8.87	9.65	8.33	-.10
	Individual	40	14.43	7.73	8.33	5.59	.89
	Group	39	13.72	9.16	8.26	7.44	.69

Between-Group Comparisons. A simple effects multivariate test revealed a significant difference between the three groups at baseline, Wilks' $\Lambda = .87$, $F(6, 240) = 2.84$, $p = .01$, $\eta^2 = .07$, but not at post-test, Wilks' $\Lambda = .97$, $F(6, 240) = .70$, $p > .05$, $\eta^2 = .02$. Univariate simple effects revealed a significant difference between groups at baseline on both ECBI Intensity scores, $F(2, 122) = 4.00$, $p = .02$, $\eta^2 = .06$, and ECBI problem scores, $F(2, 122) = 5.51$, $p = .01$, $\eta^2 = .08$. Univariate analysis for the ECBI Intensity Scores show the waitlist control group significantly differed from the individual format ($p = .01$) and the group format ($p = .049$). The Problem Number scores for the waitlist control were also significantly different from both individual ($p = .00$) and group formats ($p = .01$).

Analysis of Change Scores. Inspection of Table 3 shows parents in the waitlist condition reported an increase in child problem behaviour over time on each dependent measure. In contrast, parents in the treatment conditions reported consistent improvements in child

behaviour at post-test. The greatest percentage change on both measures was reported by participants in the individual condition.

Table 3.

Percentage Change from Baseline in Parent Reported Child Problem Behaviour Scores

Treatment Group	Intensity Score	Problem Scores
Waitlist	-2.9%	-9.7%
Individual	19.1%	42.3%
Group	11.5%	39.8%

Relationship between Change Scores. A series of correlation analyses were conducted to examine the relationship between change scores on all dependent variables. Correlations between change scores indicated that satisfaction, efficacy and knowledge were all inversely related to ECBI scores (range of -.28 to-.58).

Program Satisfaction

Participants rated how enjoyable and how satisfied they were with the program on a five point Likert scale. More than 92% of participants ($N = 82$) surveyed said they found the program enjoyable and 89% indicated they were satisfied with the program. Chi-Square analysis indicated parents who completed the individual format found the program to be significantly more enjoyable and satisfied than those completing it in group format, $\chi^2 (3, N = 83) = 9.95, p = .02$, Cramer's $v = .35$; $11.10, p = .01$, Cramer's $v = .37$, respectively. Over 80% of participants said they would recommend the program to others. Chi-Square

analysis indicated no significant difference between formats on this measure; $\chi^2 (2, N = 82) = 4.98, p > .05$, Cramer's $v = .25$.

Attrition

Four participants (4.3%), two each from the individual and group formats, failed to complete the program in its entirety by failing to attend subsequent sessions. Twelve participants (13%) failed to return the 1-month follow-up questionnaires and a further 21 (38.9%) failed to return the 3-month follow-up questionnaires.

Three Month Follow-Up

Parenting Sense Of Competence (PSOC) A 2-way repeated measures Manova was utilized, with the two dependent measures being parental satisfaction and efficacy scores at post-test and 3 month follow-up. Multivariate analyses revealed a significant interaction effect, Wilks' $\Lambda = .80, F (8, 164) = 2.38, p = .02, \eta^2 = .10$, and a significant multivariate effect for time, Wilks' $\Lambda = .88, F (4, 82) = 2.92, p = .03, \eta^2 = .13$. The multivariate effect for treatment format was not significant, Wilks' $\Lambda = .96, F (4, 168) = .77, p > .05, \eta^2 = .02$. Means and standard deviations for satisfaction and efficacy scores are presented in table 5.

Within-Group Comparisons.

Mean scores for both treatment groups improved across time on parent satisfaction and efficacy, and remained relatively stable at follow-up (see Table 5). However, within-group simple effects revealed significant change over time only for the individual format, Wilks' $\Lambda = .79$, $F(4, 82) = 5.55$, $p = .00$, $\eta^2 = .21$. There was no significant effect for the group format, Wilks' $\Lambda = .93$, $F(4, 82) = 1.50$, $p > .05$, $\eta^2 = .07$, or the waitlist control, Wilks' $\Lambda = .99$, $F(4, 82) = .25$, $p > .05$, $\eta^2 = .01$.

Univariate analyses revealed significant improvement over time for both satisfaction, $F(1, 170) = 2.28$, $p = .00$, $\eta^2 = .06$, and efficacy scales, $F(1, 170) = 2.28$, $p = .01$, $\eta^2 = .03$ for the individual format. The difference between pre and post-test means and between pre-test and follow-up means were significant on both measures ($p = .02$). The significant improvement for the individual format was maintained from post-test to follow-up.

Table 5.

Mean Scores at Pre-Test, Post-Test and Follow-up for Parental Efficacy, Satisfaction and Knowledge Scores

Subscales	N	Pre-test		Post-test		Follow-up		
		M	SD	M	SD	M	SD	
<i>Efficacy</i>								
Waitlist	31	27.48	6.72	27.13	7.31	27.00	7.18	
Individual	25	25.40	8.02	29.16	5.03	29.16	4.55	
Group	32	27.94	8.07	28.88	7.64	27.63	7.57	
<i>Satisfaction</i>								
Waitlist	31	33.42	8.65	32.55	8.68	32.35	8.66	
Individual	25	31.88	10.91	34.52	7.90	34.88	8.03	
Group	32	35.13	7.34	36.56	7.53	36.09	6.50	
<i>Knowledge</i>								
Waitlist	31	16.35	4.74	15.45	5.13	15.49	5.14	
Individual	25	16.28	5.95	22.96	4.66	22.76	4.12	
Group	32	18.15	7.19	24.18	4.30	24.21	4.27	

Parenting Knowledge (PKQ) A 3 x 3 repeated measures Anova on the PKQ scores indicated a significant interaction effect between groups over time; $\Lambda = .69$, $F(4, 170) = 8.58$, $p = .00$, $\eta^2 = .17$. There was also a significant main effect for time; $\Lambda = .64$, $F(2, 85) = 23.96$, $p = .00$, $\eta^2 = .36$, and treatment format; $F(2, 86) = 17.96$, $p = .00$, $\eta^2 = .30$. Mean parent knowledge scores are presented in table 5.

Within-Group Comparisons.

Mean PKQ scores improved across time for both treatment groups while the control group experienced very little change. Within-group simple effects revealed change over time was significant for the individual format, Wilks' $\Lambda = .69$, $F(2, 85) = 19.53$, $p = .00$, $\eta^2 = .32$, the group format, Wilks' $\Lambda = .66$, $F(2, 85) = 21.52$, $p = .00$, $\eta^2 = .34$, however, not the waitlist control, Wilks' $\Lambda = .99$, $F(2, 85) = .47$, $p > .05$, $\eta^2 = .01$. The difference between pre and post-test means and between pre-test and follow-up means for both individual and group formats were significant ($p = .00$ for all). The significant improvement obtained for both treatment groups was maintained from post-test to follow-up.

Between-Group Comparisons.

Analysis of simple effects revealed no significant difference between the three groups at pre-test, $F(2, 86) = .94, p > .05, \eta^2 = .02$. However, the three groups differed significantly at both post-test, $F(2, 86) = 31.23, p = .00, \eta^2 = .42$, and follow-up, $F(2, 86) = 33.25, p = .00, \eta^2 = .44$. Both the individual and group format had higher mean parenting knowledge than the control group at post-test and follow-up. This difference was significant at the .001 level at both post-test, $F(2, 86) = 31.23, p = .00, \eta^2 = .42$, and follow-up, $F(2, 86) = 33.25, p = .00, \eta^2 = .44$.

Within-Group Comparisons.

Parent Report of Child Behaviour. Univariate analyses revealed that within the *individual* format there was significant improvement across time on the Intensity scores, $F(2, 170) = 21.59, p = .00, \eta^2 = .20$, and Problem scores, $F(2, 170) = 36.57, p = .00, \eta^2 = .30$. The difference between pre and post-test means and between pre-test and follow-up means were significant on both measures ($p = .00$), indicating significant improvement was maintained from post-test to follow-up.

Univariate analyses revealed the *group* format experienced significant improvement across time on the ECBI Intensity, $F(2, 170) = 21.59, p = .00, \eta^2 = .20$, and Problem scales, $F(2, 170) = 36.57, p = .00, \eta^2 = .30$. Significant differences were found between baseline and post-test, and baseline and follow-up ($p = .00$) for the Intensity and Problem scores, indicating significant improvements were maintained. Effect sizes ranged from .41 to 1.04.

Table 6.

Mean Scores at Pre-Test, Post-Test and Follow-up for Intensity and Problem Scores (N = 88)

Subscales	N	Pre-test		Post-test		Effect size	Follow-up		Effect size
		M	SD	M	SD		M	SD	
<i>Intensity Scores</i>									
Waitlist	31	105.90	40.24	107.94	39.52	-.05	109.32	37.73	-.09
Individual	25	119.64	35.91	100.28	30.24	.59	99.00	29.33	.66
Group	32	115.22	33.92	103.06	32.96	.41	96.94	28.24	.62
<i>Problem Scores</i>									
Waitlist	31	10.94	9.16	11.65	8.70	-.08	12.06	8.29	-.12
Individual	25	14.52	7.19	9.00	5.67	.85	7.28	6.33	1.04
Group	32	14.66	9.09	8.44	7.34	.76	7.41	5.84	.92

Between-Group Comparisons.

A simple effects multivariate test revealed no significant difference between the three groups at baseline, Wilks' $\Lambda = .91$, $F(6, 166) = 1.28$, $p > .05$, $\eta^2 = .04$, post-test, Wilks' $\Lambda = .92$, $F(6, 166) = 1.20$, $p > .05$, $\eta^2 = .04$, or follow-up, Wilks' $\Lambda = .88$, $F(6, 166) = 1.83$, $p > .05$, $\eta^2 = .06$.

Qualitative Analysis

A total of 75 participants completed qualitative responses; 39 participants completed the group format and 36 completed the individual format. All respondents commented positively about the program and several stated they had no criticism of the program.

Participants were asked 1) *What did you like most about the program?* and, 2) *What was your main criticism of the program?* The majority (53%, $n = 40$) stated what they liked most were the skills and strategies taught by the program. Many of these parents indicated they felt better equipped to deal with their children after learning the skills taught in the program.

Twenty participants (27%) referred to the video scenarios in response to what they liked most about the program. Some of these parents indicated the interactive video's helped to maintain their attention and some indicated the videos helped them to more clearly understand the situation or the skills being taught.

A small number of parents ($n = 5$) indicated what they liked most was the simplicity of the program, that it was clear and easy to understand. The main criticisms of the program were condensed into three main themes, namely: the structure and content of the program, and the integration of the strategies learned.

The Structure of the Parenting Wisely Program.

The main criticism was the program was not identifiably Australian (i.e., American actors and American colloquialisms) ($n = 13$, 17%). Five participants (7%) criticized the program as being "too structured." Alternatively, others found the program structure to be "unclear," "confusing" and "somewhat stilted." Four parents (5%) indicated the choice of

solutions offered were poorly described in written form and did not accurately represent the video solution.

Thirteen participants (17%) expressed concerns about how realistic the program was. Some parents indicated the solution scenarios were “too perfect” and “too simplistic.” One parent said “it seemed slightly unreal when the situations were solved so quickly.” Four parents (5%) indicated they would have liked a broader range of problem scenarios such as children with poor behaviour related to eating. Three participants indicated they had difficulty integrating the skills they learned stating for example, “(I) tried some of the things at home but they did not work for me.”

Individual and Group Format Differences

Individual Format

A total of nineteen participants (25%) stated they had no criticism of the program. Seventeen (23%) of these participants completed the program by individual format. ‘No criticism’ was by far the most common response given by individual-format participants to the question regarding their greatest criticism of the program.

Group Format

In response to what they liked most about the program, the most common response of group format participants (31%, $n = 13$) was the discussion and interaction with other parents. This issue was not raised by participants who completed the program via individual format. Many group participants found completing the program with others very enjoyable. One participant stated what she liked most was “talking to other parents (and) hearing how they handle situations.”

However, discussion was also a criticism for the group format. Eight participants in the group sessions (21%) indicated there was not enough discussion time (all of the group sessions were completed in two sessions, one week apart and consisted of 2½ to 3 hour time blocks.)

In summary, participants had more positive comments about the program than criticisms, with a large proportion of individual-format participants indicating they had no criticism of the program at all. Interestingly, several issues raised as positives for some parents were also raised by others as criticisms. For example, the vignettes were liked by several participants yet disliked by others, as was the simplicity of the program. Similarly, some parents found the program adequately instructed how to put the skills and strategies into action, while others argued the inability to do this was a main criticism of the program.

DISCUSSION

The hypothesis that completing PW would result in an increase in parenting knowledge was supported. Significant improvements in parenting knowledge scores were found for both the individual and group format compared to waitlist control. Both the Individual and group formats were similarly effective in increasing parenting knowledge. Parents who completed the program via the group format demonstrated a 32% improvement in parenting knowledge and those who completed the program via the individual format improved by 40%. These improvements were maintained at three months post intervention. These findings support previous research on PW showing similar gains in parenting knowledge (Kacir & Gordon, 1999; Lagges & Gordon, 1999; O'Neill & Woodward, 2002; Parish, 2001).

The hypothesis that use of PW would improve parental competence was supported. Completion of the program resulted in significant improvements in both parental satisfaction and efficacy. Parent's sense of competence was enhanced to similar levels irrespective of the format of program delivery. These findings are consistent with previous research reporting enhanced parental competence in parents who have completed behavioural parent training (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993; Bor, Sanders, & Markie-Dadds, 2002; Pisterman et al., 1992; Sanders, Gooley, & Nicholson, 2000; Sofronoff & Farbotko, 2002; Tiedemann, & Johnston, 1992), and more recently, specifically using the PW program (Hein, et al., 2002). However, the aforementioned studies did not conduct follow-up analyses to examine whether gains in parental sense of competence were maintained over time. The current study examined parenting sense of competence levels three months after completing the parenting

program. This outcome is pertinent since research (Coleman & Karraker, 1997) has demonstrated parental sense of competence can impact substantially on a parent's ability to implement parenting strategies.

The current study found gains in parenting sense of competence were maintained after three months for parents who completed the individual format of the program. Gains in parenting sense of competence were not maintained for the group-format participants at three-month follow-up. It is unclear why this occurred, however, what is clear is this outcome was not a result of difference in initial levels or gains in parenting knowledge, child problem behaviour, or participant demographics, as these factors did not vary according to groups. One possible explanation may be parents in group-format had the support of other group members, and this may have contributed to perceived parental competence. The fact that social support ended at conclusion of the program, may have contributed to the effects not being maintained at three-month follow-up. Participants in the group format may require extra support after its conclusion to circumvent this effect.

Completion of PW is effective in enhancing parenting knowledge, increasing use of effective parenting skills, and improving parents' perception of their child's behaviour irrespective of existing levels of self efficacy. Perhaps the apparent simplicity of the program described in the above qualitative analysis helped parents with low self-efficacy to not become demoralized and increased their willingness learn and use new skills.

The hypothesis that completing PW would reduce child problem behaviour was supported. Participants reported a significant decrease in child problem behaviour

(moderate to large effect sizes) in both treatment formats and these findings were maintained at follow-up. These findings are comparable to previous research reporting significant decreases in child problem behaviour achieved by self-directed behavioural parenting programs (Sanders' 1999; Webster-Stratton et al., 1988). The current findings confirms previous research on PW reporting significant reductions in child problem behavior (Carr & Friedman, 2002; Gordon & Kacir, 1997; Kacir & Gordon, 1999; O'Neill & Woodward, 2002; Segal et al, 2003; Pushak & Pretty, 2004) The abovementioned study using PW via group format (Pushak & Pretty, 2004) was administered over 10 to 12 sessions. It is noteworthy that the current study achieved significant improvements on child behaviour with only two sessions for both formats of program delivery.

The hypothesis that group format participants would be more satisfied than individual format participants was not supported. Participants who completed the individual format were significantly more satisfied (93%) than the group format participants (85%). Almost all of the participants who reported no criticism of the program completed the individual format. Although these differences are statistically significant, it is noteworthy that both groups of participants were very satisfied. The overall satisfaction rate of 89% in this study is similar to previous research on PW (Hein, Martin, & Else, 2002; Paull et al., 2001). Restrictions on discussion time in the current study may have contributed to a lower satisfaction rating for the group format. Almost a third of these parents were critical of the limited group discussion time. These findings contrast previous research which found higher satisfaction with a group discussion format of program delivery

compared to individual delivery (Webster-Stratton et al., 1988). In the aforementioned study the absence of personal contact and feedback was reported to be a limitation of the individual format. Individual use of PW may have an advantage over a self-administered linear video program because the CD-Rom program is interactive and parents receive feedback on their choices. Thus computer-generated feedback may compensate the absence of therapist involvement and feedback, and may increase the sense of ownership and empowerment for improved outcomes. This may also be an advantage of self-instructional programs over programs run by professionals.

The hypothesis that PW would yield a lower attrition rate compared to other parent training programs, was supported. The number of participants who commenced the program and failed to complete it was small. Only four people, representing a 5% drop out rate, failed to complete the program. Of course, it must be acknowledged, participating in any program requiring attendance to only two sessions will likely result in less attrition than a program requiring a greater time commitment. This mode of program delivery and the small number of sessions required, did not appear to compromise outcomes as treatment gains were similar to those achieved by other lengthy programs. While some studies on behavioural parent training have reported an average drop out rate as high as 28% (Forehand et al., 1983), the 5% drop out rate found in the current study is comparable to that found in a video-taped parenting program (8.2%) (Webster-Stratton et al., 1988).

Methodological Considerations

Despite random allocation, there was a significant difference between scores on the child behaviour measures at pre-test. These differences may have occurred because a small number of participants originally allocated to the treatment groups could not commence the program immediately, due to circumstances occurring in their lives at the time. Those that could not commence for more than three months were again asked to complete outcome measures which included them as part of the waitlist control group. These families and the other families in the waitlist control condition were contacted at three month follow-up and provided an opportunity to be randomly assigned to either the individual or group format of the program. Data from these families were included in both treatment and control conditions.

No analysis was completed on demographic characteristics or pre and post-test scores for the 21 families who failed to complete the 3 month follow-up measures compared to the rest of the sample. These families may not have maintained treatment gains which may have lowered effect size calculations for the entire sample.

Conclusions

This evaluation revealed the PW parenting program was effective in increasing parental satisfaction, efficacy and knowledge and reducing child problem behaviour in an Australian sample. These improvements were maintained up to three months after

completing the program. The results of this study indicate completing the program via individual format enhanced treatment gains compared to the group format. Participants also found the program enjoyable and satisfying, and most stated they would recommend it to others. There is a need for empirically validated programs that increase parental attendance, reduce drop-out rates, and enhance cost-effectiveness. PW is an effective program that shows great promise in meeting these needs.

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