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Can Caregiver Depression Bring a Good Parenting Intervention Down?
The Case of Parent-Child Interaction Therapy

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Citation:

Scholes, M., Zimmer-Gembeck, M. J., & Thomas, R. (2009). Can depression keep a good parenting program down? The case of Parent-Child Interaction Therapy. In H. D. Friedman & P. K. Revera (Eds.), *Recent Advances in Abnormal Psychology (chapter 4)*, New York: NOVA Science Publishers, Inc.

Abstract

Depressed caregivers who present for parenting assistance often display excess difficulties with maintaining positive parent-child interactions and report that they cannot manage their children's problem behaviours. In addition to this, they often report other life stressors such as marital distress, lack of social support and/or socioeconomic disadvantage. This confluence of problems means that engaging depressed caregivers in parenting services can be challenging and depression is believed to impede successful intervention outcomes. For example, research has shown that depressed participants are at increased risk of intervention dropout and that they more often fail to maintain positive parenting behaviours (Assemany & McIntosh, 2002; Forehand, Furey & McMahon, 1984). However, others have suggested that engagement in parenting interventions in order to improve parent-child relationships may provide additional benefits such as reducing caregiver stress and depressive symptoms (Sameroff, 2004). In this randomised controlled trial of Parent-Child Interaction Therapy (PCIT), we assessed depression using three methods -- an interview, a self-report questionnaire and observation. We anticipated that nonattendance and attrition would be higher in depressed compared to nondepressed caregivers. In addition, those who attended 12 weeks of treatment ($n = 68$) were compared to those on a supported waitlist ($n = 27$); we expected that caregivers receiving PCIT would have greater declines in depressive symptoms than those on the waitlist. Participants were female caregivers (age $M = 34$, $SD = 8.9$) and their young children (ages 3 to 7). Caregivers were at risk of child maltreatment based on a child maltreatment inventory and reported that their children had clinical levels of externalising symptoms. Survival analysis showed that attrition was similar to previous studies of PCIT and there was no significant difference in attrition rate

when depressed and nondepressed caregivers were compared. Measures of attendance such as the number of missed appointments also did not differ between groups. Regarding parenting outcomes, treatment participants showed greater improvements in observed interactions with their children than those on waitlist. Yet, the anticipated difference between depressed and nondepressed caregivers was not found; groups did not differ when we compared observed interactions with children prior to treatment and during treatment, with the exceptions of reflections/descriptions and negative talk. When depression was compared, it declined similarly and rapidly for caregivers regardless of whether they were receiving PCIT or were on the waitlist. Caregiver depression does not correlate with attendance and length of PCIT or observed parent-child interactions when participants are female caregivers with high risk of maltreatment and children with behaviour problems. In summary, study findings suggest that PCIT is an effective intervention for improving the observed parenting skills of both depressed and nondepressed caregivers with young children, but PCIT is not directly implicated in reducing caregivers' depressive symptoms.

Introduction

Comprehensive literature reviews have documented that depressed mothers have difficulties maintaining positive parenting behaviours and have children with more mental health and behavioural problems (Downey & Coyne, 1990; Goodwin & Gotlib, 2002; Lovejoy, O'Hare, & Neuman, 2000). For example, compared to nondepressed caregivers, depressed caregivers have been found to be more negative when interacting with their children (Lovejoy et al.), and to have children who are more likely to develop internalising and externalising problems (Goodwin & Gotlib).

Caregivers with depression are likely to present to parenting interventions needing assistance with multiple problems, including child behavioural problems, marital distress, and/or other life stressors. Multiproblem families can create challenges for service providers who are attempting to work with caregivers to educate them in parenting skills and remediate parent-child relationships. The issue of how best to address each concern becomes important. It could be argued that the focus on one area may inadvertently impact positively on other areas. For example, it is possible that focusing on the parent-child relationship may promote functional improvements in both the child and the caregiver (Sameroff, 2004). This possibility has been of particular interest among those who provide interventions to improve parenting skills and child behaviour (see Webster-Stratton & Taylor, 2001).

The very general aims of most parenting interventions are to help parents have more positive relationships with their children, and to assist parents with skills to more competently and appropriately manage any child behaviour problems (Serketich & Dumas, 1996). Ultimately, better parenting and reduced child behavioural problems are expected to

improve family and child life trajectories. Many reviews describe the various types of parenting interventions that have evidence of short-term effectiveness (see Webster-Stratton & Taylor, 2001; Thomas & Zimmer-Gembeck, 2007). However, parenting interventions do not help every family. Some families will dropout, fail to engage fully in the treatment, or fail to maintain positive changes beyond the time in treatment (Assemany & McIntosh, 2002). Due to these negative treatment outcomes, attempts have been made to identify the parent, child and family characteristics that increase or decrease the likelihood of success in parenting interventions. Maternal depression, socioeconomic disadvantage, and severity of the child's conduct problems are some characteristics that have been identified as potential moderators of treatment outcomes, which result in less positive outcomes for individuals and families (Assemany & McIntosh).

The focus in the study reported here was on maternal depression as a potential moderator of treatment outcome. There have been reports that maternal depression is predictive of treatment outcome, such as lower retention rates, and maternal depression has been found to be associated with reduced responsiveness to treatment in parenting interventions, such as less improvement in parent-child relationships when compared to nondepressed participants (e.g., Griest, Forehand, & Wells, 1981). However, in other studies such associations between depression and treatment outcomes have not been found (e.g., Kazdin, Mazurick, & Siegel, 1994). Consequently, it remains unclear whether maternal depression partially accounts for less positive caregiver and child outcomes in a parenting intervention.

Our first specific study aim was to compare patterns of intervention dropout and attendance between depressed and nondepressed caregivers. In addition, a randomised

controlled study design was used to meet a second aim of comparing treatment participants to those in a supported waitlist comparison group. In each of the treatment and waitlist groups, nondepressed and depressed caregivers were identified and compared. In addition to assessing intervention attendance, parent-child interactions were observed and compared between groups to determine whether depression status was associated with differential responsiveness to the parenting intervention.

A third study aim was to examine whether completion of 12 weeks of a parenting intervention was associated with declines in caregivers' depressive symptoms. Improvements in depressive symptoms have been expected to be a correlate or outcome of participating in a parenting intervention, because of the provision of general support to caregivers, as well as the impact on maternal well-being that comes with improvements in parent-child relationships and associated reductions in family stress. Yet, there is limited evidence for such a side effect, and those researchers that have examined this question have found contradictory evidence; in some previous research it has been reported that maternal depressive symptoms improve as a by-product of participation in a parenting intervention (e.g., Hutchings, Appleton, Smith, Lane, & Nash, 2002), whereas in other studies this association has not been found (e.g., Irvine, Biglan, Smolkowski, Metzler, & Ary, 1999).

Measurement of Depression and Observations of Depressed Caregivers

To identify parents with depression, we used clinical interview, self-report, and observational methods. This system of measurement was more comprehensive than the techniques relied upon in most previous research in this area. Even though depression is recognised and accepted as a health priority area affecting large numbers of people for significant periods of time (Lovejoy et al., 2000; Nolen-Hoeksema, 2001), like many

psychological constructs, the definition and measurement of depression continues to be debated (Tennen, Hall, & Affleck, 1995). The Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition (DSM-IV, American Psychiatric Association, APA, 2001) has enabled researchers and clinicians to use a global definition of clinical depression based on specific criteria. Nevertheless, a variety of definitions of depression continue to appear in the research literature. This meant that it was best to use multiple methods and measures to better identify caregivers who met criteria for depression on different types of indicators.

In addition to using typical methods of assessing depression (i.e., a clinical interview and a depressive symptom inventory), an observational measure of depressive symptoms was developed for use in the current study. There has been limited use of observational methods for measuring depression. When observations have been used, it appears that the information gathered is somewhat divergent from self-report questionnaires and clinical interviews, and may have some advantages and disadvantages (Querido, Eyberg, & Boggs, 2001). The main advantage comes from the ability to include nonverbal behaviours (e.g., facial expressions, verbal quality, posture) as they relate to depressive symptomatology. Conversely, limitations include the inability to assess for exclusionary criteria, the lack of information about the stability of the presentation, and there are other characteristics of depression undetectable through observation.

No studies were located that have used observational methods as part of a set of measure that could be used to identify caregivers as depressed or nondepressed, but it seemed that observations should be used as a supplement to clinical interviews and self-report measures. For example, observed behaviours of parents have been found to differ when depressed and nondepressed caregivers are compared (Hops et al., 1987; Querido et

al., 2001). In these studies, findings indicated that depressed caregivers show more negative affect (e.g., sad, anxious, dysphoric, self-focussed, despondency) rather than aggressive or irritable behaviour compared to nondepressed caregivers (Hops et al.; Radke-Yarrow, Nottelmann, Belmont, & Welsh, 1993). In contrast, in a separate study (Querido et al.), maternal depressive symptomatology (measured by the Beck Depression Inventory [BDI]; Beck, Steer & Brown, 1996) was assessed among 97 families with young children with oppositional defiant disorder. In this study, mothers who reported relatively more depressive symptomatology on the BDI had significantly more observed maternal physical negative behaviours (e.g., pushing, restraining, and hitting) as measured by the Dyadic Parent-Child Interaction Coding System – Second Edition (DPICS-II). However, no association was found between mothers’ depressive symptomatology and maternal critical statements. Caregivers were all attending an intervention that provided assistance with parenting a young child (age 3-7) with behavioural problems. It was expected, therefore, that negative parenting behaviours may be prominent in participants, and would be more common and more resistant to change among depressed caregivers compared to nondepressed caregivers.

Parent-Child Interaction Therapy

The parenting intervention provided was Parent-Child Interaction Therapy (PCIT). PCIT is designed to improve the parent-child relationship and decrease behaviour problems via play and parental coaching. PCIT was specifically designed for children with significant behavioural problems and their caregivers (Eyberg, Boggs, & Algina, 1995; Thomas & Zimmer-Gembeck, 2007). In PCIT, the parent and child play together with a set of toys, while a therapist observes and coaches the parent from behind a one-way mirror with a

microphone and earpiece device. PCIT has theoretical foundations in attachment theory and social learning theory (Foote, Eyberg, & Schuhmann, 1998). An aim in PCIT is to establish a nurturing relationship between the parent and child, while also learning to use appropriate disciplinary measures (i.e., selective attending and ignoring). Overall, the goal is to assist parents to create and attend to positive experiences with their children. Once the relationship between the parent and child has improved, additional disciplinary strategies (e.g., time out, removal of privileges) are coached. PCIT has been recognised as an empirically supported treatment for child behavioural problems (Chambless & Ollendick, 2000; Thomas & Zimmer-Gembeck, 2007; Webster-Stratton & Taylor, 2001).

PCIT has two phases – Relationship Enhancement (sometimes referred to as child-directed interaction or CDI) and Additional Skills (sometimes referred to as parent-direction interaction or PDI). The Relationship Enhancement phase is first and includes a didactic presentation on the PRIDE skills. These skills including teaching parents the importance of Praising, Reflecting, Imitating, Describing, and using Enthusiasm when interacting with their young children. Parents also are taught AVOID skills, which include limiting instructions, questions, and negative talk. This teaching session is followed by a series of coaching sessions targeted at meeting mastery criteria in these skills. Once these criteria are met over a course of sessions, caregivers enter the Additional Skills phase of PCIT. In this second phase, caregivers participate in a didactic session on effective instructions and consequences that can be used to manage significant child misbehaviours (i.e., removal of privileges and a time-out chair), followed by a series of coaching sessions designed to help caregivers gain competence and confidence in these skill. For more information about PCIT, see Hembree-Kigin and McNeil (1995).

We compared the outcomes of depressed caregivers with those of nondepressed caregivers. We also compared depressed and nondepressed caregivers who had been randomly assigned to PCIT treatment or a supported waitlist condition. A number of hypotheses were tested. First, depressed caregivers were expected to have higher rates of dropout than nondepressed caregivers. Depressed caregivers who completed 12 weeks of PCIT also were expected to 1) receive more personal support sessions (individual sessions that departed from the PCIT protocol), 2) to have a greater history of nonattendance and/or cancellations (DNA/CC) of scheduled appointments when compared to nondepressed caregivers, and 3) to have required more intensive treatment prior to completion of PCIT, including more sessions in the Relationship Enhancement Phase of PCIT (referred to as the Child Directed Phase in some previous research, Eyberg & Robinson, 1983) compared to nondepressed caregivers.

Second, depressed caregivers, compared to nondepressed caregivers, were expected to have a lower percentage of positive behaviours (praises and reflections/descriptions) and a higher percentage of negative behaviours (questioning, giving instructions, and negative talk) when interacting with their children prior to participation in PCIT. Further, the percentage of praises and reflections / descriptions of depressed caregivers in treatment were expected to increase less than nondepressed caregivers in treatment from the pre- to the 12-week assessment, whereas the percentage of negative behaviours (questions, instructions, and negative talk) of depressed caregivers in treatment were expected to decrease less than nondepressed caregivers in treatment. We expected no changes in observed interactions between depressed or nondepressed caregivers and their children among those on the supported waitlist. Finally, we also investigated whether maternal

depressive symptoms improved during involvement in treatment. We hypothesised that observed depressive symptoms would show greater improvements in the treatment group than in the supported waitlist.

Method

Participants

Participants were 95 female caregiver-child dyads who attended a university clinic for parenting assistance with a child between the ages of 3 and 7. Dyads were randomly allocated using a ratio of 2 to 1. Families were randomised to immediate PCIT or a supported waitlist. In total, there were 68 dyads who received PCIT and 27 who were allocated to a 12-week supported waitlist. Overall, 43% of families were referred from Departments of Child Safety after a notification for maltreatment, whereas 17% were from government health agencies, 13% were self-referrals (often encouraged by Child Safety or similar agencies), and 27% were from other sources (e.g., paediatricians, schools). The mean age of female caregivers was 34 ($SD = 8.9$, range 20 to 58), and 87% were biological mothers. Other caregivers were stepmothers, grandmothers or foster carers. In regards to relationship status, 28% were married, 24% were in de facto relationships, 13% were separated/divorced, and 32% were single. The majority of caregivers were of low socioeconomic status, and most were Caucasian (96.8%) with other participants of Aboriginal or Torres Strait Islander descent. Children were aged 3 to 7 (age $M = 60$ months, $SD = 20$ months, range 27-98 months) with just a few children slightly younger than 3 and 1 child slightly older than 7 at pre-treatment. As expected given the focus on children's behavioural problems, 70% of children were male.

Measures

Treatment dropout and session attendance. Negative treatment outcome measures included dropout, counts of sessions provided, and the number of sessions not attended or cancelled. First, *dropout* was defined as any family who completed the pre-treatment phase but did not complete a 12-week assessment. Second, the total number of PCIT sessions and total number of Relationship Enhancement phase sessions (the first phase of PCIT) were documented. The number of additional individual sessions also was recorded. These sessions were provided when caregivers had significant concerns other than child behavioural problems that were regarded as too important to neglect. Last, the number of sessions not attended and/or cancelled by the client (DNA/CC) was recorded.

Maternal depressive symptomatology. The BDI-II, a clinical interview, and the Measure of Observed Depressive Symptoms (MOODS) were used to measure caregivers' depressive symptomatology. The MOODS is an observational coding system developed for use in the current study. After extensive examinations and comparisons of these measures (see Scholes, 2005), caregivers were classified as depressed and nondepressed based on the BDI-II and clinical interview. Caregivers who were diagnosed as depressed on the clinical interview *or* scored 20 and above on the BDI-II were classified as depressed. Caregivers who were not diagnosed as depressed on the clinical interview *and* scored below 20 on the BDI-II were classified as nondepressed. Because the MOODS assessment was not used to identify depressed caregivers, it was used as an outcome measure when depressed and nondepressed caregivers were compared.

The BDI-II is a 21-item self-report measure of depressive symptoms. It was developed for the assessment of symptoms corresponding to criteria for diagnosing

depressive disorders listed in the DSM-IV (APA, 2001). The BDI-II has a score range from 0 to 63, with high scores indicating more depressive symptomatology. For example, a score of 10 on the BDI-II would be classified in the minimally depressed range. Whereas, a score of 20 would be classified as moderately depressed (Beck, et al., 1996). The BDI-II was measured three times; prior to assignment to PCIT or waitlist conditions, after 6 weeks of participation, and after 12 weeks of participation. The interitem correlation was adequate at all three assessments; Cronbach's α ranged from .61 to .87.

A semi-structured clinical interview also was conducted prior to treatment to assess current depression, among other factors. The length of the interview was usually 20 minutes and included questions about symptoms based on the DSM-IV criteria for depressed affect (e.g., worthlessness, loss of energy, concentration problems, sleeping irregularities, weight change). Symptoms were characteristic of a major depressive disorder, and participants responded to questions about chronicity of symptoms, past/present medication and other diagnosed disorders (e.g., bipolar disorder).

Finally, the MOODS measure was used to measure observed depressive symptoms. The MOODS was developed after reviewing the DSM-IV criteria and descriptions of depressed affect found in the literature (e.g., mental status examination). Caregivers were videotaped in the clinic therapy room for 10-minutes (a portion of the DPICS III measure) while playing with the accompanying child at pre- and 12-week assessment periods. Using a set of toys selected by the child, each caregiver was instructed to play with her child, while also allowing the child to direct the play and following the child's lead. To allow caregivers to relax and become more natural in their play prior to coding, observational

coding was completed while observing the second 5 minutes of this videotaped interaction. Scores were assigned after observing caregivers' emotional expression, speech quality, and body posture. Each rating was made on a scale from 1 to 5. Response options included 1 (*no signs of depression*), 2 (*minimal signs*), 3 (*moderate signs*), 4 (*moderate-significant signs*), and 5 (*significant signs of depression*).

The coding system was initially developed, tested and revised by viewing and assessing five videos, along with comparing the observation and rating of the five videos with the clinical interview and BDI-II scores. This investigation was aimed at assessing the accuracy of the behavioural characteristics as indicators of depressive symptoms and allowed for necessary adjustments. Once the coding system was revised and appeared accurate in comparison to the clinical interview and self-report of depression, the coding system was shown to three registered clinical psychologists to assess the face validity of the observational characteristics of depressed affect. After discussions, small modifications were made.

One female and one male undergraduate psychology student were trained and coded videotapes. The initial training involved 5 hours of teaching the coders about the system, and practicing with videos of caregivers. Interrater reliability checks were completed before assigning videos for independent coding. An interrater reliability (i.e., the intra-class correlation) of .90 was found between the two coders and the first author. Coders did not watch more than one video of a caregiver (i.e., if they watched a pre-assessment video, they would not watch a 12-week assessment video). After they completed half the list of videos, another five randomly selected videos were used to reassess interrater reliability.

Observed parent-child interactions. The Dyadic Parent Interaction Coding System – Third Edition (DPICS III) was used to assess a number of features of parent-child social interactions. DPICS III allows therapists to assess observed behaviours of caregivers when interacting with their children in the clinic setting (Eyberg, Duke, McDiarmind & Boggs, 2004). Generally, coding of observed interactions is in the form of counts of the frequency of skills that a caregiver uses with her child. The principle scales in DPICS III include praise, descriptions (information and behavioural), reflections (referred to as positive maternal behaviours) and instructions (direct and indirect) negative talk and questions (referred to as negative maternal behaviours).

Independent coders completed DPICS III coding while watching the videotapes of 5-minutes of parent-child interactions in the clinic. Assistants were blind to group membership, other measures, and had no previous contact with families. Five undergraduate psychology students were trained in the DPICS III and viewed all videotapes. After extensive training, high interrater reliability (i.e., the intraclass correlation) was found for praises, descriptions / reflections, negative talk, questions, and instructions, .99, .89, .78, .94, .94, respectively.

Procedure

Prior to randomisation, families attended a psychology clinic for two sessions. First, the primary therapist assigned to the family conducted an interview with the caregiver. This interview included gathering a complete history of depressive symptoms. In a second assessment session at the clinic, a 25-minute play interaction between the caregiver and child was videotaped.

Parent-Child Interaction Therapy condition. Eight therapists with more than one year of training and practice in PCIT provided the intervention. All were registered psychologists who also were postgraduate students under supervision. PCIT was provided at a university psychology clinic and sessions were held weekly. The intervention was not time-limited, so that families involved had a range of 1 to 47 sessions prior to attrition or completing treatment. For most sessions, the caregiver and child were situated in one room with up to three sets of play toys, while the therapist was in an observation room coaching the caregiver during her play with the child. Coaching occurred through an earpiece and microphone device.

Supported waitlist condition. Families allocated to the 12-week supported waitlist received weekly telephone contact from a PCIT therapist, in order to provide supportive counselling with personal issues and parenting-related stressors. To attempt some control over the services available to waitlist families and to reduce the likelihood of access to parenting interventions during this 12-weeks, family therapy and child behavioural management assistance were not recommended to the waitlist families. However, if they had individual concerns that seemed to require immediate assistance, the waitlist families were referred to community services for individual therapy or other support services.

Results

Distributions of Measures and Examination of Analytic Assumptions

All continuous measures were assessed to determine if scores were normally distributed. Some distributions (the number of DNA/CC, the number of additional sessions, depression self-report scores, and three of the measures of observed parent-child interactions) were positively or negatively skewed and a few outliers were identified.

Outliers were continually assessed throughout the following analyses, but removal of the participants with extreme scores did not significantly impact any of the results.

The assumption of equality of variance was assessed throughout the analyses using Box's M test. The test was never found to be significant, therefore the variability of measures and the covariance did not differ considerably when the treatment and waitlist groups were compared, $p > .001$. Maunchley's test of sphericity examined whether the correlation between treatment and waitlist was the same when more than two levels were used (i.e., BDI-II scores for pre-treatment, 6-week, 12-week). This assumption was violated and consequently, the Huynh-Feldt correction was used. Additionally, the Levene's test of homogeneity of variance revealed no significant problems with measures of depression.

Descriptive Information

As some data were only collected from participants in treatment (session attendance) and observation data were missing for eight participants due to poor video or sound quality, sample sizes ranged from 52 to 87. Means and standard deviations for all dependent variables are summarised in Table 1.

Treatment Attendance of Depressed and Nondepressed Caregivers

Dropout. It was predicted that the dropout rate for depressed caregivers in PCIT treatment would be higher than for nondepressed caregivers. This was not found. There was no significant difference in the dropout rate between depressed and nondepressed caregivers in PCIT, $\chi^2 = .16$, $p = .69$. About 32% of nondepressed caregivers did not complete the 12-week assessment, whereas about 36% of depressed caregivers did not

complete this assessment. This finding was similar when only nondepressed and depressed participants in the treatment condition were compared.

Table 1

Means and Standard Deviations for All Continuous Dependent Variables

Dependent variable	<i>N</i>	<i>M</i>	<i>SD</i>
Observed depressive symptoms, pre	87	2.9	1.3
Observed depressive symptoms, 12-weeks	57	2.6	1.4
Number of total sessions	38	18.1	8.0
Number of additional sessions	38	0.9	1.2
Number of did not attend/cancellations	38	4.6	4.2
Number of relationship enhance sessions	38	10.1	4.4
Observed praises, pre, %	87	4.0	5.5
Observed praises, 12-weeks, %	57	11.1	11.0
Observed reflections/descriptions, pre, %	87	49.2	13.5
Observed reflections/descriptions, 12-weeks, %	57	58.0	15.5
Observed questions, pre, %	87	31.9	13.4
Observed questions, 12-weeks, %	57	21.7	17.2
Observed instructions, pre, %	87	12.5	10.1
Observed instructions, 12-weeks, %	57	7.8	6.8
Observed negative talk, pre, %	87	1.2	3.5
Observed negative talk, 12-weeks, %	57	1.4	3.3

Survival analysis was conducted to further describe dropout patterns of depressed and nondepressed caregivers, and to compare the groups. Results are illustrated in Figure 1. The vertical axis shows 100% survival (i.e., 0% attrition) on the left which declines as the number of scheduled sessions increased and families dropped out of the intervention (see Riegelman & Hirsch, 1996). Taking into account the timing of dropout, depressed caregivers tended to dropout slightly, but not significantly, earlier than nondepressed

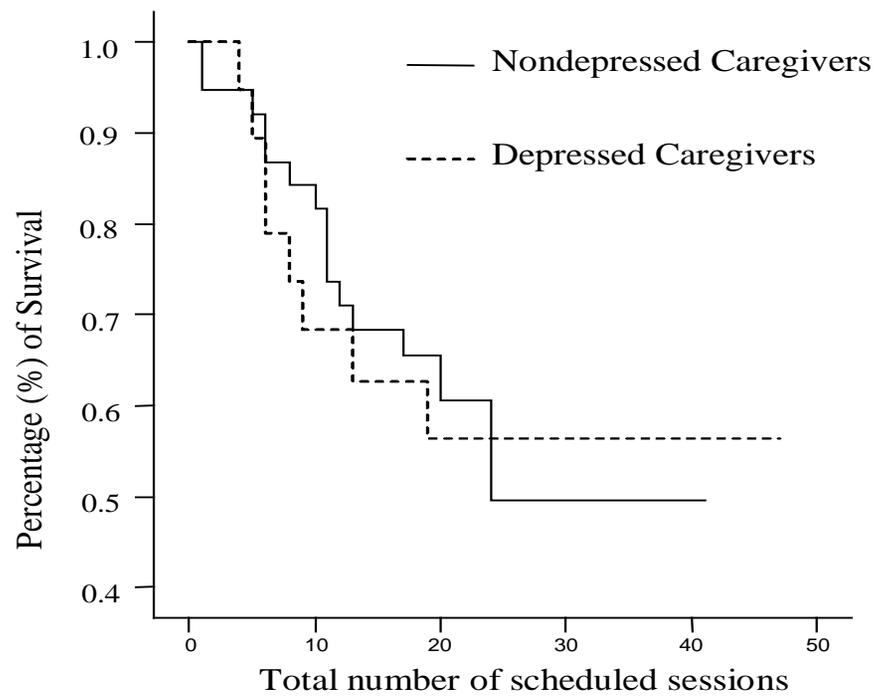


Figure 1. Survival of depressed and nondepressed caregivers during treatment.

Note. Depressed $N = 19$, Nondepressed $N = 38$.

Caregivers. However, depressed caregivers also had a slightly higher, but not significantly higher, final survival rate (around 56%) than nondepressed caregivers (50%), Wilcoxon $\chi^2 = .21, p = .64$.

Session attendance. It was expected that depressed compared to nondepressed caregivers assigned to PCIT treatment would have a greater number of additional sessions, DNA/CC, a greater number of relationship enhancement phase sessions, and a greater number of total sessions. To compare the two groups, three analyses of covariance (ANCOVA) models were estimated with depression status (depressed/nondepressed) as the independent variable. The number of total sessions was included as a covariate to adjust for differential time in treatment. Providing no support for our hypotheses, depressed caregivers did not differ from nondepressed caregivers in the numbers of additional sessions, DNA/CC, and relationship enhancement phase sessions, $F(1,54) = 1.6, F(1,53) = 0.1$, and $F(1,54) = 1.6$, respectively.

Observed Parent-Child Interactions, Depression, and Treatment versus Waitlist

Pre-assessment differences. Five t-tests were used to compare depressed and nondepressed caregivers on observed behaviours when interacting with their children prior to the start of treatment or the supported waitlist. No support for hypothesised group differences was found; there were no group differences in observed praises, reflections / descriptions, questions, instructions, and negative talk of depressed and nondepressed caregivers when assessed prior to treatment or waitlist (see Table 2).

Patterns of observed positive behaviours. It was predicted that the percentage of praises and reflections/descriptions would have increased less for depressed caregivers than

nondepressed caregivers in treatment, but no changes were expected among nondepressed or depressed caregivers in the waitlist comparison group. Two repeated measures ANOVAs were estimated to test these predictions. The models had two between group factors (treatment condition and depression status), and one within group factor. In the first model, the dependent variable was observed parental praises of their children. In the second model the dependent variable was observed parental reflections and descriptions when interacting with their children.

Table 2

Comparisons of Pre-Assessment Parent-Child Interactions between Depressed and Nondepressed Female Caregivers

Dependent variable	Depressed caregivers		Nondepressed caregivers		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Observed praises, pre, %	4.7	1.2	3.6	0.6	-0.9
Observed reflections/descriptions, pre, %	48.2	2.8	49.8	1.7	0.5
Observed questions, pre, %	29.0	2.4	33.4	1.8	1.5
Observed instructions, pre, %	12.9	2.0	12.4	1.8	-0.2
Observed negative talk, pre, %	2.0	0.9	0.8	0.3	-1.5

Of most importance here, no significant 3-way interaction and no significant depression group x time interaction were found when observed praise was the dependent variable. Yet, a significant 2-way interaction was found between treatment group and time, $F(1, 46) = 17.0, p < .05$. Caregivers in PCIT treatment had a significant increase in observed praise, pre-treatment $M = 4.1; SE = 1.1$; 12-week $M = 14.5; SE = 1.9$; paired $t(1,$

30) = 6.0, $p < .05$. Caregivers on the waitlist showed no change in observed praise, pre-treatment $M = 5.8$; $SE = 1.4$; 12-week $M = 4.2$; $SE = 2.2$; paired $t(1, 18) = -.87$, $p = .40$.

When observed reflections/descriptions was the dependent variable, a significant 3-way interaction was found, $F(1, 46) = 4.8$, $p < .05$. As shown in Figure 2, opposite to our expectation, depressed as compared to nondepressed caregivers receiving PCIT appeared to have a steeper incline in reflections/description, pre-treatment $M = 47.6$; $SE = 4.9$; 12-week $M = 72.2$; $SE = 3.4$, compared to nondepressed caregivers in treatment, pre-treatment $M = 51.2$; $SE = 3.2$; 12-week $M = 65.5$; $SE = 2.2$. In addition, there was a significant 2-way interaction between treatment condition and time, $F(1, 46) = 21.6$, $p < .05$. Caregivers in treatment were observed to increase in reflections/descriptions, pre- $M = 50.1$; $SE = 2.9$; 12-week $M = 67.4$; $SE = 1.8$; paired $t(1, 30) = 5.9$, $p < .05$, whereas caregivers on the waitlist showed no significant change with a mean of about 48.5 at both the pre- and 12-week assessments.

Patterns of observed negative behaviours. We predicted that observed parental instructions, questions, and negative talk when interacting with their children would decrease less for depressed caregivers than nondepressed caregivers in treatment; no changes in the waitlist were expected. Three repeated measures ANOVAs were performed with two between group factors (treatment condition and depression status), and one within group factor. The dependent variables were observed parental instructions, questions, and negative talk.

There were no significant 3-way interactions for observed instructions and questions, and no significant 2-way interactions between depression group and time. Yet, there was a significant 2-way interaction between the treatment condition and time for

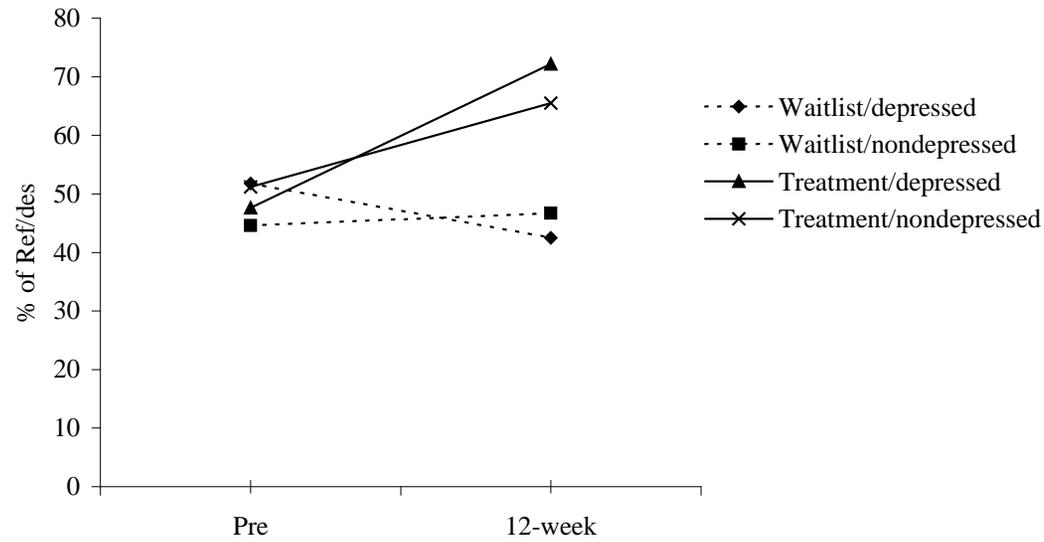


Figure 2. The 3-way interaction between depression status, treatment condition and time for reflections/descriptions.

Note. Waitlist/Nondepressed $N = 12$, Waitlist/Depressed $N = 7$, Treatment/Nondepressed $N = 22$, Treatment/Depressed $N = 9$.

observed instructions, $F(1, 46) = 4.4, p < .05$. Instructions among caregivers in treatment decreased, pre- $M = 10.2; SE = 1.9$; 12-week assessment $M = 5.3; SE = 1.2$; paired $t(1, 30) = -2.8, p < .05$, whereas instructions among caregivers on the waitlist did not significantly change over time, pre- $M = 9.7; SE = 2.3$; 12-week $M = 11.5; SE = 1.5$; $t(1, 18) = .53, p = .60$. There also was a significant 2-way interaction between the treatment condition and time for caregiver questions, $F(1, 46) = 12.2, p < .05$. Questions among caregivers in treatment decreased, pre- $M = 29.6; SE = 2.9$; 12-week $M = 10.9; SE = 2.3$; paired $t(1, 30) = -6.2, p < .05$, but the questions among caregivers on the waitlist did not significantly change over time, pre- $M = 35.7; SE = 3.5$; 12-week $M = 35.9; SE = 2.8$; paired $t(1, 18) = -.04, p = .97$.

Although the base rate of caregiver negative talk was quite low, a significant 3-way interaction was found, $F(1, 46) = 4.2, p < .05$. Yet, the results were not exactly as predicted. As shown in Figure 3, there was a trend for depressed caregivers on the waitlist to use more negative talk over time, pre- $M = 1.1, SE = .90$; 12-week $M = 6.1, SE = 1.1$; paired $t(1, 6) = 2.3, p = .06$. The other three groups of caregivers had levels of negative talk that were low and stayed very low between the pre- and 12-week assessments.

Treatment, Waitlist and Differences in Depressive Symptoms

It was hypothesised that caregivers' self-report of depressive symptoms would decline during participation in PCIT, whereas there would be no significant change in depressive symptoms among caregivers on the waitlist. A repeated measures ANOVA was used to test this hypothesis. The between-subject variable was treatment condition (treatment/waitlist). The within-subject variable was time (pre-assessment/12-week). The dependent variable was depressive symptomatology as measured by the BDI-II.

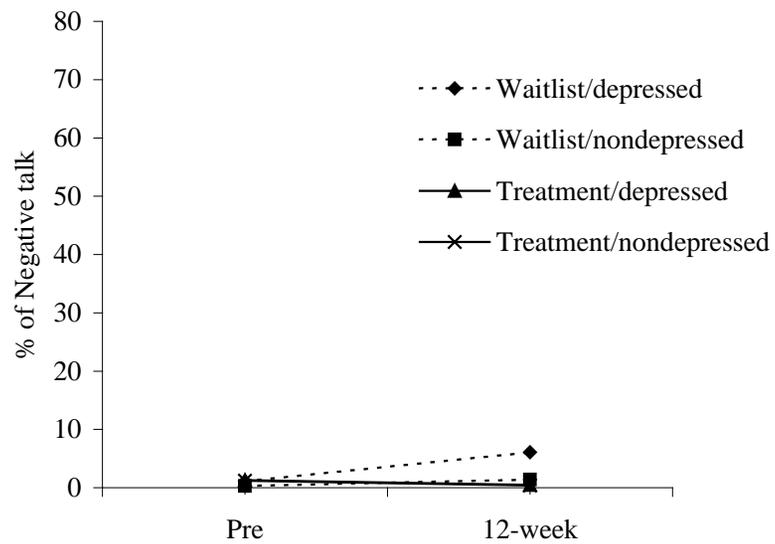


Figure 3. The 3-way interaction between depression status, treatment condition and time for negative talk.

Note. Waitlist/Nondepressed $N = 12$, Waitlist/Depressed $N = 7$, Treatment/Nondepressed $N = 22$, Treatment/Depressed $N = 9$.

This hypothesis was not supported. There was no significant main effect for treatment condition, $F(1, 47) = .44$, and no significant interaction between time and treatment condition, $F(2, 46) = 1.7$. However, results revealed a main effect for time, $F(2, 47) = 5.0, p < .05$. Planned contrasts showed that, on average, the depressive symptoms of caregivers in both the treatment group and the waitlist group declined from the pre- to the 6-week assessment, but no significant change was found between the 6-week and 12-week assessments for either group (see Figure 4). More specifically, there was a difference between the pre-treatment BDI-II score and 6-week BDI-II score, $F(1, 71) = 4.7, p < .05$. Caregivers were highest in depressive symptoms at pre-assessment, $M = 13.6; SD = 12.1$, with significantly lower levels of depressive symptoms by the 6-week, $M = 10.1; SD = 9.4$, and 12-week assessments, $M = 10.0; SD = 9.9$. However, there was no significant change in depressive symptoms from the 6-week to the 12-week assessment, $F(1, 47) = .51$.

A repeated measure ANOVA was used to test the prediction that observed maternal depressive symptoms (measured by the MOODS) would decrease from the pre- to the 12-week assessment among caregivers in treatment more than among caregivers on the waitlist. In support of this hypothesis, a significant two-way interaction was found between treatment condition and time, $F(1, 48) = 4.9, p < .05$ (see Figure 5). Caregivers in treatment displayed fewer depressive symptoms from the pre-assessment to the 12-week assessment, pre- $M = 2.9; SE = .3$; 12-week $M = 2.3; SE = .3$; paired $t(1, 33) = -2.7, p < .05$. There was no significant change in observed depressive displays among caregivers on the waitlist, pre- $M = 2.9; SE = .3$, 12-week $M = 3.2; SE = .3$, paired $t(1, 17) = .75, p = .46$.

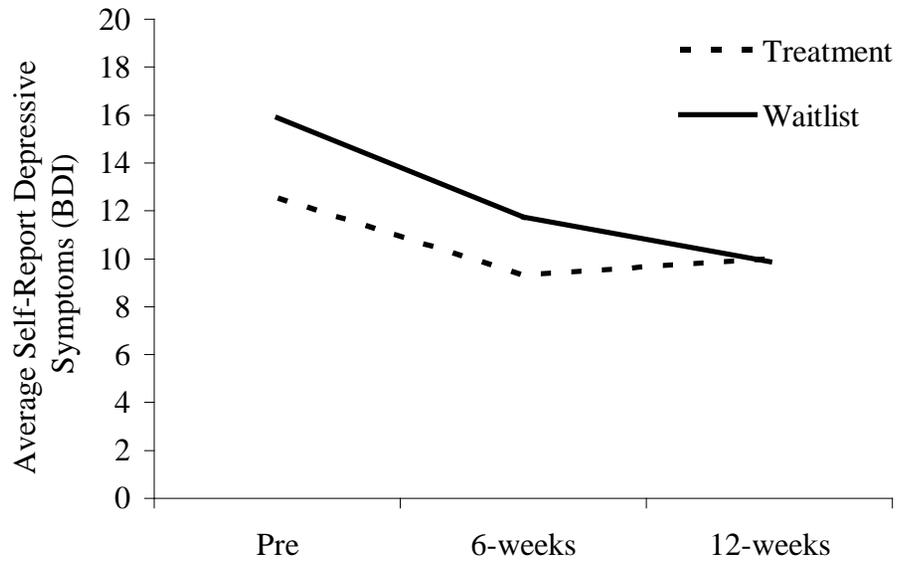


Figure 4. The 2-way interaction between treatment condition and time for self-report of depressive symptoms (Beck Depression Inventory scores).

Note. Treatment $N = 34$, Waitlist $N = 18$.

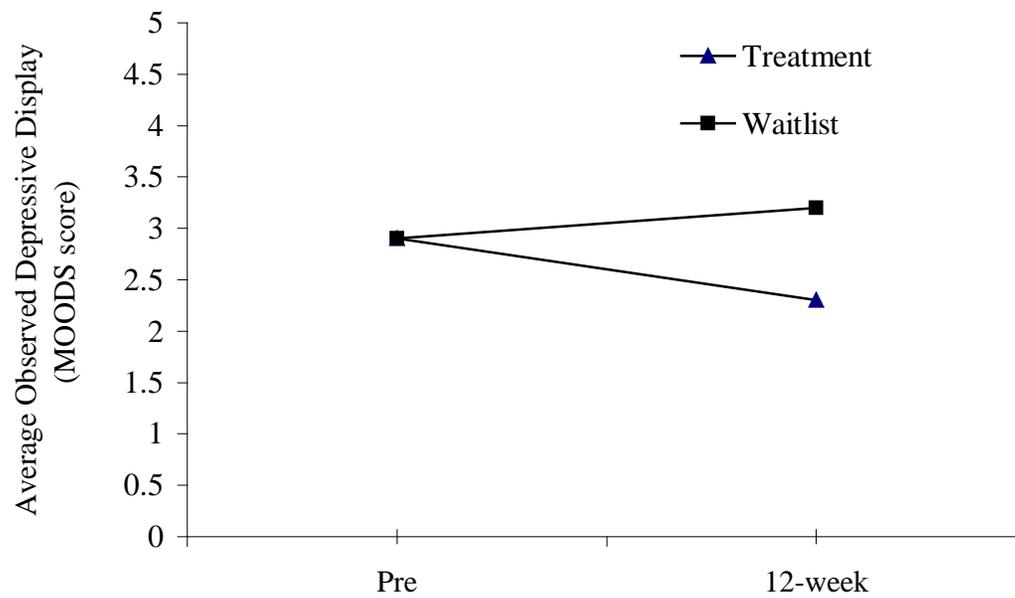


Figure 5. The 2-way interaction between treatment condition and time for observed displays of depressive affect (MOODS scores).

Note. Treatment $N = 34$, Waitlist $N = 18$.

Conclusion

There were three primary aims in the current study of Parent-Child Interaction Therapy (PCIT) and caregiver depression. The first aim was to examine the association between maternal depression and treatment retention/dropout after using a multimethod approach to identify caregivers who were or were not depressed. The second aim was to investigate whether there was a moderating effect of caregiver depression on intervention effectiveness, with effectiveness measured by repeated observations of caregiver verbalisations when interacting with their young children. Finally, the third aim was to test whether the parenting intervention had an influence on caregiver depressive symptoms when compared to a supported waitlist.

Caregiver Depression, Dropout, and Treatment Attendance

The first study aim was to examine the impact of caregiver depression on treatment attrition and attendance in a parenting intervention. Our findings support evidence from other studies that have reported no significant associations between maternal depression and negative treatment outcomes (Kazdin et al., 1994; Webster-Stratton & Hammond, 1990). Yet, a number of other researchers have reported associations between maternal depression and such negative treatment outcomes as dropout rates (Forehand, Furey, & McMahon, 1984; Griest et al., 1981; Kazdin, 1995; Kazdin & Wassell, 1999; McMahon, Forehand, Griest, & Wells, 1981). Much past research has been limited by methodological problems, such as a lack of diagnostic tools for depression classification and low pre-treatment questionnaire scores that were used to assess depression (see also Kazdin et al., 1997 who outlines some limitations of past research on negative treatment outcomes). We overcame this by using three measures of depression, including self-report, clinical

interview and observational methods, and the self-report and clinical interview assessments were used to better identify depressed caregivers.

Overall, many authors have described the possibility of a link between maternal depression and negative treatment outcomes (e.g., dropout, disengagement, and lack of maintenance of treatment gains), but there has been little supporting empirical evidence for these hypotheses. Concern over caregiver depression interfering with treatment outcomes may not be completely justified, at least among mostly socioeconomically disadvantaged families who were referred to or self-referred to a parenting intervention and had children with behavioural problems. Some researchers have noted that no single factor is sufficient for establishing risk for negative treatment outcomes, but a range of characteristics accumulate as risk factors (e.g., socioeconomic disadvantage, maternal depression, severity of child conduct problems; Assemany & McIntosh, 2002; Kazdin, 1995; Serketich & Dumas, 1996).). However, our isolation of depression shows that this caregiver characteristic has limited association with negative treatment outcomes in a parenting intervention when provided to socioeconomically disadvantaged female caregivers and their young children with behavioural problems.

Caregiver Depression and Parent-Child Interactions

Our second aim was to determine whether caregiver depression moderated parent-child interactions, measured at pre-assessment and following the intervention or waitlist condition. Overall, there was very little evidence of depression as a moderator. There were no significant differences in parent-child interactions (i.e., praises, reflections/descriptions, instructions, questions, and negative talk) between depressed and nondepressed caregivers at pre-assessment. Furthermore, depressed and nondepressed caregivers did not

significantly differ in the amount of change in parent-child interactions from pre- to the 12-week assessments. Instead, improvements in parent-child interactions were found among all treatment participants when compared to those on the waitlist.

There is currently mixed evidence in the literature surrounding the link between maternal depression and observed parent-child interactions. Our findings of no initial differences in parent-child interactions of depressed and nondepressed caregivers are consistent with some previous literature (e.g., Chi & Hinshaw, 2002; Frankel & Harmon, 1996), but contradict other studies (e.g., Downey & Coyne, 1990; Lovejoy et al., 2000). Clearly, this is an area of research that warrants further attention.

Some research has shown that depressed and nondepressed caregivers only differ in their negative interactions, but do not differ with regard to positive interactions with their children (Lovejoy et al., 2000). Therefore, the percentage of praises and positive attention (assessed via reflections and descriptions) during caregiver-child interactions supports this proposition by showing that positive behaviours of depressed and nondepressed caregivers did not differ at pre-assessment and depression did not moderate the effect of treatment on these positive treatment outcomes.

Yet, the finding of little group difference and low rates of negative talk in both depressed and nondepressed caregivers is still perplexing. The low rates of negative talk made it difficult to be confident in our analyses of pre-assessment group differences and change in negative talk over time. It could be that the laboratory and play setting had the effect of minimising the frequency of negative talk. Observations in the home or other more natural settings should be considered in future research, but other work from our group has shown low levels of negative behaviours in home settings as well (McCarthy, 2006), and

previous research has failed to find difference in behaviours observed in the laboratory and in home settings (Lovejoy et al., 2000).

There also were no differences between depressed and nondepressed caregivers when pre-assessment instructions and questions were compared, and there were no differences when the treatment outcomes of depressed and nondepressed caregivers were compared. Instructions and questions were considered to be negative aspects of caregivers' interactions with children during play. In PCIT, these are construed as negative, because caregivers who have children with behaviour problems are encouraged to reduce their use of questions and instructions during play, while increasing their praise and reflections of children's behaviours (Hembree-Kigin & McNeil, 1995). However, these behaviours cannot always be construed as negative outside the context of PCIT, and it is less surprising that these forms of female caregiver interactions with their children did not differ between depressed and nondepressed caregivers.

Depressive Symptoms during PCIT and Supported Waitlist Participation

When analyses were completed to investigate our third study aim (i.e., whether there was an association between treatment participation and depressive affect or observed depressive displays), improvements in self-reported depressive symptoms were found. On average, improvements in self-reported depression occurred early – between the pre-assessment and the assessment 6 weeks into PCIT or the waitlist condition; depression levels did not significantly differ between the 6-week and the 12-week assessments. Additionally, these early improvements were similar among female caregivers in treatment *and* on the supported waitlist, suggesting that decreased depression was not necessarily a by-product of participation in PCIT. These findings are consistent with some studies

(Cunningham, Bremner, & Boyle, 1995; Irvine et al., 1999; McGillicuddy, Rychtarik, Duquette, & Morsheimer, 2001; Taylor, Schmidt, Pepler, & Hodgins, 1998), while conflicting with a few others (Barlow & Coren, 2005; Dadds & McHugh, 1992; Hutchings et al., 2002). For example, Irvine et al. found no significant changes in depressive symptoms, while Hutchings et al. found significant improvements in depressive symptoms through the course of a parenting intervention. These decreases in self-reported depressive symptoms that were found here were comparable to those reported in another study of PCIT with high risk families (Chaffin et al., 2004).

There are many possible explanations for the decrease in depressive symptoms when reported by caregivers, especially depressed caregivers. First, the waitlist condition was designed to be supportive in that caregivers were contacted each week in order to discuss concerns unrelated to parenting, along with gaining supportive counselling and referrals, when necessary. The regular contact with a supportive presence may have been associated with changes in caregivers' depressive symptoms. Second and related to this, the change in self-reported depressive symptoms may have been tapping a decrease in parental distress, rather than clinical depression, as has been suggested by others (Tennen et al., 1995). Caregiver distress may have been reduced by even a small amount of regular contact with a parenting intervention. These findings raise the issue that the presence of any kind of therapeutic support may be enough to reduce caregivers' depressive symptoms, and these symptoms will decline rather rapidly. The participation in a parenting intervention (e.g., PCIT), individual counselling, or even a combination of a parenting intervention with a depression component may be equally as effective in reducing caregivers' depressive symptoms. This is further supported by research that has found parenting interventions

versus parenting interventions with enhanced components to directly focus on reducing depressive symptoms are similarly effective in reducing depressive symptoms of caregivers. For example, Chaffin et al., 2004 compared three different treatments (PCIT, PCIT plus individualised enhanced services, and a standard community-based parenting group) and found equally significant improvements in depressive symptoms (see also Sanders & McFarland, 2000).

Somewhat in contrast, however, when our measure of observed depressive displays by female caregivers (i.e., the MOODS observational measure) was used in a similar analysis, results were somewhat inconsistent with those found with self-reported depressive symptoms, and provide some support for an effect of PCIT on depressive displays. All caregivers in treatment were observed to improve on the MOODS from the pre-assessment to the 12-week assessment, whereas there was no significant change among caregivers on the supported waitlist. It is difficult to interpret this finding as showing only improvements in depressive symptom, however, because MOODS scores only had modest (but significant) correlations with other depression measures (self-report or clinical interview). The changes in positive parent-child interactions from pre- to post-treatment were similar to the changes seen in depressive displays among mothers in treatment. Because the MOODS was coded by viewing mothers interacting with their children, it is likely that the focus on promoting positive parent-child interactions had an influence on both parent-child interactions and MOODS scores, with mothers reducing their depressive displays over time as they increased positive interactions with their children over time.

Limitations and Strengths of the Study

Similar to other empirical studies, depressed and nondepressed caregivers who initiated and at least completed the two pre-assessment sessions were included in the current study. This sample may not have been representative of all depressed caregivers with young children in the community. We were unable to gather information about the families who contacted the service, but did not attend at least the first session. It is possible that the individuals who attended the parenting intervention may have been unrepresentative in some way. For example, depressed caregivers in the study may have differed from other depressed caregivers on their level of motivation, level of initiative, willingness to receive help, or other factors that helped them commit to the intervention and display improvements in interactions with their children and reductions in their depressive displays.

Along with this limitation, there were a number of strengths to mention. First, a variety of assessments methods were used, including self-report (e.g., BDI-II), observations (e.g., DPICS-III), and therapist-reported attendance details. Thus, the findings were not dependant on only one reporter or type of assessment method. Second, this use of multiple methods also extended to the measure of depression. Third, a supported waitlist group was used to allow comparisons between caregivers participating in the treatment and those that were not. Due to the supported waitlist, it can be concluded that it was not PCIT that was associated with improvement in self-reported depressive symptoms. Fourth, the depressed caregivers in the study had fairly high levels of depression making this study more generalisable to a sample of female caregivers with clinical levels of depression.

Summary

In summary, caregiver depression has been often described as having a negative impact on parenting behaviour, child adjustment and outcomes of treatment for parenting and child problems (Brent et al., 1998; Downey & Coyne, 1990; Goodwin & Gotlib, 2002; Lovejoy et al., 2000; Southam-Gerow, Kendall, & Weersing, 2001; Stoolmiller, Duncan, Bank, & Patterson, 1993). Our findings suggest that this may not be the case among low socioeconomic status, female caregivers who attend an intensive intervention focusing on parenting behaviours for their young children with behaviour problems. With the high prevalence rate of depression among women (Chaffin, Kelleher, & Hollenberg, 1996; Lovejoy et al., 2000; Nolen-Hoeksema, 2001) and the negative long-term outcomes associated with child behavioural problems (Bor, Sanders & Markie-Dadds, 2002), it is critical that therapeutic attention focuses on intervening early when there are parenting and child behaviour problems in order to decrease problems or, at the least, undermine escalation. However, it may be difficult to simultaneously intervene in all areas of concern. This is where the current results may be useful. Parenting interventions have been found to be effective for parents with children who have significant behaviour problems (Webster-Stratton & Taylor, 2001), and the current findings show that caregiver depression does not seem to negatively impact on attendance and length of an intervention, and outcomes in terms of observed parent-child interactions. These findings should reduce concern that depressive symptoms might interfere with attendance and outcomes in a parenting intervention for female caregivers and their young children. Additionally, contact with an intervention, whether with weekly session or via a supportive phone call, is associated with declining caregiver depressive symptoms. This should alleviate some concern about the

lack of effectiveness of parenting intervention when mothers are found to have high levels of depressive symptomatology.

Acknowledgements

A portion of this work was included in the Professional Doctoral Dissertation of Dr. Mark Scholes. We are grateful for financial support from the Future Directions Prevention and Early Intervention Trial funded by the Queensland Department of Child Safety, Australia. We extend a personal thanks to all the children and parents for their time and cooperation in this study, and our appreciation for therapeutic, and data collection and entry assistance from Dr. Angela Anthonyamy, Elbina Avdagic, Michelle Hanisch, Dr. Kate McCarthy, Leanne McGregor, Anne Stuksrud, and Judith Warner.

References

- American Psychiatric Association. (2001). *Diagnostic and statistical manual of mental disorders (4th ed.)*. Washington, DC: Author.
- Assemany, A., & McIntosh, D. (2002). Negative treatment outcomes of behavioral parent training programs. *Psychology in the Schools, 39*, 209-219.
- Barlow, J., & Coren, E. (2005). Parental-training for improving maternal psychosocial health (Review). *Cochrane Library, Issue 2*.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck Depression Inventory Manual (2nd Edition)*. San Antonio, TX: The Psychological Corporation.
- Bor, W., Sanders, M. R., & Markie-Dadds, C. (2002). The effects of the Triple P- Positive Parenting Program on preschool children with co-occurring disruptive behavior and attentional/hyperactive difficulties. *Journal of Abnormal Child Psychology, 30*, 571-587.
- Brent, D. A., Kolko, D. J., Birmaher, B., Baugher, M., Bridge, J., Roth, C., & Holder, D. (1998). Predictors of treatment efficacy in a clinical trial of three psychosocial treatments for adolescent depression. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*, 906-916.
- Chaffin, M., Kelleher, K., & Hollenberg, J. (1996). Onset of physical abuse and neglect: Psychiatric, substance abuse, and social risk factors from prospective community data. *Child Abuse and Neglect, 20*, 191-203.
- Chaffin, M., Silovsky, J. F., Funderburk, B., Valle, L. A., Brestan, E. V., Balachova, T., Jackson, S., Lensgraf, J., & Bonner, B. L. (2004). Parent-child interaction therapy

- with physically abusive parents: Efficacy for reducing future abuse reports. *Journal of Consulting and Clinical Psychology*, 72, 500-510.
- Chambless, D. L., & Ollendick, T. H. (2000). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology*, 52, 685-716.
- Chi, T., & Hinshaw, S. (2002). Mother-child relationships of children with ADHD: The role of maternal depressive symptoms and depression-related distortions. *Journal of Abnormal Psychology*, 30, 287-400.
- Cunningham, C. E., Bremner, R., & Boyle, M. (1995). Large group community-based parenting programs for families of preschoolers at risk for disruptive behavior disorders: Utilization, cost-effectiveness, and outcome. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 36, 1141-1159.
- Dadds, M. R., & McHugh, T. A. (1992). Social support and treatment outcome in behavioral family therapy for child conduct problems. *Journal of Consulting and Clinical Psychology*, 60, 252-259.
- Downey, G., & Coyne, J. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin*, 108, 50-76.
- Eyberg, S. M., Boggs, S., & Algina, J. (1995). Parent-child interaction therapy: A psychosocial model for the treatment of young children with conduct problem behavior and their families. *Psychopharmacology Bulletin*, 31, 83-91.
- Eyberg, S.M., Duke, M., McDiarmid, M., Boggs, S., Robinson, E., & Washington, E. (2004). *Dyadic Parent-Child Interaction Coding System Third Edition*. Unpublished manuscript. University of Florida.

- Eyberg, S. M., & Robinson, E. (1983). Parent-child interaction training. Effects on family functioning. *Journal of Clinical Child Psychology, 11*, 130-137.
- Foote, R. C., Eyberg, S. M., & Schuhmann, E. M. (1998). Parent-child interaction approaches to the treatment of child behavior problems. In T. H. Ollendick, & Prinz, R. J. (Eds.), *Advances in Clinical Child Psychology* (pp. 125-151). New York and London: Plenum Press.
- Forehand, R., Furey, W. M., & McMahon, R. J. (1984). The role of maternal distress in a parent training program to modify child non-compliance. *Behavioral Psychotherapy, 12*, 93-108.
- Frankel, K., & Harmon, R. (1996). Depressed mothers: They don't always look as bad as they feel. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*, 289-309.
- Goodman, S., & Gotlib, I. (1999). Risk for psychopathology in the children of depressed mothers: A developmental model for understanding mechanisms of transmission. *Psychological Review, 106*, 458-490.
- Goodwin, S., & Gotlib, I. (2002). *Children of depressed parents: Mechanisms of risk and implications for treatment*. American Psychological Association: Washington, DC.
- Griest, D. L., Forehand, R., & Wells, K. C. (1981). Follow-up assessment of parent behavioral training: An analysis of who will participate. *Child Study Journal, 11*, 221-229.
- Hembree-Kigin, T. L., & McNeil, C. B. (1995). *Parent-child interaction therapy*. New York: Plenum Press.

- Hops, H., Biglan, A., Sherman, L., Arthur, J., Friedman, L., & Osteen, V. (1987). Home observations of family interactions of depressed women. *Journal of Consulting and Clinical Psychology, 55*, 341-346.
- Hutchings, J., Appleton, P., Smith, M., Lane, E., & Nash, S. (2002). Evaluation of two treatments for children with severe behavior problems: Child behavior and maternal mental health outcomes. *Behavioral and Cognitive Psychotherapy, 30*, 279-295.
- Irvine, A. B., Biglan, A., Smolkowski, K., Metzler, C. W., & Ary, D. V. (1999). The effectiveness of a parenting skills program for parents of middle school students in small communities. *Journal of Consulting and Clinical Psychology, 67*, 811-825.
- Kazdin, A. E. (1995). Child, parent and family dysfunction as predictors of outcome in cognitive-behavioral treatment of antisocial children. *Behavior Research and Therapy, 33*, 271-281.
- Kazdin, A., Holland, L., & Crowley, M. (1997). Family experience of barriers to treatment and premature termination from child therapy. *Journal of Consulting and Clinical Psychology, 65*, 453-463.
- Kazdin, A. E., Mazurick, J. L., & Siegel, T. C. (1994). Treatment outcome among children with externalizing disorder who terminate prematurely versus those who complete psychotherapy. *Journal of American Academy of Child and Adolescent Psychiatry, 33*, 549-557.
- Kazdin, A. E., & Wassell, G. (1999). Barriers to treatment participation and therapeutic change among children referred for conduct disorder. *Journal of Clinical Child Psychology, 28*, 160-172.

- Lovejoy, M., O'Hare, G., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review, 20*, 561-592.
- McGillicuddy, N. B., Rychtarik, R. G., Duquette, J. A., & Morsheimer, T. (2001). Development of a skill training program for parents of substance-abusing adolescents. *Journal of Substance Abuse Treatment, 20*, 59-68.
- McMahon, R. J., Forehand, R., Griest, D. L., & Wells, K. C. (1981). Who drops out of therapy during parent behavioral training? *Behavioral Counselling Quarterly, 1*, 79-85.
- McCarthy, K. (2006). *An observational study of high-risk mothers and children during a frustrating task*. unpublished dissertation, Department of Psychology, Griffith University, Gold Coast, Australia.
- Nolen-Hoeksema, S. (2001). Gender differences in depression. *Current Directions in Psychological Science, 10*, 173-176.
- Querido, J. G., Eyberg, S. M., & Boggs, S. R. (2001). Revisiting the accuracy hypothesis in families of young children with conduct problems. *Journal of Clinical Child Psychology, 30*, 253-261.
- Radke-Yarrow, M., Nottelmann, E., Belmont, B., & Welsh, J. D. (1993). Affective interactions of depressed and nondepressed mothers and their children. *Journal of Abnormal Child Psychology, 21*, 683-696.
- Riegelman, R. K., & Hirsch, R. P. (1996). *Studying a study and testing a test: How to read the health science literature (Third Edition)*. New York: Little, Brown and Company.

- Sameroff, A. J. (2004). Ports of entry and the dynamics of mother-infant interactions. In A. J. Sameroff, S. C. McDonough, & K. L. Rosenblum (Eds.), *Treating parent-infant relationship problems: Strategies for intervention* (pp. 3-28). New York: Guilford.
- Sanders, M. R., & McFarland, M. (2000). Treatment of depressed mothers with disruptive children: A controlled evaluation of cognitive behavioral family intervention. *Behavior Therapy, 31*, 89-112.
- Scholes, M. A. (2005). *Female caregiver depression in Parent-Child Interaction Therapy: Identification, change, and moderation of treatment outcomes*. unpublished dissertation, Department of Psychology, Griffith University, Gold Coast, Australia.
- Serketich, W. J., & Dumas, J. E. (1996). The effectiveness of behavioral parent training to modify antisocial behavior in children: A meta-analysis. *Behavior Therapy, 27*, 171-186.
- Southam-Gerow, M. A., Kendall, P. C., & Weersing, V. R. (2001). Examining outcome variability: Correlates of treatment response in a child and adolescent anxiety clinic. *Journal of Clinical Child Psychology, 30*, 422-436.
- Stoolmiller, M., Duncan, T., Bank, L., & Patterson, G. R. (1993). Some problems and solutions in the study of change: Significant patterns in client resistance. *Journal of Consulting and Clinical Psychology, 61*, 920-928.
- Taylor, T. K., Schmidt, F., Pepler, D., & Hodgins, C. A. (1998). A comparison of eclectic treatment with Webster-Stratton's parents and children series in a children's mental health centre: A randomized controlled trial. *Behavior Therapy, 29*, 221-240.

- Tennen, H., Hall, J. A., & Affleck, G. (1995). Depression research methodologies in *Journal of Personality and Social Psychology: A review and critique. Journal of Personality and Social Psychology, 68*, 870-884.
- Thomas, R., & Zimmer-Gembeck, M. J. (2007). Behavioral outcomes of Parent-Child Interaction Therapy and Triple P - Positive Parenting Program: A review and meta-analysis. *Journal of Abnormal Child Psychology, 35*, 475-495.
- Webster-Stratton, C., & Hammond, M. (1990). Predictors of treatment outcome in parent training for families with conduct problem children. *Behavior Therapy, 21*, 319-337.
- Webster-Stratton, C., & Taylor, T. (2001). Nipping early risk factors in the bud: Preventing substance abuse, delinquency, and violence in adolescence through interventions targeted at young children (0-8 years). *Prevention Science, 2*, 165-192.