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- MARIËLLE ABRAHAMSE -

TREATING YOUNG CHILDREN'S DISRUPTIVE BEHAVIOR PROBLEMS

Dissemination of an
evidence-based parent
management training
program in the
Netherlands

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Mariëlle Abrahamse

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program in the Netherlands**

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*“The children who need love the most will ask
for it in the most unloving ways”*

Russell A. Barkley

*To Wouter,
because in this crazy life,
and through these crazy times
It's you, it's you; you make me sing
You're every line, you're every word,
you're everything
Michael Bublé*

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Chapter 1

General introduction

The majority of young children lose their temper or become frustrated when they don't get what they want. Also, children can have an angry or irritable mood, or hit other children. These behaviors are part of their typical development and it has been found that children who do not initiate physical aggression before the age of 3 are extremely rare (Tremblay, 2010). Developmental studies have shown that aggressive behavior in children peaks between 2 and 3 years of age and that boys show this behavior more frequently than girls (Alink et al., 2006). After this age, most children learn to use alternative behaviors before school entry (Tremblay et al., 2004). However, a small group (7% to 11%) of both boys and girls show notably more externalizing behavior problems than their peers throughout childhood (Broidy et al., 2003; Tremblay, 2010). For these children, the stability of their behavior is high, and if left untreated, the behavior can worsen over time (Bongers, Koot, Van der Ende, & Verhulst, 2004; Nock, Kazdin, Hiripi, & Kessler, 2007).

Disruptive behavior disorders

Children who have persistently high levels of externalizing behaviors are at risk for the development of Disruptive Behavior Disorders (DBDs), including oppositional defiant disorder (ODD) and conduct disorder (CD) (Loeber, Burke, Lahey, Winters, & Zera, 2000). As described by the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), the diagnosis of ODD refers to a persistent pattern of negativistic, defiant, disobedient, and hostile behavior toward others, whereas the key features of CD center on a persistent pattern of behavior that involves significant violations of the rights of others and/or major societal norms (APA; American Psychiatric Association, 2013). There is strong evidence that DBDs are associated with a range of mental health problems. For instance, the comorbidity of DBDs with attention deficit hyperactivity disorder (ADHD) is high (Angold, Costello, & Erkanli, 1999; Beauchaine, Hinshaw, & Pang, 2010). Previous research has shown that DBDs are among the most prevalent disorders in children and adolescents (Lahey, Miller, Gordon, & Riley, 1999; Lavigne, LeBailly, Hopkins, Gouze, & Binns, 2009) and are the most frequent reason for referral to mental health services (Loeber et al., 2000). In regard to child gender, research indicates that rates of ODD are largely similar in boys and girls (Nock et al., 2007), but some studies show a slightly higher prevalence of ODD for boys in young children (Loeber, Burke, & Pardini, 2009; Rowe, Costello, Angold, Copeland, & Maughan, 2010). CD is consistently more common in boys than girls (e.g., Maughan, Rowe, Messer, Goodman, & Meltzer, 2004; Nock, Kazdin, Hiripi, & Kessler, 2006). In the Netherlands, externalizing behavioral disorders, including ADHD, ODD, and CD, are also the most common disorders, occurring in 16.4% of 5- to 8-year-old children in a large population-based cohort (Rijlaarsdam et al., 2015). However, the overall percentage of children with problems who are referred to child mental health care is estimated to be much lower, indicating an underutilization of services. In particular, children from ethnic minority backgrounds are less likely to receive child mental health

care (De Haan, Boon, Vermeiren, & De Jong, 2012; Zwaanswijk, Verhaak, Bensing, Van der Ende, & Verhulst, 2003).

Consequences of early child behavior problems

The high stability of child disruptive behavior indicates that early onset of these problems can lead to serious impairments in social, emotional, and educational functioning, and predict adjustment difficulties into adulthood, such as unemployment, family problems, and a broad range of psychiatric disorders (Frick & Nigg, 2012; Kim-Cohen et al., 2003; Maughan & Rutter, 2001). Furthermore, an early DBD diagnosis represents the most powerful risk factor for subsequent youth offending and adult crime, including interpersonal violence and substance abuse (Fergusson, John Horwood, & Ridder, 2005; McCord, Widom, & Crowell, 2001). In addition to negative consequences for the trajectory of the child and their families on several domains, disruptive behavior problems also pose significant challenges for society as a whole and are considered a costly public health concern (Honeycutt, Khavjou, Jones, Cuellar, & Forehand, 2015). The incidence of DBDs leads to considerable economic consequences for mental health and social services, education, and law enforcement (Foster & Jones, 2005; Scott, Knapp, Henderson, & Maughan, 2001). By the time children with DBDs reach adulthood, their costs to society are estimated to be up to ten times higher than children without DBDs (Scott et al., 2001). In the Netherlands, research has demonstrated that a high level of child aggressive behavior during the preschool years already leads to higher costs of services and more impairment in family functioning (Raaijmakers, Posthumus, Van Hout, Van Engeland, & Matthys, 2011).

Factors associated with the development of disruptive behavior

The development and persistence of child disruptive behavior problems appear to be explained by multiple interacting child and family factors. Child factors include difficult temperament, neurodevelopmental abnormalities, and genetic factors that interact with the child's environment (Gao, Raine, Venables, Dawson, & Mednick, 2010; Moffitt, 2005; Stringaris, Maughan, & Goodman, 2010). Family factors include low socioeconomic status, single-parent status, inter-parental conflict, parent antisocial personality disorder, and maternal depression (Appleyard, Egeland, Van Dulmen, & Sroufe, 2005; Côté, Vaillancourt, LeBlanc, Nagin, & Tremblay, 2006; Goodman, 1997; Kuperman, Schlosser, Lidral, & Reich, 1999; Reid, Patterson, & Snyder, 2002). These family factors also increase the level of parenting stress and are believed to contribute to the development of child disruptive behavior (McMahon & Estes, 1997). The bi-directional relationship between parenting stress and child disruptive behavior leads to increasingly coercive parent-child interactions, which play a crucial role in the persistence of DBDs throughout development (Neece, Green, & Baker, 2012; Patterson, 2002). Moreover, inappropriate parenting

strategies such as harsh discipline styles are also associated with the development of child disruptive behavior problems (McElroy & Rodriguez, 2008; Reid et al., 2002).

Prevention of disruptive behavior problems

Considering the high prevalence rates and the wide variety of negative outcomes of DBDs for the children, their families, and the economic implications for the larger society, early prevention of disruptive behavior in children is essential (Heckman, 2006). As most children learn alternatives to regulate their behavior during the preschool years, it is important to target children who are at high risk for the development of a chronic pattern. Thereby, it can be expected that interventions which target these children at an early age will have a more significant impact, compared to interventions which are provided five to ten years later, when behavior patterns have become more persistent (Farrington & Welsh, 2006; Heckman, 2006; Tremblay, 2006). Recently, based on meta-analytic findings, researchers emphasized using psychosocial treatments as the first-line treatment for child disruptive behavior problems instead of psychotropic interventions (i.e., medication; Comer, Chow, Chan, Cooper-Vince, & Wilson, 2013).

Parent management training programs

Over the past decade, the effectiveness of psychosocial treatments has been extensively studied and reviews suggest that parent management training (PMT) programs are the most effective strategy to protect children from a negative trajectory (Eyberg, Nelson, & Boggs, 2008; McCart, Priester, Davies, & Azen, 2006; Weisz & Kazdin, 2010). These interventions have shown positive effects on many measures of child and family functioning that are maintained for at least one year after treatment (Eyberg, Boggs, & Jaccard, 2014). Most PMT programs are based on social learning theory, which emphasizes the contingencies that shape dysfunctional interactions between children with disruptive behavior and their parents (Bandura, 1977). Interventions are also based on Patterson's coercion theory to modify maladaptive parent-child interactions into more adaptive behaviors (Patterson, 2002). Although inappropriate parenting skills may serve as a risk factor in the development of DBDs, PMT programs reshape parent practices in order to change the child's behavior (Comer et al., 2013). The aim is to strengthen positive parenting and reduce the coercive pattern in parent-child interactions, which in turn will reinforce pro-social behavior in the child (DeGarmo, Patterson, & Forgatch, 2004).

There are many diverse PMT programs emphasizing different content, delivery settings, techniques, and types of families served. In regard to this large and heterogeneous number of interventions, there has become an increasing interest to determine the effective components of PMT programs that lead to behavior change (Kaminski, Valle, Filene, & Boyle, 2008). One program element associated with larger effect sizes in the decrease

of child disruptive behavior problems and the improvement of effective parenting skills is program delivery via direct skill practice with the parent's own child. Also, teaching parents to use time-out as a disciplinary technique and teaching them to respond consistently to their child's behaviors are additional elements with significantly large effects (Kaminski et al., 2008).

Dissemination of parent management training programs

The accumulating evidence on the effectiveness of PMT programs coupled with the global concern about child behavior problems has led many governments and international organizations (e.g., World Health Organization (WHO), United Nations Office on Drugs and Crime (UNODC)), to promote widespread dissemination of evidence-based parenting programs (Gardner, Montgomery, & Knerr, 2015; Wessels et al., 2013). Also, the Dutch government has developed a preventive policy for child mental health problems (e.g., Ministry of Health, Welfare and Sport, 2014). A recent meta-analysis of Gardner et al. (2015) demonstrated promising evidence for the transportability of PMT programs from the country of origin (usually the United States (US) or Australia) to other countries and cultures. Effect sizes on the reduction of child behavior problems were also consistent in countries that were culturally more different from origin countries. Based on these findings, it seems that cultural and national differences do not negatively influence the effectiveness of internationally disseminated PMT programs and there is no need for cultural adaptations. Despite the growing body of literature, if a PMT program is to be successfully transported to another country, where family interactions may be influenced by different cultural expectations and child's mental health problems may be addressed with different systems, evaluating implementation outcomes remains important (Castro, Barrera, & Holleran Steiker, 2010; Wessels et al., 2013).

Another issue worth mentioning in research on PMT programs and other evidence-based interventions for children is the gap between science and clinical practice. Despite the large scale of international dissemination, evidence-based interventions are often underused and understudied in everyday clinical settings such as community mental health centers (Michelson, Davenport, Dretzke, Barlow, & Day, 2013). Most intervention research lacks clinical representativeness because interventions are tested under ideal conditions in controlled research settings, which differ substantially from real-world clinical care (Weisz, Doss, & Hawley, 2005). Limited research within everyday clinical practice is a consequence of several complicating factors that are congruent with conducting research in these settings. These factors include children with comorbid disorders, parental mental health problems, practitioners with full caseloads, and limited supervision recourses in the clinic (Weisz, Krumholz, Santucci, Thomassin, & Ng, 2015). Although the delivery of interventions in every clinical practice may be beneficial with regard to the accessibility

and availability of services, more research is necessary to test the effectiveness of these interventions under everyday conditions (Weisz, Ng, & Bearman, 2014; Yates, 2011). In addition, evaluating the balance between costs and benefits, the cost-effectiveness, is imperative in order to convincingly argue for widespread dissemination (e.g., Aos, Lieb, Mayfield, Miller, & Pennucci, 2004; Lee et al., 2012). Furthermore, it is important to consider that evidence-based interventions tend to have lower effect sizes when replicated in everyday clinical practice or even have zero or negative effects (Dishion, McCord, & Poulin, 1999; Moos, 2005; Weisz, Ugueto, Cheron, & Herren, 2013). For example, previous research on PMT programs in community mental health services demonstrated higher attrition rates affecting treatment effectiveness, and high-risk populations (e.g., families with low socioeconomic status or minority ethnic backgrounds) are hardly reached (Eyberg et al., 2008; Garcia & Weisz, 2002; Reyno & McGrath, 2006). To address the concerns on how well PMT programs fit in the context of everyday clinical practice, important challenges lie ahead for research to serve children with disruptive behavior problems and their families.

Parent-Child Interaction Therapy

As PMT programs are considered the treatment of choice for young children with disruptive behavior problems (Eyberg et al., 2008) and due to the preventive policy of the Dutch government, a number of evidence-based PMT programs have been implemented and studied in the Netherlands. The interventions with considerable evidence include the Triple P-Positive Parenting Program (Sanders, 2012), Incredible Years (Leijten, Raaijmakers, Orobio de Castro, Van den Ban, & Matthys, 2015; Posthumus, Raaijmakers, Maassen, Van Engeland, & Matthys, 2012; Webster-Stratton & Reid, 2010), and Parent Management Training Oregon (Patterson, 2005).

The current thesis focuses on the effectiveness of the Dutch implementation of evidence-based PMT program Parent-Child Interaction Therapy (PCIT; Zisser & Eyberg, 2010), a manualized intervention targeting disruptive behavior problems in children 2 to 7 years of age. PCIT has foundations in social learning and attachment theories and aims to alter the pattern of the parent-child interactions in order to change the child's behavior. The structure of PCIT is developed according the two-stage Hanf treatment model, which includes a relationship focused, behaviorally oriented play therapy phase (Child-Directed Interaction (CDI)), and a behavioral management focused phase (Parent-Directed Interaction (PDI)). These two phases are based on the foundation that a warm and responsive relationship is necessary for establishing effective limit setting and consistency in discipline that will lead to a lasting change in the behaviors of both parent and child (Reitman & McMahan, 2013). Therapists provide live coaching to parents during their interactions with the child through a one-way mirror with a wireless headset. During CDI, parents

learn to follow their child's lead using the *PRIDE skills* (i.e., *do skills*): **P**raising the child, **R**eflecting the child's statements, **I**mitating the child's play, **D**escribing the child's behavior, and **E**njoying the play. These skills are used to reinforce the child's appropriate behavior and parents learn to use the technique of differential social attention by giving attention to positive behavior only and ignoring negative, but not dangerous, behavior. Parents are also taught to avoid verbalizations (i.e., *don't skills*) that take the child's lead away, including questions, commands, and negative statements (e.g., criticism or sarcasm). During PDI, parents continue using the PRIDE skills and learn to use limit setting and effective commands to decrease child noncompliance and inappropriate behavior. The therapist teaches the parent to consistently follow through with consequences (e.g., time-out) to increase compliance. PCIT is performance-based with clearly defined criteria for successful treatment completion. Treatment continues until the child's disruptive behavior is brought within normal limits and parents meet the mastery criteria for CDI and PDI skills. Additionally, treatment does not end until parents express confidence in their ability to manage their child's behavior. Hence, PCIT is not time limited and the number of treatment sessions each family receives can vary widely.

Empirical support for the efficacy of PCIT in children with disruptive behavior problems is based on more than 20 years of research (Cooley, Veldorale-Griffin, Petren, & Mullis, 2014; Thomas & Zimmer-Gembeck, 2007). In the US, PCIT has been identified as an evidence-based and cost-beneficial intervention in child welfare (Lee, Aos, & Pennuci, 2015) and contains all elements recognized by Kaminski et al. (2008) as treatment components with larger effect sizes. For instance, PCIT includes components such as increasing positive parent-child interactions, promoting parental consistency, using time-out, and requiring parents to practice new skills with their child during treatment sessions. In addition, an increasing number of studies have been conducted outside the university clinic, providing evidence on the effectiveness of PCIT in everyday clinical practice within community mental health settings (e.g., Lanier et al., 2011; Lyon & Budd, 2010). Community-based applications of PCIT, however, experience significant problems with treatment retention such as higher treatment attrition rates (over 50%) than those rates reported from the primarily university-based investigations (Fernandez & Eyberg, 2009; Thomas & Zimmer-Gembeck, 2007; Werba, Eyberg, Boggs, & Algina, 2006). Over the past decade, the evidence for the effectiveness of PCIT has also led to increasing international dissemination, where PCIT has demonstrated effectiveness with families from different countries and cultures (Leung, Tsang, Sin, & Choi, 2015; Matos, Bauermeister, & Bernal, 2009; McCabe & Yeh, 2009). To date, PCIT is being implemented in Australia, New Zealand, China (Hong Kong), Japan, South Korea, Taiwan, Germany, Norway, Switzerland, and the Netherlands (McNeil & Hembree-Kigin, 2010). Although there is a wealth of research on the effectiveness of PCIT, most research has been conducted in

the US and little research is available yet from European PCIT implementations. The implementation of PCIT in the Netherlands within a community mental health setting (2007) provided the opportunity to elaborate and replicate findings of previous research on how well PMT programs fit in real-world clinical practice.

Aim and structure of this thesis

This thesis aims to contribute to the international literature on the effectiveness of PMT programs and to bridge the gap between science and clinical practice. The studies in this thesis focus on evaluating the efficacy of a particular PMT program, Parent-Child Interaction Therapy (PCIT), within everyday clinical practice in the Netherlands. Besides the effectiveness trial, the thesis was aimed to answer other research questions that are integral to the dissemination and study of a PMT program within a new country and culture, such as the evaluation of behavioral assessment techniques, treatment retention, and therapist training.

As early prevention of child disruptive behavior disorders is important, screening for early symptoms of child disruptive behavior problems is necessary to identify children at risk. **Chapter 2** describes the psychometric properties of the Dutch translation of the Eyberg Child Behavior Inventory (ECBI) in a community and clinical sample. This ECBI is a widely used parent rating scale in clinical practice and treatment outcome studies to assess child disruptive behavior. Also, the ECBI is weekly used to measure treatment progress within PCIT. In this study, the one-dimensional structure of the questionnaire is investigated and the reliability and validity of the ECBI is examined.

In addition to questionnaires, systematic observational measures of parent-child interactions are considered valuable to guide the course of treatment and measure treatment gains in PMT programs. In **Chapter 3** a study is presented on the utility of a parent-child interaction observation system, the Dyadic Parent-Child Interaction Coding System (DPICS), in the Netherlands. Psychometric properties of the DPICS are examined within a Dutch sample of non-clinical mother-child dyads. Also, DPICS scores from the Dutch sample are compared to those from a non-clinical US sample of mother-child dyads.

Chapter 4 and 5 include treatment evaluation studies on the effectiveness of PCIT in the Netherlands among young children referred for treatment of disruptive behavior problems to a community mental health center (De Bascule). In **Chapter 4** a pilot study is presented that examined the short-term effects of PCIT on reducing the frequency of disruptive behavior in young children. This study also includes a non-clinical comparison group to investigate the development of child disruptive behavior. Subsequently, the effectiveness of PCIT is evaluated using a two-group comparison design with random

assignment. **Chapter 5** describes the outcomes of a randomized controlled trial and a subsequent comparative effectiveness trial on PCIT and Family Creative Therapy (FCT, a literal translation of the Dutch Gezins-Creatieve Therapie; Beelen, 2003). FCT is a Dutch-developed treatment commonly provided in clinical practice, but has not enjoyed the same empirical scrutiny as PCIT. A more detailed description of the treatment approach of FCT is also included in this Chapter.

In order to evaluate other implementation outcomes from the transportation of PCIT from the US to the Netherlands besides treatment effectiveness, **Chapter 6** reports on the rates of treatment retention and factors related to treatment attrition. Predictors for dropouts and barriers to success in PCIT are explored to improve future treatment delivery in everyday clinical practice.

In **Chapter 7** the experiences of the Dutch therapists with the PCIT training and their attitudes on providing this intervention in the Dutch community mental health care are described. The perspectives of the Dutch trainees on the barriers and strengths of the established PCIT training and the PCIT treatment model are explored. In addition, these perspectives are compared with the experiences of trainees from the US to assess the transportability of the training to the Netherlands and the need for cultural adaptation of the training model is investigated.

Finally, in a general discussion (**Chapter 8**) the main findings from the studies reported in the previous Chapters are summarized. Also, the strengths, limitations, and clinical implications of the studies in this thesis are described and recommendations for future studies are provided to improve the effectiveness of PMT programs and to decrease young children's disruptive behavior problems.

Chapter 2

Psychometric properties of the Dutch Eyberg Child Behavior Inventory (ECBI) in a community sample and a multi-ethnic clinical sample

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Frits Boer, & Ramón J. L. Lindauer

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Abstract

The Eyberg Child Behavior Inventory (ECBI) is an established parent rating scale to measure disruptive behavior problems in children aged between 2 and 16 years. The present study examined the psychometric properties of the Dutch translation, including analysis on the one-dimensional structure of the ECBI scales using item response theory. Data from two samples from the Netherlands were used, a community sample ($N = 326$; 51% boys) and a multi-ethnic clinical sample ($N = 197$; 62% boys). The one-dimensional structure of the ECBI Intensity and Problem Scales were confirmed in both of these samples. The results also indicated good internal consistency, test-retest reliability (community sample), and good convergent and divergent validity. The ECBI Intensity Scale was able to differentiate between diagnostic groups (no diagnosis and clinical symptoms of ADHD, ODD, or CD), demonstrating good discriminative validity. Findings support the use of the ECBI as a reliable measure for child disruptive behavior problems in a Dutch population. Suggestions for the optimal use of the both ECBI scales for research and screening purposes are made. Also, cultural issues regarding the use of the ECBI are discussed and additional research into the validity of the ECBI is recommended.

Introduction

Persistently high levels of aggressive, oppositional, and impulsive behavior in young children are serious risk factors for negative developmental outcomes in adolescence and adulthood (Broidy et al., 2003; Burke, Waldman, & Lahey, 2010). If left untreated, disruptive behavior problems in young children can lead to serious difficulties in broad areas of functioning including difficulties in family, peer, school, and community interactions (Broidy et al., 2003). Long-term costs for education, mental health services, justice and social services are estimated at ten times higher for children with disruptive behavior disorders compared to children with no problems (Lee et al., 2012; Scott et al., 2001).

Early interventions are necessary to reduce the risk of serious disruptive behavior in adolescence and adulthood (Aos et al., 2004; Heckman, 2006). Psychosocial interventions are considered the most effective treatment strategy for young children and their parents (Comer et al., 2013; Eyberg et al., 2008), however, to provide such treatment, adequate early screening of behavioral problems in children is necessary. Parent rating scales are the most efficient and commonly used method for screening behavior problems in young children (Funderburk, Eyberg, Rich, & Behar, 2003).

Eyberg Child Behavior Inventory

The Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999) is widely used for early screening of disruptive child behavior within both clinical and research settings. The ECBI is a parent rating scale designed to measure the level of disruptive behavior in children aged between 2 and 16 years. The ECBI has several strengths. Firstly, the ECBI has been shown to be sensitive in measuring the effect of treatment on disruptive behavior problems (Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; Nixon, Sweeney, Erickson, & Touyz, 2004). Secondly, the ECBI is short (36 items) and easy to complete. It contains short and concisely described child behaviors with little room for interpretation, which makes it easy to understand. Contrary to more comprehensive instruments like the 100-item Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000), the ECBI requires less concentration to complete. Therefore, the ECBI is particularly suited for screening in lower educated families. Moreover, the ECBI is unique in its use of two different scales to assess disruptive child behavior: the Intensity Scale (IS) and the Problem Scale (PS). For each item, parents are asked how often their child displays this behavior (IS) and whether or not they find this behavior problematic (PS).

The ECBI has been translated into several languages and is used across the United States (US) and Europe. The ECBI is also used in Japan, South Korea, and China. The reliability and validity of the ECBI is supported in over 20 studies across cultures and countries

(e.g., Funderburk et al., 2003; Sivan, Ridge, Gross, Richardson, & Cowell, 2008). High internal consistency of the two scales (alphas $> .90$) has been demonstrated in several socio-demographic subgroups (Colvin, Eyberg, & Adams, 1999). There is evidence suggesting the ECBI has good test-retest reliability ($r = .75$) over a ten-month period (Funderburk et al., 2003). Normative data from community samples are available (Colvin et al., 1999) and indicate that mean ECBI scores are considerably lower in Northern European countries, including Sweden (ECBI IS mean = 88.2; Axberg, Johansson Hanse, & Broberg, 2008) and Norway (ECBI IS mean = 89.9; Reedtz et al., 2008), compared to the US (ECBI IS mean = 96.6; Colvin et al., 1999).

There is also evidence that the ECBI Intensity Scale correlates strongly with other well-known questionnaires assessing child behavior problems such as the CBCL and the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), suggesting good construct validity. In a non-clinical Swedish sample of children between 3 and 10 years of age correlations between the ECBI Intensity Scale and the total difficulties scale of the SDQ were .68 (Axberg et al., 2008). In a clinically referred US sample of children between 4 and 16 years of age correlations between the ECBI Intensity Scale and the CBCL Externalizing Behavior scale were .75 (Boggs, Eyberg, & Reynolds, 1990). In line with the expectations, correlations with scales measuring internalizing behavior problems were lower than correlations with scales measuring externalizing behavior problems (Axberg et al., 2008; Butler, 2011). With regards to the discriminative validity of the ECBI, in the clinically referred US sample as described by Weis et al. (2005), the Intensity Scale distinguished between groups of children with no significant externalizing problems, children with inattentive and oppositional behavior symptoms, and children with more serious behavioral problems.

Although the ECBI is widely used, and the evidence for validity across countries is strong, no evidence regarding the psychometric properties of the ECBI is available in the Netherlands and most other European countries. Adequate use of the ECBI for screening and treatment evaluation purposes requires knowledge regarding its psychometric properties in a Dutch community and clinical population. The goal of the present study was to examine the psychometric qualities of the ECBI scales in terms of internal consistency, test-retest reliability, reproducibility, convergent, divergent, and discriminative validity. We investigated these psychometric properties in two samples: a community sample and a clinical sample. Considering the international evidence suggesting that the Intensity and Problem Scales of the ECBI have good psychometric properties, we hypothesized that we would find similar results.

Dimensionality of the ECBI

The ECBI is a screening tool with established cut-offs (Eyberg & Pincus, 1999) and is primarily designed to assess a single dimension of disruptive behavior problems (Colvin et al., 1999; Eyberg & Robinson, 1983). However, the ECBI contains items that reflect the symptoms of attention deficit hyperactivity disorder (ADHD), oppositional defiant Disorder (ODD), and conduct disorder (CD) as described by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; American Psychiatric Association, 2013). Evidence regarding the factor structure of the ECBI Intensity Scale is inconsistent. Burns and Patterson (1991, 2000) identified three clinical meaningful dimensions of the ECBI within a community and clinically referred US sample: Inattentive Behavior, Oppositional Defiant Behavior Toward Adults, and Conduct Problem Behavior. These findings suggest that the ECBI can be used to differentiate between behavior disorders within the externalizing behavior spectrum (Weis et al., 2005). This three-factor structure was replicated in several studies including community and clinical samples, and demonstrated both predictive and discriminant validity (Axberg et al., 2008; Weis et al., 2005).

Other researchers, however, failed to replicate these results. Gross et al. (2007) found more support for the validity of the ECBI as a one-dimensional measure for child behavioral problems. More recently, in a community sample, including low-income families from different cultural backgrounds and of different ethnicities, Butler (2011) failed to replicate the results for a three-factor structure of the ECBI and suggested to not use these factors for screening and treatment outcome research.

Previous studies exploring the factor structure of the ECBI used factor analysis. However, factor analysis is correlation-based and strongly dependent on the study sample used. Results may therefore vary from sample to sample. Currently, the three-factor structure of the ECBI is not used in treatment outcome research, and there is still a preference for using the ECBI as a one-dimensional scale for measuring child disruptive behavior (Comer et al., 2013; Michelson et al., 2013). Additional research on a larger sample of children is however needed to shed light on the preferred one-dimensional use of the ECBI Intensity and Problem Scales. The use of a larger sample would provide the opportunity to apply modern methods of scale validation such as Rasch analysis or Item response theory (IRT) analysis, which produce results that are less sample-dependent. In summary, the other goal of the study was to test the one-dimensional structure of the ECBI scales using modern test analysis techniques to provide more information on the dimensional structure of the ECBI.

Methods

Participants and procedure

Two samples were included in the present study, a community sample ($n = 326$) and a clinically referred sample ($n = 197$). Informed consent was obtained from all individual participants included in the study.

Community sample

To assess behavior problems in a community sample, parents were recruited at child daycare centers, primary schools, and through social networks in several regions of the Netherlands. Teachers or daycare workers provided parents with the ECBI and an additional demographic questionnaire was used to obtain background information about the informants and the children in the study. In this sample undergraduate students distributed 555 questionnaires and 183 questionnaires were returned, indicating a response rate of 33.0%. This low response rate could be a consequence of different levels of motivation from teachers. The remaining 143 questionnaires were retrieved following digital distribution, as some schools sent parents an e-mail including a link to complete the questionnaires online. For this sample, however, no response rate was available, because the total number of parents receiving this e-mail was unknown. To assess the test-retest reliability of the ECBI, participating parents were contacted by e-mail to fill out the ECBI again six months later. To motivate the parents to participate for a second time, a gift card was provided as a raffle prize. The response rate for this six-month follow-up was 50.6%.

Attrition analyzes on the non-responders from the assessment of test-retest reliability indicated that parents of children with a non-Western background were less likely to respond at the six-month follow-up, $\chi^2(1) = 9.19, p < .01$. However, no differences between responders and non-responders were found on other demographic characteristics (child age, child gender, rater's gender, and education). The baseline ECBI scores on the Intensity and Problem Scales also did not differ significantly (IS, $t(324) = 1.76, p = .08$; PS, $t(302) = 0.25, p = .80$) between responders and non-responders.

In total, 326 parents (86.8% mothers) of 2 to 8-year old children ($M = 5.5, SD = 1.4$) completed the ECBI. The sample included 165 boys and 161 girls. The classification criteria of Statistics Netherlands (2015a) were used to classify each child's ethnic background resulting in three categories. Most of the children (90.8%) were classified as Dutch, 4.9% were classified as other Western (for example Spanish or French), and 4.3% was classified as non-Western. Parental education was categorized as low (no education or primary education), middle (secondary education), or high (higher academic education)(Statistics Netherlands, 2015b).

Clinical sample

Families were referred or recruited to take part in a parent management training intervention which aimed to help with their child's disruptive behavior problems and were involved in two treatment evaluation studies. Most families ($n = 111$) were referred to mental health services by a general practitioner or a child welfare organization. The other families ($n = 96$) were recruited following an information meeting at their child's school. Families who perceived problems in parenting were asked to participate in the treatment evaluation study. Due to the fact that participation in this group was voluntarily, no refusal rates are available. In the referred group, sixteen families (14%) refused to participate in the study, however, no demographic information is available for this group. A medical ethics committee approved these studies. All participants ($n = 197$) lived in an urban region in the Netherlands. All parents who participated provided informed consent and were contacted to complete a demographic questionnaire, the ECBI, and the SDQ in one sitting prior to beginning treatment. Participants received a small amount of compensation (€10 or €15 gift card) for their participation. Most parents received and returned the questionnaires by post mail, but some parents completed the questionnaires during a home visit by the researcher.

The overall sample consisted of 277 parents and 197 children (122 boys and 75 girls) aged between 2.5 and 8.5 years ($M = 5.5$, $SD = 1.4$). The dates of birth of four children were unknown. For these children we were therefore not able to calculate their exact age. For all children ($N = 197$) the mother was involved in the study. Additionally, for 79 children (40.1%) both parents completed the questionnaires, because the father was also involved in treatment. The sample consisted of participants from a range of ethnic backgrounds, 54.7% of the children were classified as Dutch, 1.8% was classified as other Western and 43.5% was classified as non-Western (mainly Moroccan and Turkish families).

Measures

Eyberg Child Behavior Inventory

The Intensity Scale (IS) and the Problem Scale (PS) of the ECBI (Eyberg & Pincus, 1999) were included in this study. The Intensity Scale measures the frequency of child behavior problems using a 7-point Likert scale (1 = *never* to 7 = *always*) and the overall score reflects the severity of disruptive behavior. The Problem Scale measures parental tolerance for their child's misbehavior, which is measured by asking parents whether or not they view each of the described behaviors as problematic, using a dichotomous scale (1 = *yes*, 0 = *no*). The Dutch ECBI was translated and back-translated which resulted in a final version being approved by Psychological Assessment Resources (PAR). In the clinical sample, participant level data from the two treatment evaluation studies were pooled

and two slightly different versions of the Dutch ECBI translations were used (i.e., minor differences in the wording of 12 of the 36 items). For example, item 11 (*Argues/Discusses with parents about rules*). Considering that differences were minor and preliminary analyzes revealed no impact, we can assume that there were no effects of combining these two versions for the current study.

Strengths and Difficulties Questionnaire

All parents in the clinically referred sample filled out the Strengths and Difficulties Questionnaire (SDQ), a brief 25-item questionnaire which assesses emotional and behavior problems in children from 3 to 16 years of age (Goodman, 1997). The SDQ contains three response categories (0 = *not true*, 1 = *somewhat true* and 2 = *certainly true*) and has a Total Difficulties scale. The SDQ consists of five subscales all containing the sum of five items. In the current study the internal consistencies (Cronbach's alphas) for all SDQ scales when completed by mothers were $\alpha = .66$ (Emotional Symptoms), $\alpha = .57$ (Conduct Problems), $\alpha = .79$ (Hyperactivity/Inattention Problems), $\alpha = .34$ (Peer Problems), and $\alpha = .73$ (Prosocial Behavior). The internal consistencies for the scales when completed by fathers were comparable and ranged between $\alpha = .37$ (Peer Problems) and $\alpha = .78$ (Hyperactivity/Inattention Problems). Similar to the study of Axberg et al. (2008), the SDQ scale for conduct problems (SDQ-CON) and the scale for hyperactivity and impulsiveness (SDQ-HYP) were converted into a pooled scale (SDQ-CON+HYP). This allowed for a comparison of the ECBI items, which were included in both scales.

Symptoms for clinical diagnosis

For most children in the clinically referred sample ($n = 137$) a diagnostic assessment was conducted as part of the baseline assessment for the treatment evaluation study. For some families no diagnostic information was collected due to differences in clinical practice or practical issues, for example some families were not reached for the diagnostic interview before the start of treatment. Children were assessed for the presence of attention or hyperactivity problems, oppositional defiant behavior, and conduct problem behavior based on the diagnostic criteria of the DSM-IV (American Psychiatric Association, 2000). Trained clinicians and psychiatrists administered these interviews and observations.

Statistical analyzes

All analyzes were performed in SPSS version 19 or 21. Parents who did not complete all of the ECBI items (missing ≥ 4 items per scale) were excluded from the study, as is advised in the professional manual by Eyberg and Pincus (1999). In total, 7 children were excluded from the community sample and 28 children were excluded from the clinical sample. Chi-square tests revealed no differences in demographic characteristics between participants who had incomplete questionnaires and those with less than 4 missing items

or no missing items. Also, as described in the manual guidelines, missing values were replaced with 1 (*Never*) for the Intensity Scale and 0 (*No*) for the Problem Scale (Axberg et al., 2008; Eyberg & Pincus, 1999). The most common missing items were item 25 and item 27 (*Verbally / physically fights with sisters and brothers*), because these questions were not applicable for parents with just one child.

In the community sample, 25 families had one or two missing items which were replaced, and in the clinical sample 24 families had one, two, or three missing items which were replaced. Preliminary analyzes with the participants who had complete ECBI's revealed no influence of the item replacement on the internal consistency and mean ECBI scores. Chi-square tests and one-way ANOVAs also revealed no significant differences in the demographic characteristics of the parents and children who had complete questionnaires and those who did not.

Statistical analyzes were performed in three stages. First, the one-dimensional structure of the ECBI scales was tested in order to allow for exploration of the other psychometric properties of the ECBI in the appropriate scales. The dimensionality of the ECBI scales was examined using item statistics, including item-total correlations and internal consistency (Cronbach's alphas). An exploratory factor analysis (EFA) was conducted as a preliminary analysis in order to examine the dimensional structure of the ECBI scales. Factors were extracted via principal axis factoring with oblique rotation. Oblique rotation was chosen, because it was expected that the factors measuring externalizing behavior would be correlated (Nolan, Gadow, & Sprafkin, 2001). The EFA was run without specifying the number of factors. Factor loadings, scree plots, and eigenvalues using the Kaiser-Guttman rule (Fabrigar, Wegener, MacCallum, & Strahan, 1999) were examined and a parallel analysis (Horn, 1965) was conducted to determine if the ECBI contained a dominant first factor.

Subsequently, item response theory methods, a specific extension of the Rasch measurement model (Verhelst & Glas, 1995; Verhelst, Glas, & Verstalen, 2005) were used to confirm the one-dimensional structure of the ECBI Intensity and Problem Scales. This method requires a large number of observations (preferably > 300). Therefore, the community and clinical sample were combined for these analyzes. The item scores on the community sample also showed too limited variation to perform a meaningful IRT analysis with this sample alone. Contrary to the basic Rasch model (1960) that assumes equal discriminative capacities for each test item, the extension of this model, the one-parameter logistic model (OPLM), allows individual items to vary by assigning item weights according to their capacity to discriminate between individuals on their level of problem behavior. Weights may vary between 1 (low discriminative capacity of an item)

to 5 (very high discriminative capacity of an item). Like the basic Rasch model, OPLM requires the answer categories of the scales to have a dichotomous structure. Dichotomization was appropriate for this data, because a rating scale analysis showed disordered rating scale categories. For example, higher item categories showed lower item threshold difficulties than lower adjacent categories for many items. Hence, ECBI Intensity Scale items were first dichotomized into two categories indicating a low and high frequency of a specific problem behavior. In order to have an adequate distribution between categories and based on the distribution of the data, it was chosen to classify an item score of 1, 2, and 3 as 0 (*low*) and an item score of 4, 5, 6, and 7 as 1 (*high*). Conditional maximum likelihood estimation methods were used to estimate the item and person parameters for the ECBI scales. Item fit to the OPLM model (after testing fit to the basic Rasch model) was tested using item-oriented fit statistics (S tests) that examine observed and expected numbers with a given item score conditional on the problem behavior level as measured with the ECBI. Overall goodness of fit of all item responses to the one-dimensional model was tested with the R1c statistic, a chi-square based test using $p > .05$ as a criterion for model fit, meaning that the observed item responses do not differ significantly from the expected item responses in the one-dimensional model.

After testing for the one-dimensional structure, additional psychometric properties were examined in both the community and clinical samples. These analyzes included correlations, and the calculation of the ECBI Intensity and Problem Scale means for the total samples and subgroups. Differences between groups were examined using *t*-tests and one-way ANOVAs. The reproducibility of the ECBI items score from the test-retest reliability assessment was evaluated using quadratic weighted kappa coefficients for the ordinal structure of the ECBI Intensity Scale and unweighted kappa coefficients for the dichotomous structure of the ECBI Problem Scale. Additionally, the reproducibility of the ECBI sum scores (total Intensity Scale and Problem Scale) was evaluated using intraclass correlations, using a two-way mixed model (Fleiss & Cohen, 1973).

Finally, the discriminative validity was evaluated in the clinical sample to test the ability of the ECBI Intensity and Problem Scales to discriminate between significant DSM-IV symptoms with regards to ADHD, ODD, and CD. One-way ANOVAs were used to evaluate differences in mean scores between these diagnostic groups.

Results

Dimensionality of the ECBI scales

The internal consistency (Cronbach's alphas) of the ECBI scales was high in both the community sample (COS) (IS & PS, $\alpha = .93$) and the clinical sample (CLS) (IS, $\alpha = .93$; PS, $\alpha = .91$). Also, coefficients of the father reports in the clinical sample were almost equal (IS, $\alpha = .93$; PS, $\alpha = .92$). The corrected item-total correlations indicated similar results in both samples, with coefficients for the ECBI Intensity and Problem Scales ranging from 0.09 (item 36, *Wets the bed*) to 0.73 (item 9, *Refuses to obey until threatened with punishment*). The median of these scores ranged from 0.46 (CLS-PS) to 0.55 (CLS-IS), indicating an overall satisfactory item-total correlation.

Subsequently, the EFA on the ECBI Intensity Scale revealed a dominant first factor, which explained 30.7% of the variance in the community sample and 32.1% of the variance in the clinical sample. The eigenvalue analysis identified 9 factors in both samples with eigenvalues > 1 . The percentage of explained variance for the 8 additional factors ranged from 2.8 to 7.4. A parallel analysis extracted 10 factors in the community sample and 6 factors in the clinical sample. In both samples, however, a dominant first factor was identified based on the raw data eigenvalues (for example, 11.2 for the first factor compared to 2.1 for the second factor in the clinical sample). The EFA of the ECBI Problem Scales revealed similar results. For this scale a dominant first factor was also found explaining 30.0% of the variance in the community sample and 25.3% of the variance in the clinical sample. Eleven factors with eigenvalues > 1 were identified in the community sample compared to 10 for the clinical sample. Again for this ECBI Problem Scale these additional factors had low percentages of unique explained variance ranging from 2.8 to 7.6. The parallel analysis also revealed a high number of factors for both community (19) and clinical samples (9), however, based on the raw data eigenvalues for the ECBI Problem Scale a dominant first factor was again identified.

In general, factor loadings of the ECBI Intensity and Problems Scale items on the first dominant factor were satisfactory and ranged from 0.09 (item 36, *Wets the bed*) to 0.76 (item 10, *Acts defiant when told to do something*). The median factor loading scores ranged from 0.50 (CLS-PS) to 0.59 (CLS-IS). In both samples ECBI Intensity and Problem Scales factor loadings for item 36 (*Wets the bed*) were low (< 0.25). Item 21 (*Steals*) had poor factor loadings (< 0.30) on the ECBI Intensity Scale. Figure 2.1 and 2.2 present the scree plots for the ECBI scales which also confirm the presence of one dominant factor. Therefore, we used the Rasch model to further investigate the one-factor structure of the ECBI Intensity and Problem Scales.

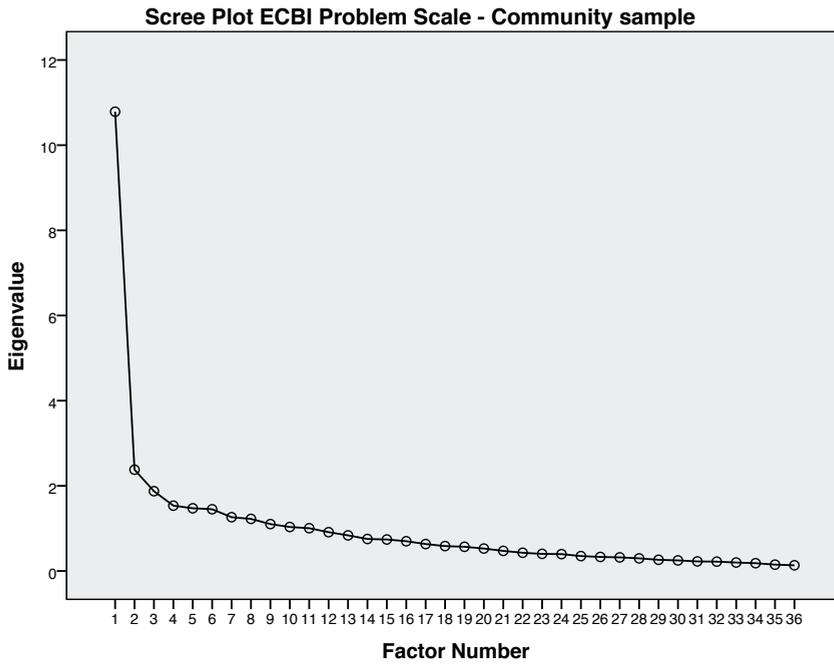
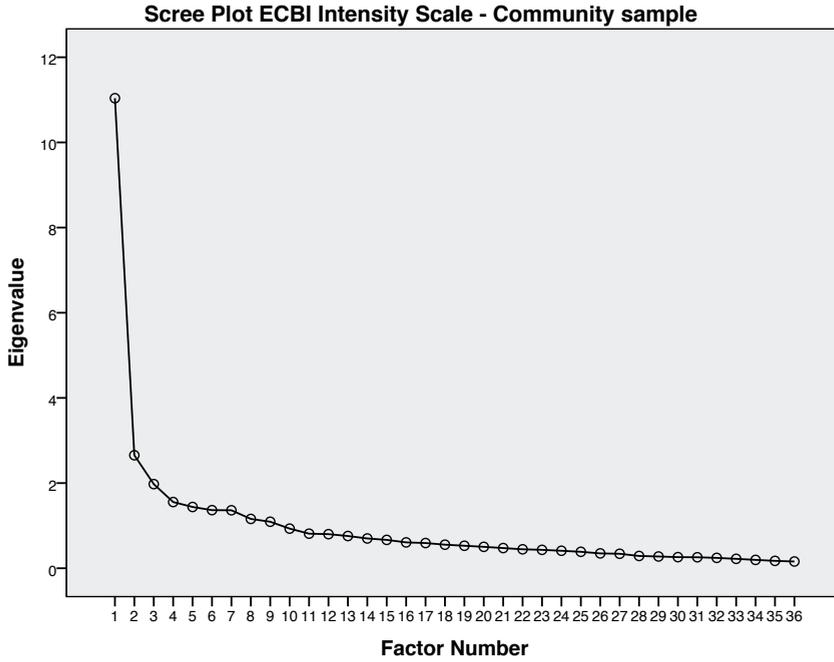


Figure 2.1. Scree plots ECBI Intensity and Problem Scale for Community sample.

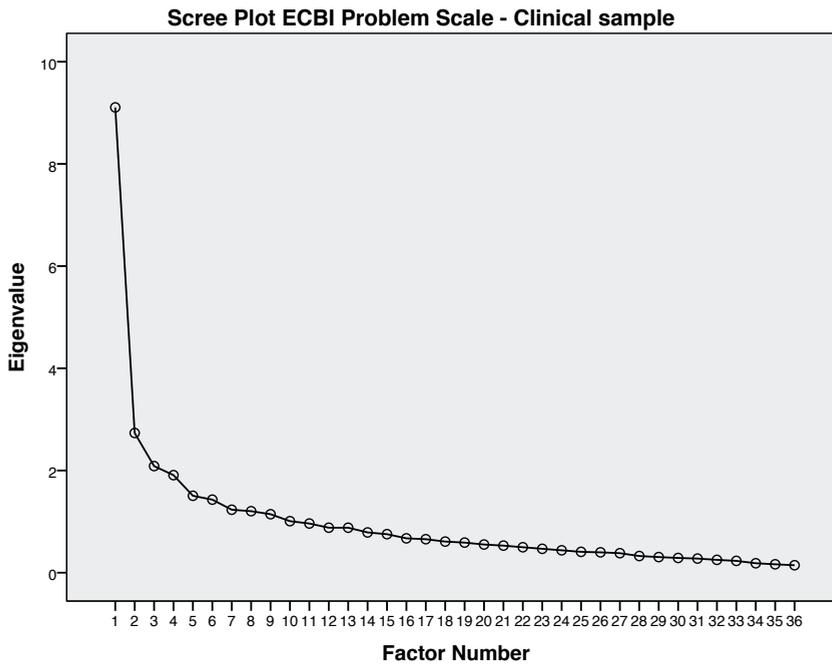
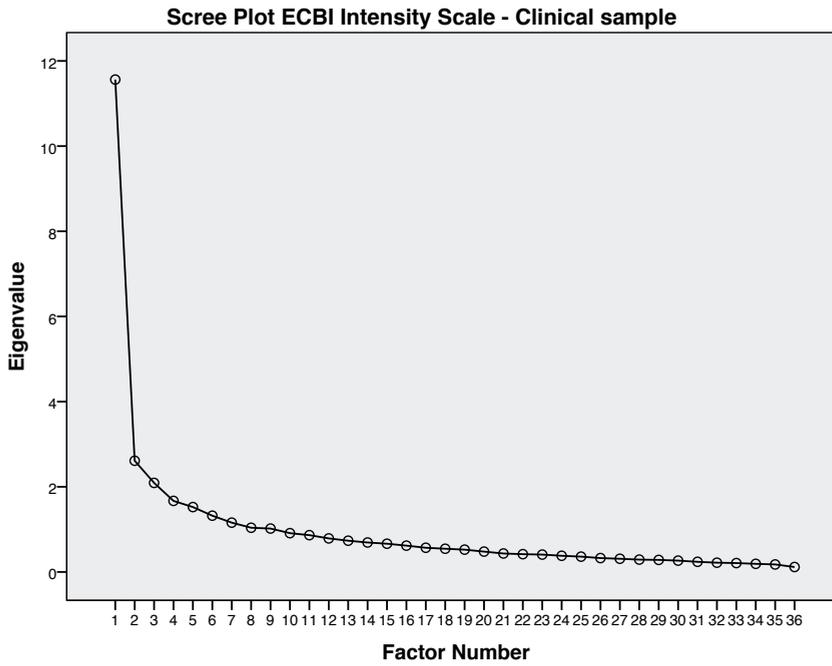


Figure 2.2. Scree plots ECBI Intensity and Problem Scale for Clinical sample.

The community and clinically referred sample data were combined to conduct the Rasch analysis resulting in a total sample size of $N = 514$ for the ECBI Intensity Scale and $N = 481$ for the ECBI Problem Scale. The initial Rasch analysis revealed insufficient item fit of the ECBI scales to the model. Additionally, the extension of the Rasch model (OPLM) was conducted, allowing the items to differ in their discriminative capacity. Items were weighted for their ability to discriminate between individual participants on their level of problem behavior on the ECBI scales. After weighting the items, there was good overall fit on the OPLM for both ECBI scales. The observed and expected scores using the model were similar. The R1c goodness of fit statistic for ECBI Intensity Scale was $\chi^2(105) = 115.1$, $p = .24$. For the ECBI Problem Scale the R1c statistic was $\chi^2(105) = 83.6$, $p = .94$. These results indicate that the 36 items of the ECBI Intensity and Problem Scale constitute one dimension. Using the OPLM, items can be weighted for their impact. Table 2.1 presents the weights for the specific items of the ECBI scales. For the ECBI Intensity Scale item 13 (*Has temper tantrums*) and item 19 (*Destroys toys and other objects*) were classified with the highest weights (5). This indicates that when a parent scores 4, 5, 6, or 7 (after dichotomization 1) on these specific items, a higher total score of problem behavior is expected. For the ECBI Problem Scale items 8 (*Does not obey house rules on own*), 10 (*Acts defiant when told to do something*), and 11 (*Argues with parents about rules*) had the highest weights.

Table 2.1

Classification of proposed weighted scores per item for the ECBI Intensity and Problem Scale based on the extended Rasch model (OPLM) outcomes

Weights	Intensity Scale Item	Problem Scale item
1.	2, 36	2, 36
2.	1, 4, 6, 7, 16, 21, 25, 26, 27	1, 4, 16, 22, 33
3.	3, 5, 12, 15, 18, 20, 22, 23, 24, 32, 33	3, 5, 6, 7, 15, 18, 20, 21, 23, 24, 25, 27, 28, 29, 30, 32, 34, 35
4.	8, 9, 10, 11, 14, 17, 28, 29, 30, 31, 34, 35	9, 12, 13, 14, 17, 19, 26, 31
5.	13, 19	8, 10, 11

Note. After dichotomization of the ECBI Intensity Scale into 0 and 1 and using these weights a maximum of 111 can be scored. For the ECBI Problem Scale a maximum of 113 can be scored.

Psychometric properties

Descriptive statistics

In both the community and clinical samples the correlations between the ECBI Intensity and Problem Scale were significant; COS reports ($r(304) = .62$, $p < .001$), CLS mother reports ($r(175) = .75$, $p < .001$), CLS father reports ($r(73) = .67$, $p < .001$). Respectively, they shared 38%, 45%, and 56% of the variance, indicating a moderately strong correlation. In the community sample, standardized positive values for skewness and kurtosis were significant on both the ECBI Intensity and Problem Scales, indicating a non-normal distribution

of the scales. For the clinical sample, for mother and father reports, these values revealed a normal distribution.

Table 2.2 shows the mean scores for the ECBI Intensity and Problem Scales for both samples, organized by children's age, gender, and ethnicity, and informant's gender and educational level. Subgroup analyzes revealed significant gender differences (boys had higher scores than girls) on the ECBI Intensity Scale in the community sample, $t(324) = 2.32, p = .02$, and on the ECBI Problem Scale in the clinical sample, $t(175) = 2.50, p = .01$. The effect sizes for these differences were small (COS, $d = .26$; CLS, $d = .38$). Additionally, in the clinical sample one-way ANOVAs revealed a significant effect for child ethnicity

Table 2.2

Mean and standard deviations of ECBI Intensity and Problem Scale scores for the Community sample and Clinical sample organized by subgroups

	Community sample ($N = 326$)				Clinical sample ($N = 197$)			
	Intensity score		Problem score		Intensity score		Problem score	
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>
Child age								
2-5	149	86.1 (24.4)	141	4.0 (6.0)	118	129.9 (34.5)	110	15.3 (8.5)
6-8	177	84.3 (23.5)	163	4.2 (6.1)	72	130.2 (34.7)	64	15.6 (9.0)
Child gender								
Girl	161	82.0 (23.7) ^a	151	3.9 (6.0)	74	124.2 (33.8)	70	13.5 (8.4) ^b
Boy	165	88.1 (23.7) ^a	153	4.4 (6.1)	119	133.6 (34.2)	107	16.7 (8.6) ^b
Child Ethnicity								
Dutch background	296	85.5 (24.4)	277	4.1 (6.1)	92	142.1 (31.1) ^c	83	16.9 (7.5)
Western background	16	84.9 (19.1)	16	4.6 (4.7)	3	144.0 (24.6)	3	21.3 (4.2)
Non-Western background	14	76.6 (15.9)	11	5.6 (7.5)	73	119.3 (32.0) ^c	66	14.7 (9.3)
Informant								
Mother	283	85.3 (24.5)	263	4.3 (6.2)	193	130.0 (34.3)	177	15.4 (8.6)
Father	43	83.7 (19.4)	41	3.2 (4.5)	81	134.2 (32.1)	73	16.5 (8.9)
Informant's Education								
Low	1	120	1	16	20	113.3 (33.4)	19	14.6 (8.8)
Middle	128	83.3 (26.4)	117	4.3 (6.7)	100	135.6 (33.2)	90	16.5 (8.4)
High	197	86.1 (22.0)	186	4.0 (5.6)	41	135.4 (32.0)	39	15.1 (8.6)
Total								
Baseline assessment	326	85.1 (23.9)	304	4.1 (6.0)	193	130.0 (34.3)	177	15.4 (8.6)
Six-month follow-up	165	88.1 (25.9)	156	4.3 (6.0)	-	-	-	-

Note. Scores for the community sample include both mother or father reports. Scores for the clinical sample were based on mothers reports, except for the informant category, father scores are based on the same children; Means in the same column having the same superscript are significantly different at $p < .05$.

on the mother ECBI Intensity Scale, $F = (2,165) 10.88, p < .001$. Mothers of children with a Dutch background reported a higher frequency of behavior problems than mothers of children of a non-Western background.

Informant differences in clinical sample

Both parents of 79 children completed the ECBI. Significant correlations were found between mother and father reports for the Intensity Scale ($r(79) = .57, p < .001$) and Problem Scale ($r_s(73) = .49, p < .001$). No significant effect of the informant's gender was found for the total clinical sample, however, a paired sample t -test for the group with the mother and father reports ($n = 79$) revealed a significant difference, $t(78) = 2.18, p = .03$, for the Intensity Scale. Mothers reported a higher frequency of their child's behavior problems than fathers (mothers, $M = 142.1, SD = 31.3$; fathers, $M = 134.9, SD = 32.2$). No significant differences were found on the Problem Scale (mothers, $M = 16.7, SD = 8.3$; fathers, $M = 16.8, SD = 8.6$).

Reproducibility in the community sample

Test-retest reliability was calculated for the 165 children in the community sample for whom the ECBI was completed at baseline and again six months later. Significant correlations between baseline and follow-up assessments were found for the Intensity Scale ($r(165) = .84, p < .001$) and Problem Scale ($r_s(156) = .60, p < .001$). Paired t -tests revealed a stable pattern of behavior over time for both scales (IS, $t(164) = -.63, p = .53$; PS, $t(155) = -.16, p = .87$). The reproducibility of the items and scale scores using weighted kappa and intraclass correlations are presented in Table 2.3. Kappa coefficients of the individual items indicated moderate to high reproducibility over six months. Weighted kappa coefficients ranged from 0.39 (item 21, *Steals*) to 0.76 (item 36, *Wets the bed*) for the ECBI Intensity Scale. The unweighted kappa for the ECBI Problem Scale ranged from 0.25 (item 8, *Does not obey house rules on own*) to 0.56 (item 31, *Has short attention span*). Although some individual items had slightly lower kappa coefficients indicating moderate reproducibility, the intraclass correlations (ICC) between the baseline and follow-up assessments for the ECBI Intensity and Problem Scales were generally high (Table 2.3).

Convergent and divergent validity in the clinical sample

To examine the convergent and divergent validity of the ECBI scales in the clinical sample, correlations were calculated between the scores from the ECBI scales and the scores from the SDQ scales (see Table 2.4). The pattern of the correlation coefficients with regards to convergent validity were as hypothesized. The convergence between the ECBI Intensity Scale and the SDQ Conduct Problem and Hyperactivity/Impulsiveness scales ranged from $r_s = .46$ to $.75$. For the ECBI Problem Scale the convergence with these scales ranged from $r_s = .36$ to $.62$.

Table 2.3*Reproducibility of the item and total scale scores for the ECBI scales for the Community sample*

	Intensity Scale (<i>n</i> = 165) <i>Weighted Kappa</i>	Problem Scale (<i>n</i> = 160) <i>Unweighted Kappa</i>
1. Dawdles in getting dressed	0.66	0.39
2. Dawdles or lingers at mealtime	0.58	0.50
3. Has poor table manners	0.59	0.52
4. Refuses to eat food presented	0.67	0.48
5. Refuses to do chores when asked	0.49	0.31
6. Slow in getting ready for bed	0.60	0.53
7. Refuses to go to bed on time	0.47	0.41
8. Does not obey house rules on own	0.49	0.25
9. Refuses to obey until threatened with punishment	0.65	0.48
10. Acts defiant when told to do something	0.54	0.38
11. Argues with parents about rules	0.53	0.43
12. Get angry when doesn't get own way	0.58	0.45
13. Has temper tantrums	0.65	0.47
14. Sasses adults	0.57	0.36
15. Whines	0.49	0.38
16. Cries easily	0.71	0.46
17. Yells or screams	0.70	0.51
18. Hits parents	0.66	0.30
19. Destroys toys and other objects	0.65	0.53
20. Is careless with toys and other objects	0.56	0.35
21. Steals	0.39	0.53
22. Lies	0.51	0.38
23. Teases or provokes other children	0.64	0.54
24. Verbally fights with friends own age	0.58	0.34
25. Verbally fights with sisters and brothers	0.66	0.45
26. Physically fights with friends own age	0.53	0.34
27. Physically fights with sisters and brothers	0.59	0.42
28. Constantly seeks attention	0.67	0.46
29. Interrupts	0.50	0.26
30. Is easily distracted	0.66	0.41
31. Has short attention span	0.67	0.56
32. Fails to finish tasks or projects	0.71	0.39
33. Has difficulty entertaining self alone	0.69	0.36
34. Has difficulty concentrating on one thing	0.73	0.47
35. Is overactive or restless	0.63	0.46
36. Wets the bed	0.76	0.38
Intraclass correlation (ICC)	0.84	0.74

Note. Kappa coefficients and Intraclass correlations for the community sample were calculated using baseline and follow-up scores.

For all scales, correlations were lower between measures completed by fathers than those completed by mothers. Mothers were more likely to report similar behavior problems on the ECBI and SDQ than fathers. As expected, Table 2.4 shows higher correlations for the externalizing behavior SDQ scales compared to the SDQ Emotional Symptoms Scale ($r_s = .12$ to $.37$) and the SDQ Peer Problems Scale ($r_s = .03$ to $.14$). Also, the ECBI scales (and in particular the IS) were negatively correlated with the SDQ Prosocial Behavior Scale ($r_s = -.10$ to $-.44$).

Table 2.4

Correlations between ECBI Intensity and Problem Scales and SDQ Scales in the Clinical sample

	Strengths and Difficulties Questionnaire (SDQ)							
	<i>n</i>	TOT	CON	HYP	CON+HYP	EMO	PEER	PRO
ECBI Mother reports								
Intensity	192	0.67	0.65	0.63	0.75	0.26	0.13 ^{ns}	-0.44
Problem	176	0.62	0.53	0.46	0.63	0.37	0.14 ^{ns}	-0.19 ^{ns}
ECBI Father reports								
Intensity	79	0.54	0.57	0.48	0.62	0.19	0.09 ^{ns}	-0.39
Problem	71	0.40	0.46	0.36	0.50	0.12 ^{ns}	0.03 ^{ns}	-0.10 ^{ns}

Note. *TOT* SDQ total difficulties scale; *CON* SDQ conduct problems scale; *HYP* SDQ hyperactivity/ inattention scale; *CON+HYP* pooled SDQ conduct problems and SDQ hyperactivity/inattention scale; *EMO* SDQ emotional symptoms scale; *PEER* SDQ peer problems scale; *PRO* SDQ prosocial behavior scale.

All correlations without a superscript were significant at $p < .001$; ^{ns} = no significant correlation.

Discriminative validity in the clinical sample

Diagnostic information was available for 137 children (70%). Fifty-one children (37.5%) had no symptoms that met the criteria for a disruptive behavior disorder. Based on DSM-IV criteria, 32 children (23.4%) were classified with significant attention deficit hyperactivity disorder symptoms (ADHD), nine children (6.6%) were classified with significant oppositional defiant disorder symptoms (ODD), and two children (1.5%) with conduct disorder symptoms (CD). Thirty-one children (22.6%) had both significant ODD and ADHD symptoms, two children had significant ODD and CD symptoms, and two children had both significant ADHD and CD problems. In eight children (5.8%) significant symptoms of all three disorders (ADHD, ODD & CD) were found.

To assess the ability of the ECBI Intensity and Problem Scales to differentiate between different behavioral disorders within the externalizing problems spectrum, mean scores for each diagnostic group were calculated (Weis et al., 2005). As a consequence of incomplete diagnostic data, children with no diagnostic information were excluded from these analyzes. Children who met criteria for more than one DSM-IV disorder (ADHD, ODD & CD) were classified into the highest severity group. Severity ranges were assigned based

on existing literature (Ross et al., 1998) with severity increasing from ADHD to ODD, and finally to CD as the most severe disorder. Mean scores for the ECBI Intensity and Problem Scales are presented in Table 2.5. One-way between-groups analyzes of variance (ANOVAs) revealed significant differences between diagnostic groups on the ECBI Intensity Scale $F(3, 119) = 29.81, p < .001$ and ECBI Problem Scale $F(3, 119) = 16.67, p < .001$. Post-hoc comparisons showed significant differences on both ECBI scales for children with no diagnosis and children with significant DSM-IV externalizing behavior symptoms. The ECBI Intensity Scale distinguished between three groups, based on the presence of symptoms: (1) children without significant externalizing symptoms, (2) children with significant ADHD symptoms, and (3) children with significant ODD and CD behavior symptoms. The ECBI Problem Scale was not able to differentiate between the different behavioral disorders within the externalizing problems spectrum, but it could differentiate between children with and without clinical significant symptoms of ADHD, ODD, or CD.

Table 2.5

Means and standard deviations of ECBI Intensity and Problem Scale by clinician assessed significant DSM-IV symptoms (n = 137)

	Clinician assessed symptoms			
	No diagnosis (n = 51) M (SD)	ADHD (n = 32) M (SD)	ODD (n = 39) M (SD)	CD (n = 14) M (SD)
ECBI Mother reports				
Intensity	111.4 (24.4) ^a	134.4 (23.6) ^b	157.4 (28.3) ^c	162.3 (24.7) ^c
Problem	10.7 (7.4) ^a	16.5 (7.4) ^b	20.4 (6.9) ^b	23.0 (5.4) ^b

Note. Results in this table are mother reports from the clinical sample. Scores in the same row having an identical superscript are not significantly different at $p < .05$.

Discussion

The purpose of the current study was to investigate the psychometric properties of the ECBI in Dutch children. The dimensionality, internal consistency, test-retest reliability (reproducibility), convergent, divergent, and discriminative validity were examined and our results provide evidence for good psychometric qualities of the ECBI in the Netherlands. This is in line with our hypotheses and the previous findings from other international studies.

Findings from this study confirm the one-dimensional structure of the ECBI Intensity and Problem Scales when measuring overall child disruptive behavior in a Dutch community and clinical population. These findings were supported by both classic psychometric tests

(e.g., exploratory factor analyzes, internal consistency) and modern psychometric tests (Rasch analysis, OPLM). Results confirm the use of the preferred one-factor scale in treatment outcome studies when compared to the three-factor structure. Due to the fact that these modern test analysis techniques are less dependent on sample characteristics, the generalizability of these results is high. These findings also support the use of the ECBI for screening and assessment purposes, because the ECBI Intensity and Problem Scales were able to discriminate between children with and without clinical significant symptoms of ADHD, ODD, or CD.

Good convergent and divergent validity of the ECBI Intensity and Problem Scales were found with the SDQ in the clinical sample. This is similar with results found by Axberg et al. (2008) in a Swedish community sample. Also, our findings correspond with those of other studies which examined the correlations of the ECBI Intensity Scale and Problem Scale with other scales for child behavior problems (e.g., Boggs et al., 1990; Funderburk et al., 2003). The strong correlations between the Intensity and Problem Scales (ranging from .62 to .75) found in the present study, the similar pattern of correlations found for the construct validity, and the similarity of the patterns over different informants (mothers and fathers), raise questions about the usefulness of keeping both ECBI scales separate. Given the parsimony criteria, it can be suggested to combine both scales into a single scale. In contrast with this suggestion, Eyberg (1992b) stressed the importance of both ECBI scales which measure related but also include distinct dimensions of disruptive behavior in children. Eyberg (1992b) suggested that parental perceptions are the underlying construct of the development of the separate scales. The ECBI Intensity and Problem Scales may be especially useful in regard to parental tolerance (McMahon & Frick, 2007). Parents with a low Intensity score in conjunction with a high Problem score may indicate high parenting stress or intolerance with the child's behavior. On the other hand, parents with a high Intensity score and a low Problem score have a high tolerance level or are reluctant to acknowledge the behavior problems of their child. Although the ECBI scales can be useful with respect to parental perceptions, future research should study the added value of using both scales in treatment effectiveness research and screening proposes. Using additional measures to assess child behavior problems such as observational measures in combination with a questionnaire assessing parental distress and perceptions, like the Parenting Stress Index (PSI; Abidin, 1995) is recommended.

Findings regarding informant differences were contradictory to previous research (Colvin et al., 1999). In our clinical sample, mothers reported higher frequencies of disruptive behavior problems than fathers, for the same child. A possible reason for the tendency of mothers to report higher frequencies of child disruptive behavior is the mother's role as primary caregiver. Due to the fact that mothers spend more time with their children,

higher reported frequencies may be a consequence of more exposure to the problem behavior of the child (Billler, 1993). Another possible reason for the discrepancies between the mother and father reports could be differences in the child's behavior in the presence of the parents. It has been previously found that behavior problem children are more likely to comply when with their fathers (Campbell, 2006; Patterson & Maccoby, 1980). Fathers may, therefore, rate their children's problem behavior as less frequent.

Implications

These results suggest the possibility of weighing items when using them for screening purposes. If parents report a high frequency of a specific behavior on an item with a high weight (for example item 13, *Has temper tantrums*), this child is likely to have a high total score on the ECBI Intensity Scale. Asking parents about the frequency of their child's temper tantrums would be an easy way to identify young children at risk for severe disruptive behavior problems and then refer these families for preventive treatment. This is, however, a new direction with regards to the use of the ECBI scales, and further research on this item weighting system is needed.

Considering the suggestions made by Axberg et al. (2008), minor changes are suggested in the Dutch ECBI version. For example, a checkbox for the sibling items (25 & 27), where a rater can indicate whether these questions are applicable to their child, would be useful. This would result in fewer missing items. Additionally, the low item statistics on item 36 (*Wets the bed*) suggests that further explanation of this specific item would be helpful and a checkbox may again be useful. Then raters can indicate whether this question is applicable to the child, for example some children still wear a diaper during the night. These suggested changes might, however, affect the total ECBI Intensity and Problem scores, and therefore further consideration on the changes is required.

Finally, with regards to the normative data, the ECBI Intensity and Problem Scale means for the total community sample were significantly lower than the US norms found by Colvin et al. (1999) (IS, $t(604) = 5.83, p < .001$; PS, $t(582) = 4.02, p < .001$). This finding is similar to those found in other northern or Western European studies which have explored ECBI norms (Axberg et al., 2008; Reedtz et al., 2008). Reconsideration of the ECBI Intensity and Problem Scale cut-off points may also be helpful with regards to clinical assessment and treatment outcome studies.

Strengths and limitations

Our study has several strengths. Firstly, the inclusion of both a community and clinical sample provided information about different populations, which contributed to the generalizability of the study results within a Dutch population. Secondly, the multi-ethnic

clinical sample was representative of the composition of other populations in other urban regions in Western European countries. Thirdly, the use of modern test analysis techniques, which are less dependent on the specific characteristics of the samples, are an important strength with regards to the generalizability of the study results on the one-dimensional structure of the ECBI.

However, this present study has a number of limitations. First, in the community sample fewer children from ethnic minority groups were included and the response rate was partly unknown. The response rate was therefore small and the attrition rate (49%) for the six-month test-retest was high. Consequently, there is a lack of information about the generalizability of our findings, especially on the mean scores. Additional research on the psychometric properties and the mean scores in a multi-ethnic community sample with more focus on the response rate and the prevention of attrition is therefore recommended. Furthermore, in comparison with the clinical sample, the ECBI scales were not normally distributed in the community sample. However, non-normal distributions of scores are common in community samples because low answer categories (*never*) are chosen more frequently. As a consequence of the limited variation in the community sample and the relatively small sizes of the samples, we chose to combine data from both samples in the IRT analysis.

A final limitation is the way in which the clinical diagnoses were conducted by trained clinicians. Children in the clinical sample were from different child mental health centers. Although all clinicians used structured interviews according to DSM-IV criteria, no standardized procedure was used to assess the significant symptoms of ADHD, ODD, and CD in the Dutch children. We have therefore chosen to use the term classifications rather than diagnoses. Nevertheless, results regarding the classifications should be interpreted with caution, as is common practice in Dutch clinical practice.

Conclusion

The results of the current study provide evidence that the ECBI is a psychometrically sound measure for indicating disruptive behavior problems in children in the Netherlands. Data suggests that the ECBI Intensity and Problem Scales are internally consistent and appropriately correlated with another well-established questionnaire (SDQ). The ECBI Intensity Scale is also able to differentiate between diagnostic groups within the externalizing behavior spectrum. Based on the evidence found for the one-dimensional structure of the ECBI, the original defined ECBI Intensity and Problem Scales are useful for screening and intervention research purposes in a Dutch population. The use of weighted items could also improve the use of the ECBI for screening purposes and clinical research, but further investigation on this new area is recommended.

Chapter 3

Transporting assessment techniques across countries: Psychometric properties of the Dyadic Parent- Child Interaction Coding System in the Netherlands

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Abstract

Standardized behavioral observations of parent-child interactions are important measures for research and clinical purposes in parent management training (PMT) programs. As PMT programs are increasingly being transported to countries outside of the ones in which they were developed, the related assessment measures are also being transported. We explored the psychometric properties of the parent-child interaction observation system, the Dyadic Parent-Child Interaction Coding System (DPICS) in the Netherlands. Participants included 31 non-clinical Dutch mother-child dyads and 86 US mother-child dyads (2-7 years; 50% boys). Good one-week test-retest reliability was demonstrated among the Dutch sample. Similarities were found between Dutch and US samples on most interaction codes, but also showed more controlling behavior of US mothers. Findings suggest that the DPICS is a reliable measure of mother-child interactions in the Dutch population. Cultural issues regarding the use of the DPICS are discussed and additional research into the validity of the DPICS in clinical populations is recommended.

Introduction

Parent management training (PMT) programs, which focus on parenting skills and behaviors as a means of changing child behavior (Kazdin, Siegel, & Bass, 1992), often emphasize consistent, systematic assessment of parent-child interactions across the span of treatment. The use of structured measures of parent-child interactions can guide the course of the intervention and measure treatment gains (Aspland & Gardner, 2003; Eyberg & Funderburk, 2011; Roberts & Hope, 2001). Because self-report questionnaires can be impacted by multiple types of bias, and because there are notable differences in scores on subjective report measures across family members (Barbosa, Tannock, & Manassis, 2002), direct observation coding systems have been considered an important component in the evaluation of parent-child interactions (e.g., Gardner, 2000; Hops, Davis, & Longoria, 1995; Hupp, Reitman, Forde, Shriver, & Kelley, 2008). Intervention studies show that observational measures of parent-child interaction are more predictive of child outcomes than self-report questionnaires (Patterson & Forgatch, 1995; Zaslow et al., 2006) and are assumed to be “less biased, more objective, and more sensitive” (Prasadarao & Kumariah, 1997, p. 278). However, this is only true when recording procedures are consistent, when coders are well-trained, and when the observation systems have a well-validated coding scheme. Furthermore, in order to establish clinical utility, observation systems need the ability to characterize clinical versus non-clinical samples (Reitman, Hummel, Franz, & Gross, 1998). Thus, well-validated assessment techniques utilizing observation of parent-child interactions can play a critical role in research and in the implementation of PMT programs (Pearl, 2009).

Certain parent-child interaction coding systems are being used with more diverse populations as recent years have seen an increase in PMT program research being conducted in other countries and cultures. For instance, recent research has investigated a particular PMT program, Parent-Child Interaction Therapy, with Latino samples (Matos et al., 2009; McCabe, Yeh, Lau, & Argote, 2012) and Chinese samples (Leung et al., 2015), as well as with samples in Australia (Nixon et al., 2004), Germany (Briegel, Walter, Schimek, Knapp, & Bussing, 2015; Schimek, Walter, Bussing, & Briegel, 2014), and the Netherlands (Abrahamse et al., 2012). Although these efforts represent a positive trend in disseminating effective parenting programs, the spread of these treatments necessitates further evaluation of the behavioral assessment techniques that are integral to their implementation within new cultural and geographic contexts. The psychometric properties of such assessment instruments may differ across cultural groups; for example, population means may differ (e.g., Kaplan, 1985; Mieloo et al., 2014; Rescorla et al., 2011).

Researchers have dealt with possible sources of cross-cultural assessment bias using a number of methods, including norming the instruments with new cultural samples (Cheung, Kwong, & Zhang, 2003) and using confirmatory factor analysis with new populations (Garcia-Barrera, Karr, Duran, Dierenfeld, & Pineda, 2015), amongst other methods. Although recent research has investigated the psychometric properties of the Eyberg Child Behavior Inventory (ECBI), a parent-report measure used in the implementation of PMT programs, within a Dutch sample (Abrahamse et al., 2015), the properties of the Dyadic Parent-Child Interaction Coding System (DPICS; Eyberg, Nelson, Ginn, Bhuiyan, & Boggs, 2013), a parent-child interaction observation system used in both treatment and research, has yet to be investigated in that population.

A number of studies support the psychometric properties of the DPICS with samples from the United States (US) (see Eyberg et al., 2013 for a review). The categories used in the current version have adequate interrater reliability and occur sufficiently for reliable coding. In addition, the DPICS has been found efficient for the screening of disruptive behavior disorders in children in a Norwegian sample (Bjørseth, McNeil, & Wichstrøm, 2015). Given the importance of reliable and valid behavioral observation of parent-child interactions in both the evaluation and the implementation of treatment, and given the prevalence of the use of DPICS in research and treatment (see e.g., Borden et al., 2014; Niec, Shanley, Barnett, Baker, & Solomon, 2015; Thornberry Jr. & Brestan-Knight, 2011), further research with the DPICS in new populations is warranted.

The purpose of the present study was to examine the psychometric properties of the DPICS with a sample of parent-child dyads in the Netherlands. As the assessment of the psychometric properties of the DPICS previously included normative data for specific populations, test-retest reliability, and interrater reliability (Eyberg et al., 2013), we examined these psychometric properties in a non-clinical sample of Dutch families. Additionally, DPICS scores from a US sample of parent-child dyads were compared to the Dutch sample to examine similarities and differences in interaction styles across cultures and to explore the value of the US norms within the Netherlands. We expected that the robust psychometric properties of the DPICS would be maintained in the Netherlands, including specifically, test-retest reliability and interrater reliability. Although the existing literature does not provide guidance on the similarities or differences to expect on specific DPICS categories, we hypothesized that the DPICS scores of the Dutch parents would reflect the authoritative parenting style including autonomy-oriented behavior and emotional warmth that is commonly found in Dutch parenting (Van der Bruggen, Stams, Bögels, & Paulussen-Hoogbeem, 2010). Therefore, we expected that Dutch parents would use fewer commands, questions, and criticisms during the interactions with their children.

Methods

Participants and procedure

The present study included a Dutch sample ($n = 31$) and a US sample ($n = 86$). Informed consent was obtained from all individual participants included in the study.

Dutch sample

Families were recruited with informative flyers distributed to child daycare centers and local schools in Amsterdam, The Netherlands. Parents who were interested in participating contacted the researchers by e-mail or telephone and were subsequently screened during a telephone interview, including the administration of a standardized parent rating scale for child disruptive behavior, the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). The inclusion criterion for participation in the study was a score below the clinical cut-off point on the ECBI Intensity Scale (≤ 132). All families who were interested in study participation met this criterion.

After the screening by telephone, mothers and children were visited at home to complete the DPICS observation and a number of questionnaires. After a week, the family was visited a second time to complete the DPICS once again. Families received a small compensation for their participation, including a present for the child and a €10 gift card for each assessment.

The Dutch sample included 31 mother-child dyads. Sample characteristics are presented in Table 3.1. Children's ages ranged between 2 and 7 years. Twenty-five children (80.6%) were reported as being of Dutch origin. Six children (19.4%) had one or two parents born in another country (Congo, France, Ghana, Nigeria, South-Korea, Surinam). Mothers' ages ranged between 29 and 50 years old. Most families were two-parent families: 45.2% of the families were married and 48.4% were unmarried living with a partner. Most families (79.4%) had an income higher than €30,000 and mothers were, in general, highly educated (Table 3.1).

US sample

US families were recruited in a similar way as the Dutch sample. Flyers including study information were distributed at child daycare centers and schools in a Midwestern community in the US. Parents who were interested in participating contacted researchers by telephone and were scheduled for an individual assessment at a university-based research center. During this assessment, mothers provided informed consent, and completed the DPICS observation as part of a larger battery of measures. Families in this sample received \$30 or \$40 for their participation.

The total US sample included 86 mother-child dyads. These families participated in two different studies: a study examining the relation between parenting-related cognitions and perceptions of children's behavior ($n = 39$; Shanley, 2008) and a study examining the effect of coaching on parent-child interactions ($n = 47$; Shanley & Niec, 2010). The DPICS codes of the total 86 mother-child dyads have been previously compared to a sample of Mexican American families (McCabe et al., 2013). To be included in the non-clinical sample in the current study, child behavior had to be below the clinical cut-off score on the ECBI Intensity Scale or the Externalizing Composite of the Behavior Assessment System for Children-Second Edition (BASC-2; Reynolds & Kamphaus, 2004). In this sample, all children and parents had a Caucasian background, except for one father with a Hispanic background. The ages of the children ranged from 2 to 7 years. Mothers' ages ranged from 24 to 50 years old. Most families were two-parent families: 83.7% of the parents were married and 2.3% were unmarried living with a partner. The average family income ranged from \$30,001 to \$39,000, which was collected for a part of the sample only ($n = 47$). Most mothers were higher educated (Table 3.1); 14% of the mothers had a high-school education or less.

Table 3.1
Demographic characteristics and mean scores per sample

	Mean (SD) or Percentage					
	<i>n</i>	Dutch sample (<i>n</i> = 31)		US Sample (<i>n</i> = 86)		<i>p</i>
		<i>n</i>	<i>M</i> (SD) or %	<i>n</i>	<i>M</i> (SD) or %	
Child gender (% boy)	31	64.5	86	45.3	.07	
Child age (years)	31	4.3 (1.5)	86	4.4 (1.5)	.87	
Child illness (% asthma, diabetes, etc.)	31	6.5	86	16.3	.17	
Mother's age	31	38.9 (4.7)	83	32.5 (5.6)	< .001*	
Mother's education (% high school or less)	31	16.1	86	14.0	.77	
Family status (% single parent)	31	6.5	86	14.0	.27	
ECBI Intensity Scale	29	86.4 (23.5)	39	95.9 (21.6)	.09	
ECBI Problem Scale	25	3.6 (4.3)	39	5.6 (5.2)	.13	
CBCL / BASC-2 Internalizing (<i>t</i> -scores)	31	42.0 (8.3) ^a	47	50.1 (12.0) ^b	.76 ^c	
CBCL / BASC-2 Externalizing (<i>t</i> -scores)	31	43.7 (8.2) ^a	47	46.8 (6.7) ^b	.99 ^c	
PSI-SF	31	41.5 (15.4) ^c	39	78.4 (17.9) ^d	.02 ^e	

Note. *p* = probability of differences between samples according to independent samples *t*-tests and chi-square tests. *Significant difference between samples, ^a CBCL *t*-scores, ^b BASC-2 *t*-scores, ^c 25-item PSI raw total score, ^d 36-item PSI raw total score, ^e Fisher's exact tests comparing samples on number of mothers above clinical cut-off.

Measures

Dyadic Parent-Child Interaction Coding System

The DPICS (Eyberg, Nelson, Duke, & Boggs, 2005) is a behavioral observational coding system that measures the quality of parent-child interactions. In this study, DPICS-III was used in both samples (Eyberg et al., 2005). For the Dutch sample the coding manual was translated into Dutch. Parents and children are observed in three 5-minute situations that require an increasing degree of parental control. In the first situation, Child-Led Play (CLP), parents are instructed to follow their child's lead and to play along with the activity chosen by the child. In the second situation, the Parent-Led Play (PLP), parents are instructed to tell their child that it is the parent's turn to choose the activity and to play along with the parent according to their rules. In the last situation parents are instructed to tell their child to Clean Up (CU) the toys without assistance. In both Dutch and US samples, the same standard instructions were used and the observations were videotaped for later coding. In the Dutch sample the observation was recorded at the family's home and in the US sample the observation was at the research center. In the present study the following parent behaviors were included in the analyzes; negative talk, direct command, indirect command, labeled praise, unlabeled praise, reflective statement, behavior description, question, neutral talk, positive touch, and negative touch. For these parental behaviors, the frequencies per situations were counted.

In both samples, independent master-level research assistants and undergraduate students conducted DPICS observations and coding. All coders were intensively trained to 80% agreement with an expert coder for all categories. For each mother-child dyad observation, one random situation (CLP, PLP, or CU) was coded again by a second coder to the estimate interrater reliability. In the Dutch sample, the average kappa for all DPICS categories was .91 (range .78-.98). In the US sample, the average kappa also was .91 (range .84-.97).

Eyberg Child Behavior Inventory

All children in the Dutch sample and 39 children in the US sample were screened for eligibility using the ECBI (Eyberg & Pincus, 1999), a 36-item parent rating scale of child behavior problems. Both English and Dutch versions have good established reliability (Abrahamse et al., 2015; Funderburk et al., 2003). The ECBI has two scales: the Intensity Scale, which measures the frequency of child behavior problems using a 7-point Likert scale (1 = *never* to 7 = *always*), and the Problem Scale, which measures parental tolerance for children's misbehavior, asking parents whether or not they view each of the described behaviors as problematic, using a dichotomous scale (1 = *yes*, 0 = *no*). The published cut-off score for the Intensity Scale is ≤ 132 and ≤ 15 for the Problem Scale. In the present

study, the internal consistency (Cronbach's alpha) for the ECBI Intensity Scale was .90 for the Dutch sample and .89 for the US sample. The internal consistencies for the ECBI Problem Scale were .79 and .86 respectively.

Behavioral Assessment System for Children, Second Edition

Forty-nine children from the US sample were screened for eligibility for participation with the BASC-2 (Reynolds & Kamphaus, 2004), a parent-report for child behavior and emotional problems using a 4-point scale ranging from 1 (*never*) to 4 (*almost always*). Good psychometric properties were found for this questionnaire. In the current study the composite scales Internalizing Problems and Externalizing Problems were used. The internal consistency for the Externalizing Problems Composite score was .87. According to the professional manual, a *T*-score ≥ 70 indicated clinically significant behavior.

Child Behavior Checklist

In the Dutch sample, the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000, 2001) was used as an additional questionnaire to measure the level of the child's internalizing and externalizing behavior problems. Two versions were used; the CBCL for ages 1.5 to 5 (100 items) and the CBCL for ages 6 to 18 years (113 items) both using a 3-point scale (0 = *not true*, 1 = *somewhat or sometimes true*, 2 = *very true or often true*). The Dutch translations of the CBCL have good psychometric properties (Verhulst, Van der Ende, & Koot, 1996) and the Cronbach's alphas in present study were .75 for the Internalizing Scale and .89 for the Externalizing Scale. To combine the two CBCL age versions, *T*-scores were calculated using the professional manual, with $T \geq 60$ indicating clinical behavior.

Parenting Stress Index Short Form

In both samples the Parenting Stress Index Short Form (PSI-SF; Abidin, 1995) was administered to assess parents' perceptions of stress in the parent-child relationship. The English version contains 36 items using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). The Dutch translation and adaptation of the PSI-SF (De Brock, Vermulst, Gerris, & Abidin, 1992) contains 25 items which were rated on a 6-point scale ranging from 1 (*completely disagree*) to 6 (*completely agree*). Reliability and validity for both English and Dutch versions were described as satisfactory to good. In the present study, the sum of all items as an overall parenting stress scale was used with internal consistencies of .95 for the Dutch sample and .93 for the US sample. According to the published norms; a Total Stress Score above 74 (Dutch version) and 90 (English version) indicated a clinical level of parenting stress (Abidin, 1995; De Brock et al., 1992).

Statistical analyzes

All analyzes were performed in SPSS version 22. One-week test-retest reliability of the DPICS categories in the Dutch sample were calculated using Pearson correlations and paired samples *t*-tests. Second, independent samples *t*-tests and chi-square tests were conducted to compare the Dutch and US samples on demographic characteristics and the ECBI means. Also, the number of children with clinical levels of problem behavior and parenting stress for both samples were reported and compared between samples using chi-square tests. Finally, multivariate analyzes of covariance (MANCOVAs) were conducted to compare the Dutch and US sample on each category on the DPICS situation (CLP, PLP, and CU).

Results

Test-retest reliability of the DPICS in the Dutch sample

Families in the Dutch sample were visited for a second time one week after the first assessment in order to evaluate the test-retest reliability of the DPICS. Test-retest reliability was calculated for the individual parent categories per each situation and for the total sum of the categories over the three situations. Table 3.2 presents the Pearson correlations of the one-week test-retest reliability of the DPICS categories, which were significant for most categories, except for negative talk, behavior descriptions, positive touch, and negative touch. Paired *t*-tests using the total sum of the categories over the three situations

Table 3.2

One-week test-retest reliability for Dutch Sample N = 31

	CLP	PLP	CU	Total		<i>r</i>
	<i>r</i>	<i>r</i>	<i>r</i>	<i>M (SD) T</i> ₁	<i>M (SD) T</i> ₂	
Negative Talk	.19*	.25	.06	1.58 (13.34)	1.19 (1.25)	.19
Direct Command	-.03	.38*	.58**	16.35 (10.44)	14.58 (8.34)	.77***
Indirect Command	-.07	.34	.65***	18.19 (9.09)	17.84 (11.34)	.69***
Labeled Praise	-.07	.06	.11	0.57 (0.86)	0.60 (1.13)	.50**
Unlabeled Praise	.31	.17	.56**	9.50 (6.79)	9.03 (7.10)	.50**
Reflective Statement	.34	.20	.37*	6.81 (5.48)	6.48 (5.21)	.70***
Behavior Description	-.11	-.14	.26	0.42 (0.62)	0.65 (1.05)	.08
Question	.56**	.48**	.55**	47.51 (17.17)	42.00 (19.38)*	.73***
Neutral Talk	.52**	.39*	.62***	95.51 (24.41)	89.32 (27.88)	.64***
Positive Touch	.16	.74***	.05	0.97 (1.43)	2.32 (3.23)*	.25
Negative Touch	-.05	.21	.23	0.48 (1.00)	0.58 (0.89)	.24

Note. CLP Child-Led Play; PLP Parent-Led Play; CU Clean Up; T₁ First assessment; T₂ Second assessment.

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

revealed no significant differences between the mean frequencies for almost all parent categories (Table 3.2). Mothers used significantly more questions, $t(30) = 2.26, p = .03$, and less positive touch, $t(30) = -2.37, p = .03$, during the first assessment.

Demographic differences across Dutch and US samples

Table 3.1 presents the percentages and means of demographic characteristics and questionnaires. Independent samples t -tests and chi-square tests revealed no significant differences on child age and gender. However, mothers in the Dutch sample were significantly older than the mothers in the US sample, $t(112) = 5.69, p < .001$.

The means of the additional questionnaires, the ECBI, CBCL, BASC-2, and PSI-SF were also reported in Table 3.1. Since the questionnaires differed between the samples, the numbers of children with a score within the clinical level were compared using Fisher's exact tests. For the internalizing scale (CBCL and BASC-2) in both samples only one mother reported her child's behavior above the clinical cut-off, indicating no significant differences between samples. In the US sample, no children had a score above the clinical cut-off on the BASC-2. In the Dutch sample only one child had a score within the clinical level of the CBCL externalizing scale, again indicating no significant differences between samples. A significant difference was found between the samples on the PSI-SF ($p = .02$, two-tailed Fisher's exact test). In the US sample, 8.6% of the mothers had clinical levels of parenting stress compared to 3.1% of the mothers in the Dutch sample.

Differences in parent-child interactions across Dutch and US samples

Because mothers' ages significantly differed between samples, this variable was included as a covariate in the multivariate analyzes (MANCOVA). Table 3.3 shows the mean scores and standard deviations per DPICS parent category in each situation (Child-Led Play, Parent-Led Play, and Clean Up). For the Dutch sample, we used the first DPICS observation in the analysis. For all DPICS situations, the overall MANCOVA was significant; (CLP, Wilks' Lambda = 0.72, $F(11, 110) = 3.38, p = .001$; PLP, Wilks' Lambda = 0.72, $F(11, 110) = 3.46, p < .001$; CU, Wilks' Lambda = 0.58, $F(11, 110) = 6.48, p < .001$). Although significant differences between samples were found in the three situations, the mean frequencies for a number of categories were small. For example, for all mothers and all situations, the frequencies of labeled praises, behavior descriptions, and negative touch were smaller than one.

In regard to differences between samples on individual DPICS categories, in the Child-Led Play situation, US mothers used significantly more frequent questions than Dutch mothers. In this situation, however, no significant differences were found between the

Table 3.3

Differences between Dutch and US samples on the DPICS categories for each situation using MANCOVA

<i>Parent categories</i>	<i>CLP-Dutch</i> (<i>n</i> = 30)		<i>CLP-US</i> (<i>n</i> = 80)		<i>PLP-Dutch</i> (<i>n</i> = 31)		<i>PLP-US</i> (<i>n</i> = 79)		<i>CU-Dutch</i> (<i>n</i> = 31)		<i>CU-US</i> (<i>n</i> = 79)	
	<i>M (SD)</i>	<i>F</i>	<i>M (SD)</i>	<i>F</i>	<i>M (SD)</i>	<i>F</i>	<i>M (SD)</i>	<i>F</i>	<i>M (SD)</i>	<i>F</i>	<i>M (SD)</i>	<i>F</i>
Negative Talk	0.40 (0.86)	2.60	0.78 (1.23)	2.60	1.29 (1.70)	16.44*	2.51 (3.13)	16.44*	1.58 (2.85)	0.42	4.10 (6.82)	5.27*
Direct Command	2.60 (1.65)	0.41	2.56 (3.13)	0.41	5.87 (5.64)	83.97*	8.72 (7.62)	83.97*	7.81 (6.65)	0.001	9.61 (7.47)	1.13
Indirect Command	2.90 (2.45)	2.92	1.98 (1.87)	2.92	6.00 (3.81)	8.12**	10.19 (7.00)	8.12**	9.39 (6.09)	5.42*	11.11 (6.32)	0.26
Labeled Praise	0.03 (0.183)	0.44	0.18 (0.41)	0.44	0.19 (0.75)	0.42	0.16 (0.44)	0.42	0.32 (0.54)	4.63*	0.61 (1.20)	0.93
Unlabeled Praise	2.27 (2.56)	1.47	2.45 (2.33)	1.47	2.35 (2.75)	0.001	2.49 (2.57)	0.001	4.68 (4.18)	0.001	4.19 (4.10)	1.09
Reflective Statement	2.57 (2.91)	3.34	2.32 (2.60)	3.34	2.52 (2.41)	5.42*	1.65 (2.05)	5.42*	1.81 (2.18)	0.001	1.63 (2.53)	0.50
Behavior Description	0.17 (0.46)	0.78	0.30 (0.62)	0.78	0.10 (0.30)	0.42	0.30 (0.70)	0.42	0.10 (0.30)	0.001	0.32 (0.71)	5.19*
Question	18.33 (7.74)	11.58**	28.20 (14.72)	11.58**	17.45 (7.39)	6.22	24.43 (14.31)	6.22	11.97 (7.07)	6.22	23.95 (11.24)	33.68***
Neutral Talk	27.27 (9.03)	0.76	27.45 (11.78)	0.76	38.45 (12.13)	2.08	35.53 (11.23)	2.08	29.84 (13.23)	2.08	29.75 (10.97)	0.08
Positive Touch	0.17 (0.46)	0.01	0.15 (0.55)	0.01	0.13 (0.43)	0.02	0.22 (0.61)	0.02	0.65 (1.28)	0.02	1.61 (2.65)	1.99
Negative Touch	0.07 (2.54)	0.06	0.03 (0.16)	0.06	0.10 (0.30)	3.45	0.03 (0.16)	3.45	0.32 (0.87)	3.45	0.08 (0.54)	5.25*

Note. CLP Child-Led Play; PLP Parent-Led Play; CU Clean Up; Dutch Dutch sample; US United States sample.

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

samples in the frequency of negative talk, commands, labeled and unlabeled praises, reflective statements, behavior descriptions, neutral talk, and positive and negative touch.

In the Parent-Led Play situation, US mothers used significantly more frequent negative talk, commands (direct and indirect), and behavior descriptions. Dutch mothers used reflective statements more frequently. No significant differences were found on praises, questions, neutral talk, and positive and negative touch.

Finally, during the Clean Up situation, fewer differences between samples were found. However, US mothers used more frequently negative talk, behavior descriptions and questions during the clean up situation, while Dutch mothers used more negative touch. In this situation, there were no significant differences between samples on negative talk, commands, praises, reflective statements, neutral talk, and positive touch.

Discussion

The purpose of this study was to examine the psychometric properties of an observational assessment for parent-child interactions, the DPICS, within a non-clinical sample in the Netherlands and to compare the DPICS findings in a Dutch sample to a similar sample in the US. High one-week test-retest reliability was found for most parent categories, including commands, praise, reflective statements, questions, and neutral talk. Thus, mothers' verbal interactions with their children were generally stable over a week. Negative talk, behavioral descriptions, and non-verbal behavior (e.g., positive and negative touch) of the mother, however, were not significantly correlated between the two observations. An explanation may be that inappropriate parent behavior such as negative talk and negative touch are influenced by the behavior of the child, and therefore more dependent of a specific situation. The mothers' positive behavior seemed more stable, except for behavior descriptions and positive touch, which occurred very limited. It appears that the mothers used these behaviors very incidentally, which may have lead to insignificant results. With respect to other psychometric properties of the DPICS, the interrater reliability was found high among the Dutch coders, indicating the utility of the coding system in the Netherlands.

With regards to the comparison of the Dutch mother-child dyads and the US mothers-child dyads, the overall comparison suggested differences between samples, but the DPICS scores on individual categories were largely similar between populations. Dutch and US mothers showed similar frequencies of praises, neutral talk, and positive touch during the interaction with their child. Some behaviors, however, were significantly dif-

ferent between samples and occurred in particular during the Parent-Led Play where parents are instructed to tell the child to play according their rules. Dutch mothers gave fewer commands, used less negative talk (e.g., criticism, negative commands), and used more reflective statements suggesting that Dutch mothers are less likely to control the interaction with their children. Other significant differences found between behaviors of Dutch and US mothers were more behavior descriptions for US mothers and more negative touch for Dutch mothers, but these behaviors were limited (< 1) in all situations. Consistent with our hypothesis, one of the main differences across situations was that Dutch mothers used fewer questions. In PMT programs such as PCIT, questions, commands, and negative talk are discouraged for strengthening the parent-child relationship in order to address disruptive behavior problems in children. The limited use of questions, indirect commands, and negative talk by the Dutch mothers in a non-clinical sample may indicate that the approach of PMT programs is a good fit with Dutch families and also reflect the authoritative parenting style found among Dutch parents (Van der Bruggen, Stams, Bögels, & Paulussen-Hoogbeem, 2010). Previous research also demonstrated less controlling behavior and more autonomy-oriented parenting behavior in Dutch mothers, including high levels of authoritative control (e.g., praises, understanding behavior) (Gerrits, Dekovic, Groenendaal, & Noom, 1996; Yaman, Mesman, Van IJzendoorn, Bakermans-Kranenburg, & Linting, 2010).

In summary, the findings show that the parent-child interactions of Dutch mothers-child dyads are similar to the interactions of US mother-child dyads. An important next step, however, is to study the utility of the DPICS in assessing parent-child interactions within a clinical population in the Netherlands. In particular, examining the validity called treatment sensitivity (pre- to post-treatment changes) as the DPICS is mostly used to assess treatment outcomes for young children and their parents participating in PMT programs. In addition, parent negative talk was recently found as a predictor of child disruptive behavior disorders, including oppositional defiant disorder and conduct disorder (Bjørseth et al., 2015). This association would be an interesting direction for the clinical practice and requires further investigation to determine the potential role of negative parenting in the development and persistence of disruptive behavior disorders.

Strengths and limitations

Our study is the first comparison of parent behavior between Dutch and US mother-child dyads using the DPICS, which is a standardized behavior observation measure widely used in clinical practice and treatment outcome studies. In addition, as well-validated assessment techniques utilizing observation of parent-child interactions play an important role in research and in the implementation of PMT programs, our study contributes to the knowledge on psychometric properties of the DPICS in another country and culture.

However, there are several limitations to this study that should be considered. First, our sample was smaller than other DPICS studies on psychometric properties (Eyberg et al., 2013) and included highly educated mothers. Also, most families had a native Dutch cultural background, which limits the generalizability of our findings to other populations living in the Netherlands. The small sample size and the generally homogenous sample need future research to examine if the findings are replicated among Dutch families from other socioeconomic strata and cultural backgrounds. Second, another limitation that may have influenced our findings was that the parent-child interactions were assessed in different environmental contexts (home versus university-clinic). However, recently it was found that parent-child interactions appear to be similar in the clinic and the home (Shriver, Frerichs, Williams, & Lancaster, 2013). Finally, the additional questionnaires were not the same for all subjects, which limited the comparison of the mean scores on child behavior problems and parenting stress between the Dutch and US samples.

Conclusion

The findings of our study provide evidence that the DPICS is a psychometrically sound observational measure to assess parent-child interactions in the Netherlands. The one-week test-retest reliability, the normative scores, and the similarities between the DPICS scores of Dutch mother-child dyads and mother-child dyads for a US sample support the usefulness of this behavioral assessment technique in the Dutch context. Although further evaluation of the psychometric properties of the DPICS in different Dutch samples is recommended, the current results are promising for the use of the DPICS in clinical practice and treatment outcome studies of PMT programs in the Netherlands.

Chapter 4

Parent-Child Interaction Therapy for preschool children with disruptive behavior problems in the Netherlands

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Abstract

Persistent high levels of aggressive, oppositional and impulsive behaviors, in the early lives of children, are significant risk factors for adolescent and adult antisocial behavior and criminal activity. If the disruptive behavioral problems of young children could be prevented or significantly reduced at an early age, the trajectory of these behavioral problems leading to adolescent delinquency and adult antisocial behavior could be corrected. Parent-Child Interaction Therapy (PCIT) is a short-term, evidence-based, parent management training program for parents dealing with preschool children, who exhibit behavioral problems. Recently, PCIT was implemented in a Dutch community mental health setting. This present study aims to examine the short-term effects of PCIT on reducing the frequency of disruptive behavior in young children. This study is based on the data of 37 referred families ($N = 37$). Whereby the results of which are derived from an analysis of parent-reports of the Eyberg Child Behavior Inventory, obtained during each therapeutic session. Furthermore, demographic information, extracted from client files, was also utilized. However, it must be noted that eleven families (27.5%) dropped out of treatment before the treatment protocol was completed. To investigate the development of disruptive behavior, a non-clinical comparison group was recruited from primary schools ($N = 59$). The results of this study indicate that PCIT significantly reduces disruptive behavior in children. Large effect sizes were found for both fathers and mothers reported problems ($d = 1.88$, $d = 1.99$, respectively), which is similar to American outcome studies. At post-treatment, no differences were found concerning the frequency of behavioral problems of children who completed treatment and those who participated in the non-clinical comparison group. The findings of this study suggest that PCIT is potentially an effective intervention strategy for young children and their parents in the Dutch population. However, further research into the evaluation of PCIT using a randomized controlled trial is recommendable.

Introduction

Child disruptive behavior disorders (DBDs), namely, conduct disorder (CD), and oppositional defiant disorder (ODD) as described by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 2000), are among the most common reasons for referring children and adolescents to mental health services (Loeber et al., 2000). Often, DBDs co-occur with attention deficit hyperactivity disorder (ADHD) (Angold et al., 1999). Children with persistent high levels of aggressive, oppositional, and impulsive behaviors early in life are at a higher risk of serious adolescent and adult antisocial behavior and criminal activity (McCord et al., 2001; Piquero, Farrington, & Blumstein, 2003). Although the prevalence rates of DBDs in the Dutch population has only been studied to a certain degree, one study concerning the prevalence of child psychiatric diagnoses of children between the ages of 6 and 8, using a structured diagnostic interview, revealed a mean prevalence rate of 12.8% for DBDs; 9.3% for girls and 15.2% for boys (Kroes et al., 2001).

Within the last twenty years, several predictors and origins of DBDs have been identified. Most often, disruptive behavior problems start in early childhood. Important risk factors relating to the development of chronic child disruptive behavior problems can manifest during pregnancy and are often related to the history of a mother's social adjustment and lifestyle during pregnancy (Tremblay, 2010). Moreover, the transition from preschool to elementary school years is a critical period for the further development of aggressive behavior, which may persist over time if not treated (Bongers et al., 2004; Loeber & Hay, 1997; Tremblay, 2006). The development of DBDs in young children and their consistency can be explained by an interplay of genetic and environmental risk factors (Bartels et al., 2004). Given the early development of disruptive behavior problems and their stability, as well as long term negative outcomes, prevention and intervention at an early stage is important and more likely to be (cost)effective (Heckman, 2006; Veerman & Van Yperen, 2007). It can be expected that interventions which target young children who are at a high risk of chronic disruptive behavior problems at an early age, will have a more significant impact, compared to interventions which are carried out five to ten years later, when behavioral problems may have become persistent (Heckman, 2006; Tremblay, 2006).

If disruptive behavior problems of young children could be prevented or significantly reduced early in life, the trajectory of early disruptive behavior problems leading to adolescent delinquency and adult antisocial behavior could also be prevented. Unfortunately, therapeutic approaches targeting children with disruptive behaviors struggle with two main issues. First, the majority of them lack empirical evidence (Veerman & Van Yperen, 2007), and second, most target older children, such as pre-adolescents or adolescents,

thereby missing a crucial age group in which prevention and intervention is of utmost importance (Heckman, 2006; Tremblay, 2010). Currently, parent management training (PMT) programs, which use parents as the primary agent of change, are the most effective method in reducing disruptive behaviors in young children (Eyberg et al., 2008). A review of the effects of early PMT programs aimed at preventing antisocial behavior and delinquency, shows that those are an effective intervention strategy in reducing child disruptive behavior, with a mean effect size of 0.35. However, this effect size still indicates a small to moderate effect (Piquero, Farrington, Tremblay, & Jennings, 2009). Although PMT programs are an effective treatment for children with behavioral problems, further research is required (Dretzke et al., 2009).

Parent-Child Interaction Therapy

Parent-Child Interaction Therapy (PCIT; Zisser & Eyberg, 2010) is a short-term, evidence-based PMT program which is used widely as a treatment for young children with disruptive behavior problems. This treatment is based upon social learning (Patterson, 1982), as well as attachment theory (Ainsworth, 1969) and its primary aim is to change dysfunctional parent-child interactions into those that can be characterized as authoritative parenting (Baumrind, 1967; Gallagher, 2003). The treatment is designed to help parents build a warm and responsive relationship with their child and to manage their child's behavior more effectively (Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998).

Several studies, mainly in the United States, have provided empirical evidence which indicated the effectiveness of PCIT, namely the improvement of parenting skills and the way parents interact with their children, as well as parental well-being, and the reduction of child disruptive behavior with medium to large effect sizes (Thomas & Zimmer-Gembeck, 2007). Thereby, a body of evidence is growing on the effectiveness of PCIT to prevent child maltreatment (Thomas & Zimmer-Gembeck, 2011). PCIT has also proven to be robust across various groups and diagnoses. For instance, PCIT has been successfully adapted to meet the needs of several different cultural and language groups, including Puerto Rican (Matos, Torres, Santiago, Jurado, & Rodriguez, 2006), Mexican American (McCabe, Garland, Lau, & Chavez, 2005), and Chinese (Leung, Tsang, Heung, & Yiu, 2009). Beside the cross cultural implementation of PCIT, PCIT has also explored new research directions including studies which work with several adaptations of the treatment which can in turn be used for different target groups. For example, PCIT has been tailored for physically abusive parents (Chaffin et al., 2004), prematurely born children (Bagner, Sheinkopf, Vohr, & Lester, 2010), children with separation anxiety (Choate, Pincus, Eyberg, & Barlow, 2005), and children with learning disabilities (Bagner & Eyberg, 2007).

In the past decade, the implementation of PCIT has expanded to several countries. However, evidence which illustrates the effectiveness of PCIT among children from other cultural backgrounds remains limited (Eyberg, 2005). Although PCIT has been implemented in a number of European countries (e.g., Germany and Norway) (McNeil & Hembree-Kigin, 2010), no evaluation studies are available in Europe. In the Netherlands, PCIT has been implemented in a community mental health setting in child and adolescent psychiatry since 2007. Most treatment outcome studies have been conducted at university clinics. Currently, the transferability of PCIT to community and other clinical settings is an important issue in evidence-based clinical practice. Delivering treatment in community mental health settings is often more challenging, and high rates of premature dropouts can limit its effectiveness. More research on PCIT is needed to examine the effectiveness of PCIT in real-world clinics (Herschell, Calzada, Eyberg, & McNeil, 2002; Lyon & Budd, 2010).

The present study describes the results of a preliminary evaluation of the short-term effectiveness of Parent-Child Interaction Therapy in the Netherlands which aims to reduce the disruptive behavior of children. In a retrospective design, child disruptive behavior was measured with the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). We hypothesized that PCIT will have positive effects on the disruptive behavior of young children.

Methods

Participants

Since the implementation of PCIT in a Dutch mental health setting, between January 2007 and July 2009, forty families were referred on the grounds of child disruptive behavior. All of the families were contacted to provide permission for using their reports of the ECBI (Eyberg & Pincus, 1999) in this study. Because three families did not give their consent, data from 37 families were used in statistical analyzes. Although the families who did not give their consent were composed of two-parent families, no significant differences were found in regard to other important demographic characteristics and scores on the ECBI at pre-treatment assessment and post-treatment assessment between these three families and the participating families.

A total of 37 families formed the clinical group (Table 4.1). All of the participating families lived in or nearby Amsterdam, The Netherlands. In addition, as determined by a child psychiatrist, 17 children (45.9%) met the diagnostic criteria according to the DSM-IV (American Psychiatric Association, 2000). Only four children met the criteria

for ODD only, six children for ADHD, and only two children met the criteria for ASD (Autism Spectrum Disorder). Five children had co-morbid diagnoses. Two children met the criteria for both ADHD and ODD, two children met the criteria for ADHD, ODD and ASD, and one child met the criteria for ADHD and ASD. In all cases, a female caregiver/mother was involved in the treatment. In regards to fathers, 19 (51.4%) were involved in treatment sessions. Twenty-one children (56.8%) lived in two-parent families with their biological parents, and two children (5.4%) in this group were co-parented, meaning that the child lived with either divorced or separated parents, but in different homes. Thirteen children (35.1%) lived in single-mother families and three children (8.1%) had foster parents. The racial/ethnic composition of mothers was as followed; 62% Caucasian, 11% Surinamese, 8% Moroccan, 3% Turkish, and 16% from other, mainly African, countries. In order to investigate the development of disruptive behavior over a period of six months, a non-clinical comparison group was recruited which consisted of children from the same age category as those from the clinical group. These families were recruited by students on primary schools. The mothers in this group filled out the ECBI twice over a six-month period ($N = 59$), and this group was composed of 30 boys and 29 girls (Table 4.1). No significant differences ($p < .05$) were found between the ages of the mothers and children in the non-clinical group and the clinical group. Although there was a significant difference in gender composition between the clinical and non-clinical group, there were no gender differences on the mean ECBI scores on all presented scales.

Table 4.1
Descriptive statistics of the treatment and non-clinical comparison groups

	Mean (SD) or Percent	
	TT ($n = 37$)	NC ($n = 58$)
Child age (years)	4.7 (1.5)	5.2 (0.8)
Child gender (% male)	75.5	50.8
Mother's age (years)	34.9 (6.7)	36.3 (4.1)
Family status (% single parent)	35.1	1.7
Mother racial composition (% Caucasian)	62.0	96.6

Note. TT Total treatment group; NC Non-clinical comparison group.

Measures

Eyberg Child Behavior Inventory

The ECBI (Eyberg & Pincus, 1999) is a 36-item parent-report, which measures the degree of behavioral problems of children between the ages of 2 to 16. The ECBI assesses the behavior on two different scales, the Intensity Scale and the Problem Scale. The ECBI Intensity Scale measures the frequency of disruptive behavior along a 7-point scale (1 = *never* to 7 = *always*), and the ECBI Problem Scale measures whether or not parents view

those behaviors as problematic (1 = *yes*, 0 = *no*). Several studies have demonstrated that both scales of the ECBI demonstrate a high level of reliability and validity in terms of measuring the disruptive behavior of children (Funderburk et al., 2003; Rich & Eyberg, 2001). Our study used a Dutch version translated by Raaijmakers, Posthumus, and Matthys (University of Utrecht, The Netherlands). The norms for a clinical range were used from the professional manual (Eyberg & Pincus, 1999). Scores above 132 on the Intensity Scale and above 15 on the Problem Scale were considered clinically significant. Both parents completed the ECBI if the father was involved in the treatment sessions. Therefore, for the pre- and post-treatment assessment data, ECBI reports of the first session (orientation) and last treatment session (graduation) were used.

Procedure

All participating families received PCIT delivered in the Dutch language by one of the eight therapists who were trained in two workshops by the program developers. They attended the first workshop at the University of Florida and the second at the University of Oklahoma. The original treatment manual (Eyberg & Child Study Lab, 1999) was translated into Dutch. Each therapist had bachelors or masters degrees in mental health related fields and had experience in clinical work. Therapists started their cases right after the training workshop. Throughout the training and during follow-up consultations, a strong emphasis was put on treatment fidelity. For supervision purposes, all therapy sessions were videotaped. Although treatment adherence was not formally assessed, additional supervision sessions were provided. Due to the fast implementation process and organizational limitations, this study was retrospective. After the termination of PCIT, all parents were asked for their permission to use their reports of the ECBI (Eyberg & Pincus, 1999) conducted during treatment, and some demographic information from the client records for scientific research.

Treatment

Parent-Child Interaction Therapy (PCIT) is an intervention which focuses on children with disruptive behavior problems and their caregivers (Eyberg & Robinson, 1982). PCIT consists of two phases of treatment, Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI). The first phase focuses on enhancing the parent-child relationship and the second on improving child compliance. Both treatment phases begin with a didactic parental teaching session followed by weekly sessions whereby the parent is coached by the therapist during play sessions with their child. The therapist provides the parent with feedback on their skills from an observation room behind a one-way mirror, via a bug-in-the-ear. Parents practice specific communication skills and behavior management with their children. PCIT is customized per case and although it is often a short-term intervention, PCIT is not time-limited. In each session parent-child interactions are coded at

the beginning to determine the family's progress toward pre-established mastery criteria. Parents have to master the CDI criteria before starting with the PDI phase of treatment. The PDI phase continues until parents reach the mastery criteria for the PDI skills and rate their child's behavior well within a normal range. A consequence of this approach is that the number of sessions may vary among families. Nevertheless, each family receives the number of sessions necessary to master CDI and PDI skills in order to demote their child's behavior below clinical levels (McNeil & Hembree-Kigin, 2010).

Statistical analyzes

The effectiveness analyzes were performed on a sample of participants who completed the treatment. Paired samples *t*-tests were conducted on the mean scores of both parent's ECBI from pre and post assessments. If a score of a parent on the ECBI was missing on a pre- or post-treatment assessment, the information of that parent was removed from the analyzes for the particular scale. Effect sizes (Cohen's *d*) were calculated by dividing the pre- and post-test mean by the pooled standard deviation, whereby 0.2 indicated a small effect, 0.5 a medium effect, and 0.8 and higher a large effect size (Cohen, 1992). In all of the analyzes, a two-tailed test was used and all *p* values < .05 were considered to be statistically significant. To determine whether the changes in disruptive behavior in children were clinically significant, reliable change indices (RCIs; Jacobson & Truax, 1991) for each child were calculated by dividing the magnitude of change on the ECBI scales between pre- and post-treatment assessment by the standard error of the difference score. Published norms for the ECBI clinical cut-off were used (Funderburk et al., 2003).

Results

Descriptive statistics

Out of the 40 participating families who started with PCIT, 11 families (27.5%) dropped out before treatment was completed, and seven families (63.6%) dropped out within the first ten sessions of treatment. There were several reasons that caused families to terminate treatment prematurely. Four families required other, more intensive treatment (36.4%), and two families (18.2%) disagreed with the treatment approach, particularly the time-out procedure in the Parent-Directed Interaction phase. Another two families (18.2%) simply stopped showing up for treatment, another family (9.1%) was too busy to participate, one family (9.1%) had to stop treatment due to severe parental relational problems and for one family (9.1%), the child's behavior improved enough to terminate treatment before meeting all skill levels by the parents.

Those families who did complete treatment ($n = 26$) went through a number of treatment sessions ranging from 10 to 38 sessions per family ($M = 17.4$, $SD = 6.9$). Most families (80.8%) finished PCIT within 10 to 20 treatment sessions. The mean duration of the Child-Directed Interaction phase was 10 sessions ($SD = 5.2$) and for the Parent-Directed Interaction phase the mean duration was 7 sessions ($SD = 2.6$). The mean duration of PCIT measured in time was 6.6 months ($SD = 2.7$), ranging from 3 to 12 months, per family.

Outcomes of disruptive behavior

Paired samples t -tests of pre and post measures revealed a significant reduction of the frequency of disruptive behavior in children after treatment completion. Table 4.2 illustrates that at the end of the Child-Directed Interaction phase a significant decrease on both ECBI scales was already visible for both mothers and fathers. Overall, effect sizes between 1.48 and 1.99 at post-assessment were found for PCIT on child behavioral problems.

Table 4.2
Changes on the Eyberg Child Behavior Inventory (ECBI)

	<i>n</i>	Pre Intensity		Post Intensity		<i>t</i>	Effect size (<i>d</i>)	<i>n</i>	Pre Problem		Post Problem		<i>t</i>	Effect size (<i>d</i>)
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Mothers														
CDI	25	156.4	32.0	128.2	28.9	6.2***	0.92	23	20.4	8.3	17.3	8.0	2.5**	0.38
PDI	24	127.3	28.3	102.8	23.7	4.5***	0.94	22	16.5	7.5	7.9	6.7	4.8***	1.21
Total treatment	23	154.0	32.2	100.2	20.5	8.4***	1.99	21	20.0	8.5	7.8	6.9	5.6***	1.56
Fathers														
CDI	14	151.9	31.8	128.9	34.8	2.6**	0.69	12	21.4	6.8	15.8	10.1	2.2*	0.65
PDI	16	126.4	31.9	101.9	31.2	3.3*	0.78	15	15.5	9.3	7.9	8.9	3.8**	0.83
Total treatment	15	153.3	30.9	101.0	24.3	6.7***	1.88	12	19.8	7.2	8.0	8.9	5.9***	1.48
Non-clinical group ¹	59	80.5	20.4	80.8	22.8	-0.2	-0.02	56	3.3	5.3	2.3	4.2	1.8	0.21

Note. ECBI Eyberg Child Behavior Inventory; CDI Child-Directed Interaction phase; PDI Parent-Directed Interaction phase. * $p < .10$; ** $p < .05$; *** $p < .001$. ¹ Post in the non-clinical comparison group corresponds to a six months follow-up; The non-clinical group only represents mothers.

In the non-clinical comparison group, no behavioral changes were reported at the six-month follow-up assessment. When the clinical group mothers were compared with the non-clinical group mothers on the ECBI Intensity Scale at post-treatment, no significant differences were found between the groups. However, mothers in the clinical group continued to view their child's behavior as significantly more problematic (ECBI Problem Scale; $t(81) = 2.21$, $p < .05$) than mothers in the non-clinical comparison group. Figure 4.1 illustrates the mean scores of the ECBI Intensity Scale for mothers in the different groups.

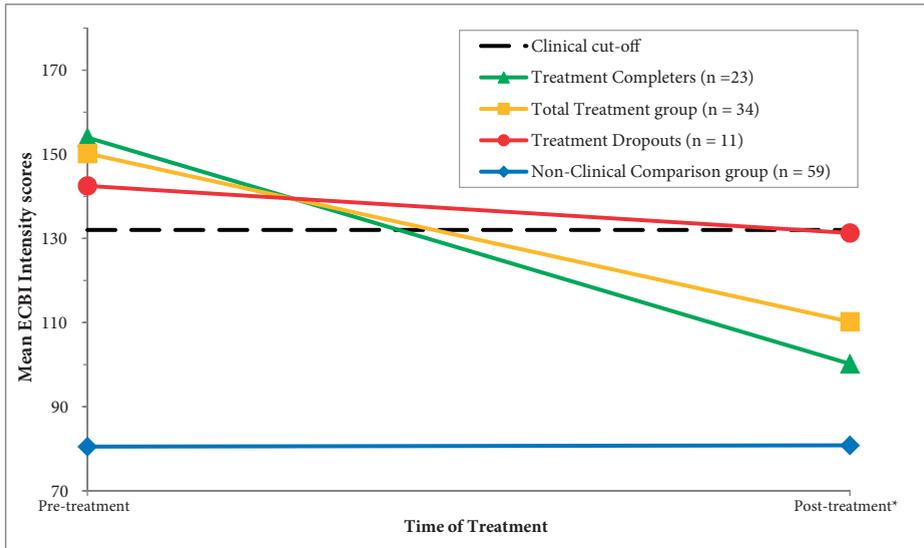


Figure 4.1. Mean scores on the Intensity Scale on the Eyberg Child Behavior Inventory (ECBI) for mothers in groups.

Note. * Post-treatment or six months follow-up for the non-clinical comparison group.

This figure also includes the means of the total treatment group including the dropouts ($n = 34$) and the families who dropped out of treatment ($n = 11$) separately. Even when the dropouts are included, the means on the ECBI Intensity Scale significantly improved from pre treatment to post-treatment (Total Treatment Group; $t(33) = 6.81, p < .001$), and large effect sizes were obtained ($d = 1.15$). Although Figure 4.1 shows a decrease in means between pre- and post-treatment assessment for the families who dropped out of treatment prematurely, no significant differences were found in this group.

Clinical significance

In order to measure individual change, the reliable change index (Jacobson & Truax, 1991) was calculated (Table 4.3). Participants of both the completer and dropout groups were classified according to the criteria of Jacobson, Roberts, Berns, and McGlinchey (1999), and were presented in the same way as in Thomas and Zimmer-Gembeck (2011). In addition, based on the US norms of the ECBI presented in the professional manual (Eyberg & Pincus, 1999), 81.4% of the mothers of the total treatment group rated their child's behavior at pre-assessment in the clinical range on one or both of the ECBI scales. After terminating PCIT, 29.7% of the mothers of this total group (dropouts included) still rated their child's behavior within the clinical range.

Table 4.3
Frequencies and percentages of Treatment Completers and Dropouts in Reliable Change Index (RCI) categories

	Recovered		Improved		Unchanged		Deteriorated		False Positive	
	Completer	Dropout	Completer	Dropout	Completer	Dropout	Completer	Dropout	Completer	Dropout
Mothers										
ECBI Intensity	17 (73.9)	2 (18.2)	0 (0.0)	0 (0.0)	4 (17.4)	7 (63.6)	0 (0.0)	1 (9.1)	2 (8.7)	1 (9.1)
ECBI Problem	15 (71.4)	2 (25.0)	0 (0.0)	0 (0.0)	6 (28.6)	5 (62.5)	0 (0.0)	0 (0.0)	0 (0.0)	1 (12.5)
Fathers ¹										
ECBI Intensity	10 (71.4)	-	1 (7.1)	-	3 (21.4)	-	0 (0.0)	-	0 (0.0)	-
ECBI Problem	8 (66.7)	-	1 (8.3)	-	3 (25.0)	-	0 (0.0)	-	0 (0.0)	-

Note. ECBI Eyberg Child Behavior Inventory; Scores > 132 on the Intensity Scale and > 15 on the Problem Scale were considered as clinically significant; Recovered Passed RCI and clinical significance; Improved Passed RCI but no clinical significance; Unchanged Unchanged RCI and unchanged or deteriorated clinical significance; Deteriorated Deteriorated in both RCI and clinical significance; False Positive improved clinical significance but unchanged RCI; RCI > 1.96 = Reliable Change Index improved and recovered categories. ¹The only father in the dropout group had missing values on the pre-assessment.

Using the reliable change index, most mothers (73.9%) reported a change in the frequency of their child's disruptive behavior, whereby their child's behavior was rated within the range of normal functioning. Nevertheless, 17.4% of the mothers who completed treatment still did not report a reliable change in their child's behavior. Although eleven families dropped out of treatment before completing treatment protocol, two families (18.2%) in this group were still classified as recovered. However, most families who dropped out of treatment reported insufficient or even a negative change in the child's behavior.

Discussion

Our study supports our hypothesis that PCIT has positive effects on the disruptive behavior of Dutch preschoolers. The study indicates that behavioral problems declined significantly during treatment. After the implementation, 40 families were treated with PCIT and 37 of those were included in this present study. The majority of families (72.5%) finished treatment protocol, however 27.5% dropped out after having participated in at least one session.

After treatment completion, most of the parents reported a significant reduction in the behavior problems of their child. The effect sizes of the reduction of their child's disruptive behavior problems were large, varying between 1.48 and 1.99 and were comparable with the effect sizes as reported in a meta-analysis on PCIT where they varied between 1.21 and 1.57 on the two ECBI scales (Thomas & Zimmer-Gembeck, 2007). Therefore, at post-treatment almost all parents reported their child's behavior in the range of normal functioning, and which did not differ from the non-clinical comparison group.

In regards to the ECBI Intensity Scale mean ratings of the non-clinical group, it is worth mentioning that these means indicate that Dutch ECBI norms differ from those mentioned in US samples. However, these current findings are similar to other European ECBI standardization studies, which also found lower means on the ECBI (Axberg et al., 2008; Reedtz et al., 2008). Although it would be recommendable to study the Dutch ECBI norms in a larger sample, the differences between norms, as compared to the US samples, may also lead to a reconsideration of the ECBI norms of normal functioning in the Dutch PCIT manual.

In over 50% of the total cases, father involvement was achieved. Father reports of child disruptive behaviors at pre- and post-treatment were similar to those of the mothers. Even though father ratings are not often reported in treatment outcome studies (Tiano & McNeil, 2005), this finding suggests that fathers could profit from their involvement in

treatment the same way that mothers do. The present findings are similar to the results of Schuhmann et al. (1998) who also included fathers and analyzed these results separately.

The results of individual changes show that even for families who dropped out before treatment protocol was completed, PCIT can be a sufficient intervention strategy for reducing child behavioral problems. However, the results also conveyed that after completing PCIT, a small group of parents still reported the behavior of their child to be within the clinical range. These results indicate that although some parents had reached the mastery skills of the Parent-Directed Interaction phase, PCIT was terminated before their child's behavior was ranked within the normal range of functioning, which was also part of the PCIT termination procedure. This suggests that therapists need to obtain additional training in order to follow up on the PCIT protocol accurately. In this current study adherence to the treatment manual was not formally assessed. Future research should address this issue.

Strengths and limitations

Our study examined the service delivery of an evidence-based treatment in a mental health community setting. This contributes to bridging the gap between research-based approaches and routine practice. It thereby also contributes to the literature on evidence-based treatments for children with disruptive behavior problems. Given the diversity of the sample, whereby 38% was categorized as non-Western, this current study also contributes to the knowledge of the effectiveness of PCIT for immigrant families and families of non-Western origin. It would be recommendable to study this specific group more extensively in future research.

However, there are also a number of limitations inherent to this study. Although the non-clinical comparison group provided valuable information about the stability and the frequency of behavior problems in this non-clinical group, no clinical control group was available and long-term effectiveness of treatment was not measured. Due to the absence of a clinical control group, improvements due to maturational or other factors could not be ruled out. However, disruptive behavior problems of young children have a high degree of stability over time if not treated (Bongers et al., 2004; Tremblay, 2006). Regarding the large effect sizes on the decrease of reported child behavior problems and the high stability of the behavior of children in the non-clinical comparison group in this study, it seems unlikely that the improvements were simply spontaneous.

Second, due to the retrospective design of this current study only parent-reports (ECBI) were available for the measurement of treatment outcome effects. As mentioned earlier, the lack of Dutch norms for the ECBI have consequences for the interpretation of the

results in the Dutch context. Thereby, the normal range of functioning of a child on the ECBI is a part of the mastery criteria to terminate PCIT. Hence, more information on parent personality characteristics, parenting stress and child behavior would provide a wider range of information for the treatment outcomes. This information is highly recommended for future research to address questions concerning the effectiveness of PCIT on other parent and child functioning areas. Furthermore, observational measures such as the Dyadic Parent-Child Interaction Coding System (DPICS; Eyberg et al., 2005) are recommended for providing more information about the behaviors, as well as the quality of parent-child interactions at pre- and post-treatment. The inclusion of a diagnostic interview for concerning child behavioral problems and the use of more independent sources (e.g., teachers) could have also improved the study.

The attrition rate (27.5%) in the current study was similar or slightly lower than other US PCIT studies carried out in community mental health settings (Lyon & Budd, 2010; Pearl et al., 2012). However, the attrition rate is still high and research is needed to identify the characteristics of specific families that are at risk of treatment drop out. Thus, more support from therapists and other professionals is needed to help high-risk families stay engaged and complete the treatment program. Nevertheless, the results do indicate that a premature termination of PCIT does not have to lead to negative outcomes on child behavior in all cases. The limitations of this study can be associated with the preliminary nature of the research and can also be identified as a consequence of a fast implementation process.

Conclusion

Despite the limitations of this study, it does provide significant evidence of short-term effectiveness of PCIT in the Netherlands. Nonetheless, future research is required to address the shortcomings of the present study. A randomized controlled trial is recommended for a further evaluation of PCIT, which can compare the results with a clinical control group and assess long-term effectiveness. Furthermore, studies in community mental health settings are necessary for obtaining knowledge about treatment effectiveness in a challenging population. Determining effective strategies for reducing treatment attrition is also important in these settings. Given the limited knowledge at this time, our findings are a step forward in the evaluation of PCIT as a promising intervention strategy in reducing child disruptive behavior problems in the Netherlands.

Chapter 5

Treating child disruptive behavior in high-risk families: A comparative effectiveness trial from a community- based implementation

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Abstract

Early intervention can prevent severe long-term effects of disruptive behavior problems in young children. Parent management training programs have proven the most effective way to treat child behavior problems. This study reports on an effectiveness trial of a community-based implementation of Parent-Child Interaction Therapy (PCIT) in comparison with the Dutch-developed Family Creative Therapy (FCT). Forty-five children (58% boys) aged between 32 and 102 months ($M = 67.7$, $SD = 15.9$) were referred for treatment, and they and their parent(s) were randomly assigned to PCIT or FCT. Treatment effectiveness was measured primarily by the degree of improvement on child behavior problems, using the Eyberg Child Behavior Inventory. Secondary outcomes included parent and teacher report data and independent observations of parenting skills and child behavior. During the trial, randomization was violated by treatment crossovers (from FCT to PCIT). Intention-to-treat analyzes revealed no significant differences in the primary outcome at six-month follow-up, but interpretation was hampered by the crossovers. Subsequent treatment-received analyzes revealed significant interaction effects between time and treatment condition, with greater improvements in child behavior and parenting skills for PCIT families compared to FCT families. Analyzes on families that fully completed the PCIT protocol also showed higher maintenance of treatment outcomes at follow-up. The treatment-received analyzes indicated promising results for the effectiveness of PCIT in treating young children's disruptive behavior problems in a high-risk population. However, caution in generalizing the conclusions is needed in view of the design difficulties in this study. Suggestions are made for enhancing treatment delivery in daily practice, and clinical implications are noted.

Introduction

Disruptive behavior disorders such as oppositional defiant disorder (ODD) and conduct disorder (CD) are highly prevalent among young children (Lavigne et al., 2009) and have been identified as the most common reason for referral to mental health services in that population (Loeber et al., 2000). Research in recent decades has revealed strong associations between these childhood adversities and developmental problems later in life in several domains (Frick & Nigg, 2012; Tremblay, 2000). Without effective treatment, the disorders have a high degree of persistence and can worsen over time (Bongers et al., 2004; Tremblay, 2006).

Long-term outcomes include academic difficulties in late school years (McGee, Prior, Williams, Smart, & Sanson, 2002), unemployment, family problems (Maughan & Rutter, 2001), and mental health problems such as depression, anxiety disorders, addiction, and antisocial personality disorders (Oldehinkel & Ormel, 2014). An early diagnosis of a disruptive behavior disorder is also a serious risk factor for subsequent youth offending, adult crime, and interpersonal violent behavior, including anti-social behavior and substance abuse (McCord et al., 2001). Such negative outcomes result in higher costs for educational, mental health, law enforcement, and social services—estimated at ten times higher for children with disruptive behavior disorders than for children without problems (Lee et al., 2012; Scott et al., 2001). Given the high prevalence and persistence of serious disruptive behavior problems and the costly trajectories of the children involved, this population is now a source of considerable public health concern. To reduce the risks of negative developmental outcomes and high public costs, early intervention is essential for young children with disruptive behavior problems.

Parent management training (PMT) programs, which target parents as the primary agents of change, have been found to be the most effective strategy to turn children with disruptive behavior away from disadvantaged developmental trajectories (Eyberg et al., 2008; Weisz & Kazdin, 2010). The accumulating empirical support for manualized PMT programs has resulted in their rapid worldwide dissemination in recent years. There is also increasing interest in the applicability of PMT programs in clinical practice under real-world conditions (Gardner, Hutchings, Bywater, & Whitaker, 2010). However, delivery of PMT programs (or evidence-based interventions in general) under real-world conditions is complex, and concerns have been raised about how compatible such interventions might be with everyday clinical practice (Weisz et al., 2015).

A review of youth psychotherapy outcome research (Weisz et al., 2005) has tested the clinical representativeness of studies in terms of three criteria: (1) study enrollment, (2)

treatment providers, and (3) settings where treatment took place. It was found that most studies took place in settings created for research (e.g., university clinics) and included young people who were recruited rather than clinic-referred or treatment-seeking (Weisz et al., 2014). Treatment was often delivered not by clinical practitioners but by graduate students or other individuals dependent on the researcher for their employment. Although there is a growing need to test PMT programs in everyday clinical practice, previous research has identified a number of problematic factors. First, there are concerns about the treatment fidelity of practitioners, who may adapt interventions because they consider the protocol unsuitable for more complex cases (Michelson et al., 2013). Second, conducting more comprehensive studies such as randomized controlled trials (RCTs) is challenging in clinical practice, given the multiple aspects of variation and the difficulties in achieving standardization (Craig et al., 2008). Third, the engagement of parents and children in treatment and research presents a challenge to treatment effectiveness in real-world community mental health settings. High-risk populations (including families with low socioeconomic status or minority ethnic backgrounds) are overrepresented in child welfare services, but they remain understudied populations. Studies focusing on these groups have shown high attrition, which compromises treatment effectiveness (Fernandez & Eyberg, 2009; Reyno & McGrath, 2006). A fourth problem is that effect sizes in PMT programs remain small to moderate (Piquero et al., 2009; Weisz & Kazdin, 2010).

Parent-Child Interaction Therapy (PCIT; Zisser & Eyberg, 2010) is a well-established, US-developed PMT program for children aged 2 to 8 who have disruptive behavior problems. PCIT teaches authoritative parenting, including nurturance, good communication, and firm control, in two stages of therapy focused on changing dysfunctional parent-child interactions. PCIT has been disseminated to Australia, Puerto Rico, and several European and Asian countries (McNeil & Hembree-Kigin, 2010), and its effectiveness in improving parent and child behavior after treatment has been widely supported in studies in different cultures (e.g., Leung et al., 2015; McCabe et al., 2012; Thomas & Zimmer-Gembeck, 2007). Post-treatment maintenance of PCIT outcomes has also been demonstrated (Eyberg et al., 2014), and evidence for its usefulness in real-world settings is increasing (e.g., Lanier, Kohl, Benz, Swinger, & Drake, 2014; Lyon & Budd, 2010; Pearl et al., 2012). Although PCIT was originally developed to treat child disruptive behavior disorders, it has since been employed successfully in other populations, including children in foster care (Mersky, Topitzes, Grant-Savelle, Brondino, & McNeil, 2014), children with developmental delays (Bagner & Eyberg, 2007), and children with autism spectrum disorders (Ginn, Clionsky, Eyberg, Warner-Metzger, & Abner, 2015). Over the past decade PCIT has also been successfully adapted to serve the needs of high-risk families in the treatment and prevention of child maltreatment (e.g., Chaffin, Funderburk, Bard,

Valle, & Gurwitsch, 2011; Chaffin et al., 2004; Kennedy, Kim, Tripodi, Brown, & Gowdy, 2014; Thomas & Zimmer-Gembeck, 2011; Thomas & Zimmer-Gembeck, 2012).

Although PCIT is well researched internationally, European research on its effectiveness is still limited. A pilot study without a clinical control group has shown promising results (Abrahamse et al., 2012), but further testing is needed in more comprehensive research designs. Research studies in real-world clinical settings could contribute to the international evidence on PCIT. Previous research on another PMT program from the US known as Incredible Years, adapted for use in the Netherlands, found effect sizes in the Dutch context similar to those in the country of origin (Gardner et al., 2015; Posthumus et al., 2012). Other Dutch outcome research on Incredible Years within socioeconomically disadvantaged ethnic minority populations has also shown that parents and children with disruptive behavior problems in those groups could benefit from a parenting intervention (Leijten, Raaijmakers, et al., 2015). On the basis of the literature, then, we presumed that providing PCIT in the Dutch context would have similar intervention outcomes and that Dutch parents would experience PCIT in similar ways to US parents.

Family Creative Therapy (FCT, a literal translation of the Dutch *Gezins-Creatieve Therapie*; Beelen, 2003; Smits, 2002) is a frequently used, Dutch-developed form of art psychotherapy. It is available in most Dutch community mental health services and is commonly provided in clinical practice for malfunctioning interaction patterns in families with children aged 2 to 16. A number of theoretical frameworks underlie FCT, including systemic therapy approaches (Minuchin, 1974; Satir, Stachowiak, & Taschman, 1994; Van der Pas, 2009) and learning by experience (Kolb, 1976). It also draws on positive psychology, focusing on a positive goal rather than a problem (Conoley & Conoley, 2009; Smits, 2008). FCT is used to improve communication between family members in families with maladaptive parent-child interactions and/or parenting difficulties (including high-risk families or families with children with learning impairments). FCT is contraindicated for parents who have substance use problems or are currently involved in major family incidents such as divorce. Empirical evidence supporting the effects of FCT, as well as international literature, is lacking. There is no lack of detailed case reports (e.g., Witte, 2013), that describe improvements in family interactions and functioning, often maintained at follow-up assessments two to five years later. However, no controlled research design or standardized outcome measures have yet been employed.

Unlike some PMT programs, both PCIT and FCT engage the parent(s) and the child. In FCT, all siblings are involved, as treatment focuses on family interaction as a whole. Both interventions aim to improve parent-child interactions; they create opportunities for parents to practice new skills during sessions—a treatment component strongly associ-

ated with program effectiveness (Kaminski et al., 2008). Although there are similarities between PCIT and FCT, their delivery also differs. While PCIT focuses mainly on the verbal aspects of parent-child interaction and on child compliance, FCT additionally emphasizes non-verbal interaction and cooperation. PCIT is characterized by a structured treatment protocol, whereas the FCT protocol requires more parental input in formulating specific treatment goals. The goals in PCIT focus mostly on reducing the child's disruptive behavior, while the FCT treatment goals are formulated positively and usually focus on improving communication between family members, such as giving more positive attention to siblings without disruptive behavior problems.

In sum, Dutch research on the effectiveness of PCIT and FCT is limited, and more research is needed to gain or improve empirical support for these interventions, particularly in real-world clinical practice. The present study assesses the effectiveness of PCIT in families with children with disruptive behavior problems in a randomized controlled trial conducted in a community mental health setting. Specifically, we address the following research questions: (1) What are the effects of PCIT in comparison with FCT in reducing children's disruptive behavior problems? (2) What are the effects of PCIT and FCT on other, related child and parent outcomes?

Methods

Participants

Children (aged 2 to 8 years) were referred to an academic center for child and adolescent psychiatry, which operates a large community mental health service for children, adolescents, and families with psychiatric problems in Amsterdam. The funding of care and services in the community mental health center comes from the local government and the Dutch health insurance system. All families had sought treatment and had been referred through the usual community channels. Recruitment for study participation took place from June 2009, to December 2012. Data collection including follow-up continued until May 2014. Children could be included in the study if (1) disruptive behavior problems were a reason for their referral, (2) they were aged between 2 and 8, (3) their parents were Dutch- or English-speaking. Child exclusion criteria were clinical signs of developmental or physical disabilities (e.g., learning impairments, deafness), but no children with such disabilities were referred to our department during the recruitment period. Family exclusion criteria were parental learning disabilities ($IQ < 80$), parental substance use disorders, and serious concerns about a child's safety in the home situation, with a high risk of out-of-home placement; no families were excluded on those risk factors during the selection stage.

Of the participating children ($N = 45$), the largest group (42.2%) were referred by another child mental health service. Twelve families (26.7%) were referred by child protection services, eight families (17.8%) were internal referrals from other departments of the community mental health center, and six families (13.3%) were referred by a general practitioner. After informed consent, families were initially assigned to PCIT ($n = 20$) or FCT ($n = 25$) using an allocation ratio of 1:1, including block randomization stratified by child age and gender (Figure 5.1). Two families allocated to PCIT did not begin therapy; one of these moved to another city after inclusion, and in the other family significant signs of sexual abuse emerged, with the parent participant suspected of being the perpetrator (sexual abuse is not typically a contraindication for PCIT, unless the parent participating in treatment is thought to be the perpetrator). Nine families initially allocated to FCT were transferred to PCIT after zero to three FCT sessions. In six of those cases, the parents or the referring counselor disagreed with the randomization outcome. The other three families crossed over after clinical judgment by the family creative therapist; in two such cases, working with constructive materials seemed inappropriate given the severity of the child's behavior problems; the other child was very young (32 months) and had trauma symptoms, so that the therapist deemed a play-based therapy like PCIT more suitable.

For the purpose of the intention-to-treat analysis, the baseline characteristics of all families initially allocated to PCIT or FCT are summarized in Table 5.1 for the total sample and the two treatment conditions. No differences were found between treatment conditions (chi-square tests or t -tests, $p < .05$), except in family income. Child age ranged from 32 months to 102 months. One child met the inclusion criteria at referral, but was 8.5 years of age by the time of the baseline assessment; we decided not to exclude that family. The biological mothers of all the participating children were involved in the treatment, and the biological fathers of 20 children (46.5%) were also actively involved.

Procedure

Referred families meeting the inclusion criteria received information about the purposes and procedures of the study. After parents provided their written informed consent, they were individually randomized to PCIT or FCT. The randomization list was prepared by a methodologist and managed by a researcher who had no further involvement in the study. After randomization, that researcher communicated the assigned treatment condition directly to the coordinating therapist, who was responsible for matching an available therapist to the family. This procedure was established to in the blindness of the research team members. Baseline assessment (T_1) was conducted prior to the start of the intervention, and post-treatment assessment (T_2) was carried out immediately after the researcher was informed about treatment completion or termination. Follow-up assess-

ments (T_3) were performed six months after the post-treatment assessment. Additionally to the parent-reports, each child's teacher was asked to complete some questionnaires at the time of the baseline and follow-up assessments. The study received approval from the Medical Ethics Committee of the Academic Medical Center of Amsterdam and was registered in the Dutch trial register (ID: NTR1743).

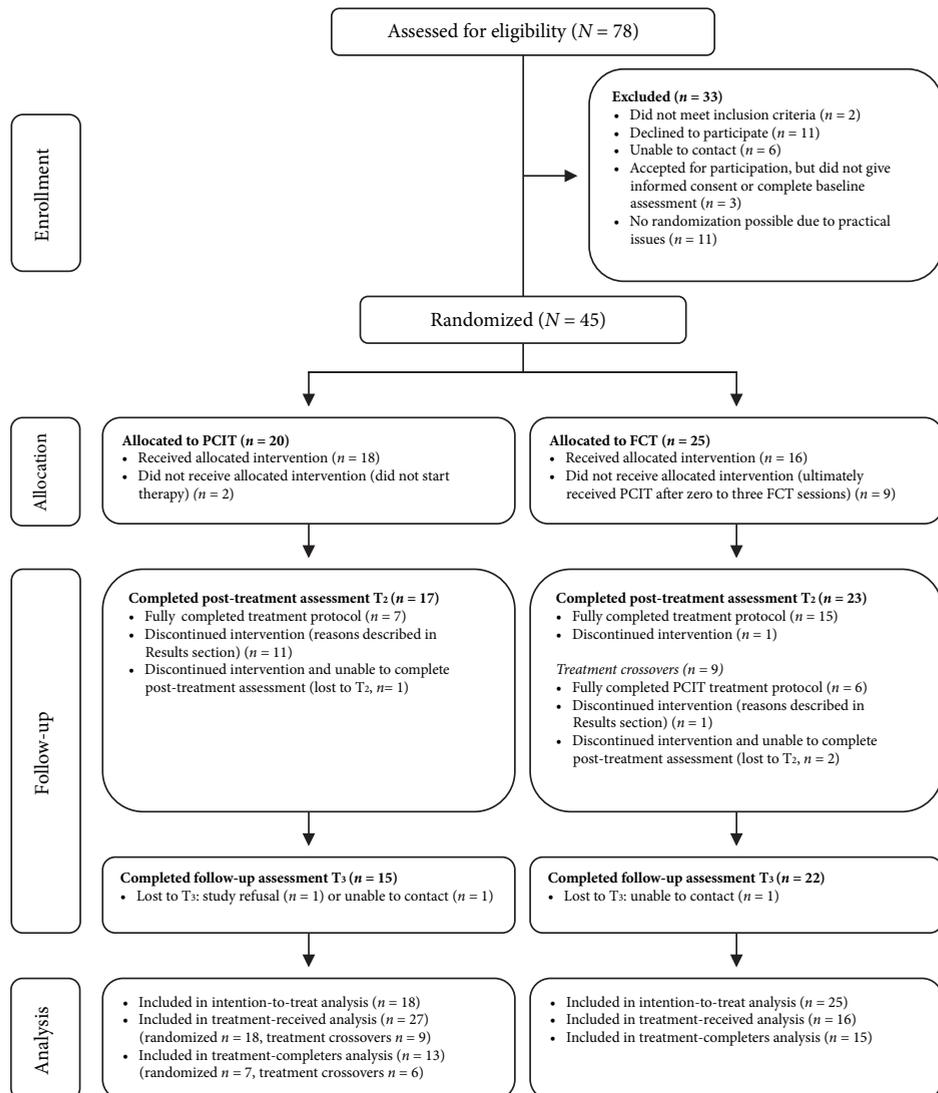


Figure 5.1. CONSORT flow diagram: Parent-Child Interaction Therapy (PCIT) and Family Creative Therapy (FCT).

Table 5.1*Demographic information for the total sample and by randomization group*

	Means (SD) or Percentages			
	Total (N = 43)	PCIT (n = 20)	FCT (n = 25)	p
<i>Child characteristics</i>				
Age (months)	67.7 (15.9)	69.8 (11.7)	66.1 (18.8)	.45
Gender (% male)	57.8	60.0	56.0	.79
Race (% Caucasian)	69.8	60.0	76.0	.23
Maltreatment history (% reported in client file)	71.1	75.0	68.0	.61
No diagnosis for disruptive behavior (%)	33.3	35.0	32.0	.93
ADHD diagnosis (% significant symptoms)	52.4	42.1	60.9	.23
ODD diagnosis (% significant symptoms)	39.0	38.9	39.1	.99
CD diagnosis (% significant symptoms)	12.5	26.3	4.3	.08
<i>Family characteristics</i>				
Mother's age (years)	35.7 (5.6)	37.3 (5.5)	34.5 (5.5)	.10
Family status (% single-parent)	40.0	45.0	36.0	.54
Family income (% < €1,000 per month)	15.2	25.0	9.1	<.05*

Note. * $p < .05$. ADHD symptoms include both inattentive and hyperactive behavior.

Treatment conditions

Parent-Child Interaction Therapy

Parents and children allocated to PCIT received an intervention that progressed through two distinct phases: Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI) (Zisser & Eyberg, 2010). Both phases started with a parental didactic session followed by weekly coaching sessions of approximately one hour. The therapist coached the parents in vivo through a one-way mirror and a wireless headset. Alongside the treatment sessions, parents were given homework sheets to record their daily skill practice at home during special playtime with their child. In the CDI phase, the parents were taught to follow the child's lead during play and were coached to use praise, reflection, imitation, description, and enthusiasm/enjoyment (PRIDE skills). This phase of treatment was intended to enhance the parent-child relationship. The number of sessions was dependent on the parent's mastery of the skills (10 behavioral descriptions, 10 reflections, 10 labeled praises, and fewer than three commands, questions, or negative verbalizations during a 5-minute observation). Once the parents met these mastery criteria, they proceeded to the PDI phase of the treatment, designed to improve child compliance. Parents were taught and coached to provide clear commands and to use consequences for compliance (praise) and non-compliance (time-out). Treatment ended when parents reached mastery criteria for PDI, as described in the original treatment protocol (Eyberg & Child Study Lab, 1999), and had rated their child's behavior as well within normal limits (Ey-

berg Child Behavior Inventory Intensity Scale ≤ 114). Although PCIT is manualized, the intervention was not time-limited. Each family received the number of sessions necessary for the parents to master the CDI and PDI skills, in order to reduce their child's disruptive behavior below clinical levels.

Family Creative Therapy

Families allocated to FCT (Beelen, 2003) were expected to bring all siblings into treatment. FCT consisted of 10 sessions of approximately one hour every two weeks, with a possible extension to as many as 15 sessions. Parents also received homework assignments to help them effectively use the time between sessions. In comparison to PCIT, the focus of FCT was more on the parents, on creating 'good-parent' experiences and improving their parental competence. The key feature was the opportunity for the parents to discuss each session's program and strategy beforehand with the therapist and to evaluate the sessions afterwards. Parents were co-responsible for the content, procedure, and role-taking during the family sessions. The premise was that carefully prepared creative work (e.g., a mosaic mirror or a diorama) offered an opportunity for parents to practice childrearing skills, such as leading the children while taking into account their individual capacities, regulating amounts of attention, setting limits, and regulating the children's emotions—all with the aim of creating experiences of success for all family members.

During the initial FCT sessions, parents were asked to formulate their goals for the therapy. Subsequently, the therapist chose a creative task to suit the parents' goals and capabilities, which could be successfully carried out during the family sessions. Prior to the session itself, the therapist prepared the parents while the children were with the co-therapist, and afterwards there was a separate parental debriefing. During the therapy sessions, and while all family members were working on the task, the therapist observed, consulted perhaps briefly with a parent, or gave extra support. The emphasis was on success in moving toward the goals in the domains the parents had formulated for themselves. FCT develops in six phases as a whole: motivation, activation, stimulation, practicing skills, insight, and a final stabilization phase.

Training and treatment integrity

Both PCIT and FCT had established procedures to monitor program fidelity. All therapists completed the formal training workshops and received additional supervision from the master trainers (PCIT) or the program developers (FCT). The training and supervision levels were similar for both interventions. In regard to the clinical representativeness, all PCIT and FCT therapists were practicing clinicians within the community mental health center, and not graduate students or researchers. Besides delivering PCIT or FCT, these therapists had diverse caseloads with broad arrays of problems. Consistent with

the Dutch and international requirements for the PCIT and FCT training workshops, all therapists had completed higher education and had bachelors and masters degrees in mental health fields.

In accordance with the established protocols, all therapy sessions were videotaped. Unfortunately, due to practical problems (e.g., lost videotapes or problems with recording systems), videos were available for only 72% of the participating families. Because therapists received additional supervision, one random treatment session for each family was coded for treatment integrity. Independent undergraduate or graduate research assistants coded the videos using component checklists for the specific treatment session in question. For PCIT, the fidelity checklists from the original treatment protocol were used. For FCT, component checklists were created on the basis of the treatment protocol and were approved by the program developers. For both types of intervention, treatment integrity was greater than 70% (72% for PCIT and 78% for FCT). Due to practical issues (e.g., lost videotapes or unavailable coders), only three quarters (74%) of the videos could be double-coded by a second research assistant; the result was a high interrater reliability of .87 (intraclass correlation).

Measures

The primary outcome was the level of child behavior problems, measured using the Intensity Scale of the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). In the present study, we generally used the mother reports in our analyzes, because those were available for all children and the number of paternal reports was smaller. However, since 46.5% of the fathers were engaged in the treatment and fathers' participation in PMT programs is considered important (Bagner & Eyberg, 2003), we also included the available father reports in our analyzes. Most of the assessment instruments we chose were commonly used measures in PCIT outcome research. In addition to the standardized questionnaires, parents completed a demographic questionnaire.

Eyberg Child Behavior Inventory

The ECBI is a widely used 36-item parent-report measure of disruptive child behavior. Specific behavior is rated on two scales: the Intensity Scale and the Problem Scale. The Intensity Scale measures the frequency of the child's behavior along a 7-point scale (1 = *never* to 7 = *always*), and the Problem Scale measures whether the parent perceives the specific behavior as a problem. Good reliability and validity have been demonstrated both for the English version (Funderburk et al., 2003) and for the Dutch translation (Abrahamse et al., 2015). In the present study, the internal consistencies (Cronbach's alpha) for the ECBI Intensity Scale were .93 for the mother reports and .95 for the father

reports. The ECBI Problem Scale internal consistencies were .91 and .90 for mother and father reports respectively.

Additionally, teachers completed the adapted version of the ECBI relevant for school situations, the Sutter-Eyberg Student Behavior Inventory-Revised (SESBI-R; Eyberg & Pincus, 1999). This 38-item questionnaire uses the same scoring and scale format as the ECBI (Intensity and Problem Scales) and it has good reliability and validity (Funderburk et al., 2003; Kirkhaug, Drugli, Mørch, & Handegård, 2012). The Cronbach's alphas for the SESBI-R in the current study were .97 for the Intensity Scale and .96 for the Problem Scale. Both Dutch versions of the ECBI and SESBI-R were back-translated and approved by the publisher (Psychological Assessment Resources, PAR). According to the professional manual (Eyberg & Pincus, 1999), the published cut-off scores were ≤ 132 (ECBI) and ≤ 151 (SESBI-R) for the Intensity Scale, and they were ≤ 15 (ECBI) and ≤ 19 (SESBI-R) for the Problem Scale.

Anxiety Disorders Interview Schedule

At the baseline assessment, the parent version of the Anxiety Disorders Interview Schedule (ADIS; Silverman & Albano, 1996) was used to assess clinically significant levels of externalizing disorders (attention-deficit hyperactivity disorder [ADHD], ODD, and CD) in the children. The ADIS is a semi-structured interview, and diagnoses are based on information about symptoms and their interference in daily life. Although the primary focus of the ADIS is on anxiety, the interview also assesses other related disorders such as mood and externalizing disorders. The ADIS interview was chosen above other assessment tools because it was a commonly used interview in our department and training on its administration was available. Only the questions for the externalizing disorders were used in the current study. Trained researchers (first and third authors) administered the ADIS, but no interrater reliability was assessed. However, the ADIS has been found to have good-to-excellent test-retest and interrater reliability (Silverman & Albano, 1996).

Maltreatment Classification System

The Maltreatment Classification System (MCS; Barnett, Manly, & Cicchetti, 1993) was used to code whether children, on the basis of their records at referral, had been exposed to any subtype of maltreatment, including physical abuse, sexual abuse, emotional maltreatment, physical neglect of basic needs, and physical neglect by lack of supervision. Subtypes were coded on a 3-point scale (0 = *not reported*, 1 = *suspicious* or 2 = *reported*). Maltreatment was recorded only if there were one or more scores of 2 (reported). Two researchers scored the client records independently. In the event of disagreement, the most accurate classification was determined in consultation with a third researcher. The average agreement between observers (Cohen's kappa) for the five MCS subtypes was .63.

Child Behavior Checklist

The Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000, 2001) contains two broadband scales that are widely used to assess internalizing and externalizing behavior problems. Our study employed two versions: the CBCL for ages 1.5 to 5 with 100 items and the CBCL for ages 6 to 18 with 113 items. Mothers rated the items on a 3-point scale (0 = *not true*, 1 = *somewhat or sometimes true*, 2 = *very true or often true*). The Cronbach's alphas in the present study were .85 for the Internalizing Scale and .93 for the Externalizing Scale.

Teachers completed the Teacher Report Form (TRF) for ages 1.5 to 5 and 6 to 18 (TRF; Achenbach & Rescorla, 2000, 2001), measuring the child's school functioning and behavioral problems in the same format as the CBCL. Internal consistencies were .79 for the Internalizing Scale and .93 for the Externalizing Scale. Good psychometric properties have been demonstrated for the Dutch versions of the CBCL and the TRF (Verhulst et al., 1996; Verhulst, Van der Ende, & Koot, 1997). To combine the CBCL and TRF age versions in the data analysis as single outcome variables, we calculated *T*-scores on the basis of the professional manual, with $T \geq 60$ indicating clinical problem behavior.

Parenting Stress Index Short Form

The Dutch translation and adaptation of the reliable and valid Parenting Stress Index Short Form (PSI-SF; Abidin, 1995) was used to measure parenting stress (De Brock et al., 1992). All 25 items were rated on a 6-point scale ranging from 1 (*completely disagree*) to 6 (*completely agree*). Reliability and validity for the Dutch version have been described as satisfactory (De Brock et al., 1992). In the present study, the sum of all items was used as an overall parenting stress scale, with internal consistencies measuring .95 for the mother reports and .97 for the father reports. According to published norms (De Brock et al., 1992), a sum score above 74 indicates a clinical level of parenting stress.

Therapy Attitude Inventory

At the post-treatment assessment, mothers were asked to complete the Therapy Attitude Inventory (TAI; Eyberg, 1992a), a 10-item consumer satisfaction measure addressing the impact of parent training on 5-point Likert scales, which vary depending on the specific item, but with higher scores indicating greater satisfaction. Items explore the parent's perceptions and confidence with respect to the discipline techniques learned, the quality of the parent-child interaction, changes in the child's behavior, and overall family adjustment. Sample items include "Regarding my confidence in my ability to discipline my child, I feel . . ." with response options ranging from (1) *much less confident* to (5) *much more confident*, and "I feel the type of program that was used to help me improve the behaviors of my child was . . ." with response options ranging from (1) *very poor* to (5) *very good*. Although there was no information about the reliability and validity of

the Dutch translation, psychometric evaluation of the original version has demonstrated adequate reliability and validity (Brestan, Jacobs, Rayfield, & Eyberg, 1999). The internal consistency of the TAI was .89 in the current study.

Dyadic Parent-Child Interaction Coding System

The Dyadic Parent-Child Interaction Coding System (DPICS; Eyberg et al., 2013) assesses the quality of parent-child interaction during three 5-minute structured situations—Child-Led Play (CLP), Parent-Led Play (PLP), and Clean-Up (CU)—which require a cumulative degree of parental control. All our DPICS observations were conducted with the mother and the child. The child’s and the parent’s verbal and nonverbal behavior were observed and frequencies were counted by independent coders. For the present study, the categories were chosen that were most relevant to treatment outcome. Six composite categories were used, derived from the professional research manual (Eyberg et al., 2013). The two child categories were Inappropriate Behavior (including Negative Talk, Negative Touch, Yell, and Whine, coded in all three situations); and percentage of Compliance (coded in PLP and CU only). The four parent categories were the percentage of Positive Following (coded in CLP only and including Behavior Descriptions, Reflections, Labeled Praises, and Unlabeled Praises divided by the total of parent verbalizations); the percentage of Negative Leading (coded in CLP only and including Commands, Questions, and Negative Talk divided by the total of parent verbalizations); Praise (the sum of all praises in the three situations, including Labeled and Unlabeled Praises); and Demandingness (the sum total of Indirect and Direct Commands, coded in all three situations). The independent coders were trained to 80% agreement with the first and third authors. All observations were transcribed to monitor interrater reliability. In every video observation, a minimum of one random situation (CLP, PLP, or CU) was coded twice to estimate reliability. High interrater reliability (intraclass correlations) was established, ranging between .67 (Direct Commands) and .96 (Questions) for the parent categories and .68 (Yell) and .91 (Negative Talk) for the child categories.

Statistical analyzes

All analyzes were performed in SPSS, version 19. First, intention-to-treat (ITT) analyzes based on the initial randomization were performed on the primary outcome measure. These analyzes included all participating families ($N = 45$), whether or not all assessments had been completed and regardless of which intervention they had actually received. Missing values were replaced according to the principles of the last-observation-carried-forward (LOCF) method. Because post-treatment and follow-up assessments were also carried out for most families that did not complete the treatment protocol, missing data was limited (see Figure 5.1). Independent t -tests were used to examine pre-treatment differences. An ANCOVA was then performed to examine the post-treatment and

follow-up differences between the two treatment conditions on the primary outcome measure (the ECBI Intensity Scale), with the baseline means entered as covariates. To analyze group differences in outcome between the interventions that the families actually received, we subsequently performed treatment-received analyzes on the final distribution (PCIT $n = 27$; FCT $n = 16$). On this treatment-received subsample, we conducted linear mixed models analyzes to investigate whether both treatments led to significant improvements in primary and secondary outcomes over time and whether significant differences in effectiveness emerged between PCIT and FCT. All observations from every treatment participant were used, irrespective of missing data. Assessment times, treatment conditions, and the time \times treatment condition interaction terms were entered into the model. Analyzes were performed using an unstructured covariance matrix, as that model showed the best fit based on the smallest $-2 \log$ likelihood value (Twisk, 2013).

Additionally, effect sizes were calculated by dividing the baseline and follow-up means by the pooled standard deviations, whereby 0.2 indicated a small effect, 0.5 a medium effect, and 0.8 or higher a large effect (Cohen, 1992). A number of families did not fully complete the PCIT and FCT treatment protocols. In order to examine the consequences of the attrition for the outcomes regarding treatment effectiveness at post-treatment and maintenance at follow-up, we repeated the linear mixed models analyzes on this treatment-completers subsample separately.

To determine whether the changes in child behavior were clinically relevant, we calculated clinical significance and reliable change indices (RCIs; Jacobson & Truax, 1991) on the individual child level for the primary outcome measure, the ECBI Intensity Scale. Clinical significance at follow-up was established if the score had fallen below the published clinical cut-off score of 132. RCIs were determined by dividing the magnitude of change between baseline and follow-up scores on the Intensity Scale by the standard error of the difference score.

Results

Baseline problem levels

At the baseline assessment, a structured clinical interview, the ADIS (Silverman & Albano, 1996), was administered to the mother to assess the presence of clinically significant levels of ADHD, ODD, and CD symptoms, based on diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 2000). The ADIS was administered for 42 children. All children had been referred for disruptive behavior problems in the home or school setting, but for

15 of them (35.7%) the mothers not reported clinically significant symptom levels meeting DSM-IV criteria for the various disorders. Eight children (19.0%) met the criteria for ADHD only, three (7.1%) for ODD only, and one (4.8%) for CD only. Ten children (23.8%) met the criteria for both ADHD and ODD, one child for ADHD and CD, and one child for ODD and CD. Three children met the criteria for all three disorders (ADHD, ODD, and CD). Chi-square and Fisher's exact tests revealed no significant differences between the two treatment groups on the distribution of the diagnoses (Table 5.1).

Based on the criteria established by Barnett et al. (1993) for the MCS, 71.1% of the children had been exposed to some subtype of child maltreatment. As noted above, signs of sexual abuse emerged in one family after its inclusion in the study, with the participating parent being the suspected perpetrator. Since sexual abuse is contraindicated for PCIT if the parent participant is the perpetrator, that family did not start treatment. The high prevalence of child maltreatment indicated that the study sample included a large proportion of high-risk families. Prevalence did not significantly differ between families allocated to PCIT and to FCT (Table 5.1).

Frequency analyzes on maternal baseline data for the total sample revealed that the majority of the mothers reported elevated levels of parenting stress and child disruptive behavior. In more detail, 63% of the mothers reported clinical levels of stress on the PSI-SF ($M = 87.5$, $SD = 25.6$). In terms of disruptive behavior problems, the majority of participating children were rated within the clinical range on the ECBI Intensity Scale (56% of children, $M = 142.7$, $SD = 32.3$), the ECBI Problem Scale (61%, $M = 16.8$, $SD = 8.4$), and the CBCL Externalizing Scale (75%, $M = 68.3$, $SD = 10.2$). In addition, 65% were rated within the clinical range for internalizing behavior problems (CBCL Internalizing Scale; $M = 61.9$, $SD = 8.1$). For the teacher-reports, these means and percentages were lower. Nonetheless, the majority of the children were still reported by teachers to be within the clinical range on the TRF Externalizing Scale (62% of children, $M = 63.5$, $SD = 9.7$), but not on the SESBI-R Intensity Scale (39%; $M = 130.5$, $SD = 49.3$). Although elevated frequencies of child disruptive behavior were thus apparent in the school situation, most teachers did not perceive those behaviors as a problem. On the ECBI Problem Scale, 31% of the scores were in the clinical range ($M = 8.7$, $SD = 10.4$). In comparison with the mother reports, clinical levels for internalizing behavior problems (TRF) were not frequently reported by the teachers (28%, $M = 56.9$, $SD = 7.8$).

Intention-to-treat analyzes

All the families in the sample were first analyzed on the primary outcome measure, the ECBI Intensity Scale, on the basis of their initially allocated treatment condition (PCIT, $n = 20$; FCT, $n = 25$). The LOCF method was applied, whereby families were included

regardless of whether they had completed all three assessments or crossed over to PCIT. The independent t -test revealed no baseline difference on the ECBI Intensity Scale between the treatment conditions, $t(43) = 0.61, p = .55$. After adjustment for baseline means, no significant difference between the treatment conditions emerged on the ECBI Intensity Scale either at post-treatment, $F(1, 42) = 2.17, p = .148$, or at six-month follow-up, $F(1, 42) = 0.45, p = .50$. Analyzes omitting the LOCF method did result in one different primary outcome for the intention-to-treat analyzes at post-treatment—with PCIT families showing marginally significantly lower post-test means than FCT families, $F(1, 39) = 4.04, p = .05$ —but not at follow-up. Since family income levels significantly differed between groups, analyzes were repeated with family income as a covariate, but all outcomes (LOCF and non-LOCF) remained unaffected.

Treatment-received analyzes

Because nine families had switched from FCT to PCIT treatment after randomization, we performed additional analyzes to compare results on the primary and secondary outcome variables on the basis of the intervention *actually received* by the participating families. Unadjusted means and the results of the linear mixed models analyzes assessing improvement over time and differences between treatment conditions are reported in Table 5.2. Independent t -tests and chi-square tests revealed no significant differences between the two treatment-received groups on baseline means and demographics.

Compared with the baseline scores, the mothers, fathers, and children who received PCIT showed significant improvements on all primary and secondary outcome measures at post-test and follow-up, with two exceptions: observed child inappropriate behavior showed significant change between baseline and follow-up, but not at post-test; and child non-compliance (DPICS) did not change significantly either at post-test or follow-up. For the families that received FCT, most outcome measures showed no significant improvements at post-treatment or follow-up. Negative parenting behavior (DPICS) did decline significantly after treatment, and that was maintained at follow-up. Child externalizing behavior (CBCL) decreased significantly between baseline and follow-up.

Some domains showed greater improvement after PCIT than after FCT, as revealed in significant interaction effects between time and treatment on the ECBI Intensity Scale (both parents), ECBI Problem Scale (father), DPICS Negative Parental Leading, and DPICS Praise. Within-group effect sizes (T_1 – T_3) were calculated, and for FCT these indicated low-to-medium effects ranging from 0.03 (Child Non-Compliance) to 0.55 (ECBI Problem Scale), whereas for PCIT they indicated medium-to-high effects from 0.31 (Child Non-Compliance) to 1.57 (Negative Leading). Between-group effect sizes at follow-up indicated low-to-medium effects for PCIT on child behavior (reported and

Table 5.2
Unadjusted means and within- and between-group comparisons in the treatment-received subsample

Measures	Baseline (T ₁)			Post-test (T ₂)			Follow-up (T ₃)			Effect size <i>d</i>					
	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i> (time × treatment)	Within-group T ₁ -T ₃	Between-group T ₃		
<i>Child behavior</i>															
ECBI Intensity (<i>mother</i>)	PCIT	27	144.6	31.1	26	103.7	36.4	<.001*	20	114.2	46.7	.21	.005*	0.77*	-0.50
	FCT	16	139.4	35.0	16	137.8	30.0	.86	13	133.2	25.8	.17		0.20	
ECBI Intensity (<i>father</i>)	PCIT	14	156.5	22.8	12	101.9	37.6	.001*	10	116.6	43.9	.32	.02*	1.14*	-0.18
	FCT	8	132.3	40.3	7	133.7	36.6	.51	5	123.7	35.9	.98		0.22	
ECBI Problem (<i>mother</i>)	PCIT	24	16.9	8.1	24	9.6	7.6	<.001*	17	9.1	10.2	.87	.25	0.84*	-0.32
	FCT	14	16.6	9.9	14	14.6	7.6	.46	13	12.0	7.5	.20		0.55	
ECBI Problem (<i>father</i>)	PCIT	14	20.1	5.5	10	9.9	8.5	.001*	10	11.8	9.5	.68	.02*	1.08*	-0.43
	FCT	5	17.8	9.1	7	18.7	9.1	.11	4	16.3	11.4	.34		0.15	
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CBCL Internalizing (<i>T-score</i>)	PCIT	26	61.9	7.9	20	54.7	8.5	.002*	20	51.3	12.2	.16	.15	1.00*	-0.65
	FCT	14	61.9	8.9	16	59.4	7.6	.17	13	58.2	8.5	.86		0.44	
CBCL Externalizing (<i>T-score</i>)	PCIT	26	68.0	11.1	20	62.7	10.0	<.001*	20	60.1	14.0	.57	.22	0.63*	-0.42
	FCT	14	68.7	8.9	16	65.6	7.7	.16	13	64.7	7.3	.41		0.50*	
<hr/>															
DPICS Inappropriate Behavior	PCIT	27	17.6	16.9	23	12.1	13.5	.13	20	9.4	9.0	.40	.99	0.61*	-0.39
	FCT	15	19.9	20.5	15	14.5	12.2	.45	11	13.2	10.3	.53		0.41	
DPICS % Non-Compliance	PCIT	27	45.3	23.8	23	33.2	25.9	.10	20	37.2	27.7	.40	.20	0.31	0.18
	FCT	15	32.8	25.1	15	40.6	25.3	.27	11	31.8	31.7	.63		0.03	

Table 5.2
(continued)

Measures	Baseline (T ₁)			Post-test (T ₂)			Follow-up (T ₃)			Effect size <i>d</i>					
	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i> (T ₁ -T ₂)	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i> (T ₂ -T ₃)	Within-group T ₁ -T ₃	Between-group T ₃	
<i>Parenting stress</i>															
PSI-SF (mother)	PCIT	25	87.0	27.0	21	72.2	28.7	<.001*	18	71.1	33.6	.70	.52	0.52*	-0.32
	FCT	16	88.3	24.1	16	78.5	22.4	.23	12	79.7	16.8	.31		0.42	
PSI-SF (father)	PCIT	14	91.9	28.3	11	60.5	26.5	.002*	10	59.9	22.1	.84	.07	1.26*	-0.74
	FCT	8	85.3	28.2	7	86.4	30.6	.43	5	77.8	26.1	.27		0.27*	
<i>Parenting skills</i>															
DPICS % Positive Following	PCIT	27	7.3	4.4	24	15.1	11.4	.005*	20	18.2	15.8	.51	.13	-0.94*	0.86
	FCT	15	7.1	5.6	15	8.1	4.9	.57	12	8.0	5.7	.98		-0.16	
DPICS % Negative Leading	PCIT	27	43.0	12.1	24	26.9	11.0	<.001*	20	23.2	13.1	.22	.01*	1.57*	-1.51
	FCT	15	43.2	8.0	15	34.8	8.5	.01*	12	41.1	10.5	.11		0.48	
DPICS Praise	PCIT	27	7.8	5.4	23	19.4	18.5	.006*	20	14.1	9.5	.13	.02*	0.81*	0.88
	FCT	15	8.3	6.7	15	5.3	4.0	.10	11	7.2	5.7	.79		0.17	
DPICS Demandingness	PCIT	27	29.2	14.9	23	18.7	8.6	.003*	20	17.9	13.4	.47	.45	0.79*	-0.18
	FCT	15	28.4	18.8	15	25.0	12.7	.50	11	20.4	14.5	.35		0.48	

Note. * $p < .05$. Tests of significance for assessment time and for time-treatment interaction used the baseline score as reference point. For DPICS % Positive Following and for DPICS Praise, higher means indicate improvement. Asterisks in the T₁-T₃ within-group effect size column indicate significant change from baseline to follow-up.

observed) and parenting stress (PSI-SF), a high effect for PCIT on parenting behavior (DPICS), and a low effect for FCT on child compliance (DPICS).

Treatment satisfaction (TAI) was significantly higher among mothers who received PCIT ($M = 39.9$, $SD = 7.3$) than among those receiving FCT ($M = 34.4$, $SD = 5.0$), $t(33.24) = 2.68$, $p = .01$. On the teacher-reports in both treatment conditions, no significant decrease was found between baseline and follow-up mean scores. Nor did significant between-group differences emerge in terms of baseline and follow-up difference scores for the SESBI Intensity Scale, $t(26) = -0.17$, $p = .87$, or the TRF Externalizing Scale, $t(24) = -0.39$, $p = .70$.

In regard to individual change, both clinical change and RCIs were calculated per case. For 40% of the mothers who received PCIT, as well as a smaller proportion of the FCT mothers (15%), a reliable and clinically significant change at follow-up was evident in the frequency of their child's disruptive behavior (ECBI Intensity Scale). These mothers now rated their child's behavior within the range of normal functioning (traditional clinically significant change), and a statistically reliable change in their child's reported behavior was measured between baseline and follow-up.

Treatment-completers analyzes

Of the 27 families that received PCIT, 14 families (52%) did not fully complete the treatment protocol. Seven families dropped out before attending 10 sessions; seven others attended 10 or more sessions but did not completely finish the protocol. Treatment completion was defined as completing the PCIT protocol by reaching the mastery criteria for Child-Directed Interaction and Parent-Directed Interaction skills. After premature termination of PCIT, data collection for most families was continued. Of the 16 families that received FCT, just one family (6%) dropped out before completing the 10 or 15 treatment sessions. For the entire study, the treatment attrition rate was 35%.

There were several reasons why families terminated treatment before completing the protocol. Four families (27%) left PCIT because parents felt treatment was no longer necessary. Three families (20%) stopped showing up for treatment, and another three families (including the FCT dropout) had too many severe family problems to continue treatment. In five cases, parents did not actually drop out, but the therapist made a clinical judgment to end treatment before all completion criteria were met, due primarily to stagnation of therapeutic progress.

Families that fully completed the PCIT treatment protocol attended an average of 22 treatment sessions ($SD = 8.0$, $MIN = 10$, $MAX = 39$), with means of 11 CDI sessions (SD

= 3.9) and 10 PDI sessions ($SD = 4.0$). The time-limited protocol of FCT included 10 sessions, but treatment for six families was extended to a maximum of 15 sessions. The FCT group as a whole received an average of 12 sessions ($SD = 2.4$). For the treatment completers, the total length of treatment differed significantly between the PCIT and the FCT participants, $t(23) = 4.34, p < .001$.

Table 5.3 shows the unadjusted means for the treatment-completers group. These reveal substantial post-treatment reductions in child behavior problems and parenting stress as well as considerable improvements in parenting skills. Significant interaction effects between time and treatment were found for the ECBI Intensity Scale (both parents), ECBI Problem Scale (father), CBCL Externalizing and Internalizing Scales, DPICS Child Non-Compliance, PSI-SF (father), and DPICS Positive Following, Negative Leading, and Praise. Moreover, in the PCIT completers group a lower degree of remission was observed between post-treatment and follow-up, indicating higher treatment maintenance for families that fully completed the PCIT protocol in comparison with families that fully completed FCT. PCIT completers also showed higher effect sizes and higher treatment satisfaction ($M = 45.4, SD = 3.6$) than FCT completers ($M = 34.0, SD = 4.93$), $t(23) = 6.25, p < .001$. Because of the significant difference in numbers of sessions between PCIT and FCT, analyzes were repeated to control for the number of sessions completed. Except for the DPICS Child Non-Compliance measure ($p = .07$), all interaction effects remained significant.

Similar results emerged for individual change. In the PCIT treatment-completers group, higher percentages with clinically significant and with reliable changes were found. The majority of mothers at post-treatment (83%) and follow-up (55%) rated their child's behavior within the range of normal functioning; reliable changes from baseline to post-treatment or follow-up were also apparent.

Table 5.3
Unadjusted means and within- and between-group comparisons in the treatment-completers subsample

Measures	Baseline (T ₁)						Post-test (T ₂)						Follow-up (T ₃)						Effect size <i>d</i>		
	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>P</i> (T ₁ -T ₂)	<i>n</i>	<i>M</i>	<i>SD</i>	<i>P</i> (T ₂ -T ₃)	<i>P</i> (time × treatment)	Within-group T ₁ -T ₃	Between-group T ₃						
<i>Child behavior</i>																					
ECBI Intensity (<i>mother</i>)	PCIT	13	154.7	27.2	12	96.0	33.4	<.001*	11	103.0	43.1	.56	.002*	1.44*	-0.85						
	FCT	15	139.5	36.2	15	137.5	31.1	.84	13	133.2	25.8	.19		0.20							
ECBI Intensity (<i>father</i>)	PCIT	8	165.9	11.3	7	104.0	37.4	.02*	6	112.8	46.3	.56	.03*	1.57*	-0.26						
	FCT	8	132.3	40.3	7	133.7	36.6	.51	5	123.7	35.9	.98		0.22							
ECBI Problem (<i>mother</i>)	PCIT	11	19.9	6.8	12	10.3	8.7	.002*	11	9.7	10.9	.89	.35	1.12*	-0.24						
	FCT	13	17.9	8.3	13	14.5	7.9	.23	13	12.0	7.5	.24		0.75							
ECBI Problem (<i>father</i>)	PCIT	8	22.4	6.3	6	9.8	10.5	.01*	6	11.1	10.9	.85	.02*	1.47*	-0.46						
	FCT	5	17.8	9.1	7	18.7	9.1	.11	4	16.3	11.4	.34		0.15							
CBCL Internalizing (<i>T-score</i>)	PCIT	12	63.5	7.3	10	54.4	7.3	.002*	11	49.3	12.6	.17	.05*	1.38*	-0.83						
	FCT	13	61.2	8.8	15	59.1	7.7	.25	13	58.2	8.5	.89		0.36							
CBCL Externalizing (<i>T-score</i>)	PCIT	12	71.1	11.2	10	61.5	9.4	<.001*	11	56.1	13.9	.31	.009*	1.19*	-0.78						
	FCT	13	68.5	9.2	15	65.2	7.8	.16	13	64.7	7.3	.47		0.46*							
DPICS Inappropriate Behavior	PCIT	13	18.6	19.7	13	9.9	13.0	.16	10	8.7	9.2	.74	.72	0.65	-0.46						
	FCT	14	16.6	16.6	14	14.9	12.6	.80	11	13.2	10.3	.48		0.25							
DPICS % Non-Compliance	PCIT	13	49.9	25.1	13	28.2	22.8	.03*	10	30.6	25.7	.69	.04*	0.76	-0.04						
	FCT	14	30.3	24.0	14	39.0	25.5	.27	11	31.8	31.7	.63		-0.05							

Table 5.3
(continued)

Measures	Baseline (T ₁)			Post-test (T ₂)			Follow-up (T ₃)			Effect size <i>d</i>					
	Group	<i>n</i>	<i>M</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i> (T ₁ -T ₂)	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i> (T ₂ -T ₃)	<i>p</i> (time × treatment)	Within-group T ₁ -T ₃	Between-group T ₃	
<i>Parenting stress</i>															
PSI-SF (mother)	PCIT	11	93.3	25.6	10	75.3	29.9	.01*	11	66.3	29.7	.75	.35	0.97*	-0.56
	FCT	15	89.7	24.3	15	79.1	23.0	.23	12	79.7	16.8	.32		0.48	
PSI-SF (father)	PCIT	8	107.5	18.6	6	63.3	27.8	.008*	6	53.2	15.4	.59	.007*	3.18*	-1.15
	FCT	8	85.3	28.2	7	86.4	30.6	.43	5	77.8	26.1	.27		0.27*	
<i>Parenting skills</i>															
DPICS % Positive Following	PCIT	13	7.6	4.1	13	18.4	12.0	.005*	10	22.4	13.3	.59	.005*	-1.51*	1.41
	FCT	14	7.3	5.7	14	7.2	3.6	.99	12	8.4	5.7	.68		-0.14	
DPICS % Negative Leading	PCIT	13	44.1	13.8	13	23.3	9.7	<.001*	10	21.1	16.7	.44	.01*	1.51*	-1.44
	FCT	14	43.3	8.3	14	35.2	8.7	.02*	12	41.1	10.5	.14		0.23	
DPICS Praise	PCIT	13	8.5	4.0	13	23.3	21.4	.03*	10	16.0	10.1	.20	.02*	-0.99*	1.08
	FCT	14	7.8	6.7	14	4.7	3.3	.11	11	7.2	5.71	.50		0.10	
DPICS Demandingness	PCIT	13	31.6	16.2	13	16.4	6.3	.007*	10	17.4	14.5	.82	.287	0.93*	-0.20
	FCT	14	27.1	18.8	14	23.3	11.3	.473	11	20.4	14.5	.52		0.40	

Note. * $p < .05$. Tests of significance for assessment time and for time-treatment interaction used the baseline score as reference point. For DPICS % Positive Following and for DPICS Praise, higher means indicate improvement. Asterisks in the T₁-T₃ within-group effect size column indicate significant change from baseline to follow-up.

Discussion

The aim of this study was to examine the effectiveness of the PMT programs PCIT and FCT in treating young children with disruptive behavior among high-risk families in the Netherlands. Our study satisfied the criteria for clinical representativeness put forward by Weisz et al. (2005) with respect to participant enrollment (community referrals), practicing clinicians as therapists, and a community mental health center as the treatment setting. As the importance of research for everyday clinical practice has been emphasized in recent years (Michelson et al., 2013; Weisz et al., 2015), our study helps to bridge the gap between science and practice. Most research on PCIT has used wait-list control conditions (e.g., Schuhmann et al., 1998; Thomas & Zimmer-Gembeck, 2011) or adapted forms of PCIT (McCabe et al., 2012; Nixon et al., 2004) to compare treatment effects. The current study made a direct comparison between two different treatment approaches in two active conditions, a procedure not commonly seen in community-based implementation studies.

Multiple methods (using questionnaires, interviews, and observations) and multisource data collection procedures (including parents, independent observers, and teachers) were used to address the research questions. The randomization process suffered from some treatment crossovers, and the ITT analyzes found no significant differences at follow-up between families that were initially allocated to PCIT or to FCT. Given the randomization violation, the ITT results were subject to limited interpretation, and it remains unknown whether an effect would have emerged without crossovers. As a consequence, we conducted additional analyzes on the treatment-received and treatment-completers subsamples and regarded this study as a comparative effectiveness trial.

The results from the treatment-received and treatment-completers analyzes suggest a preferred status for PCIT in the treatment of children with disruptive behavior problems and their parents. In comparison with FCT, parents who received PCIT reported significantly larger reductions in child disruptive behavior and were significantly more satisfied with the treatment. Mothers who received PCIT were also observed to interact with their children using more positive statements, including reflections, behavioral descriptions, and praises, and fewer negative leading statements, including questions, commands, and criticism. Significant decreases in parenting stress and in child internalizing problems were also reported among PCIT families. For all these outcome measures, the effects were maintained at the six-month follow-up assessment. Parents who received FCT reported no significant improvements on any of these outcome measures, though we did observe a significant post-treatment decline in negative leading behavior and a significant follow-up decline in child externalizing behavior (CBCL) by FCT parents. Effect sizes and

analyses examining individual change confirmed the preferred status of PCIT, with the majority of mothers who completed it reporting reliable change and rating their child's behavior within the range of normal functioning. Despite the significant improvements in the PCIT families, however, a substantial percentage of the mothers still did not report reliable and clinical changes in their child's behavior.

Surprisingly, beyond the increase in child compliance after PCIT completion, no significant changes were observed in children's inappropriate verbal and non-verbal behavior in both treatment groups. The high variance between means at the baseline, post-treatment, and follow-up assessments may explain why changes were not large enough to be significant. Although child categories of the DPICS are not commonly reported in PCIT outcome studies, a recent study on discriminating families with ODD or CD children and families with children without a diagnosis using the DPICS, revealed no differences between these groups on child inappropriate behavior (Bjørseth et al., 2015). Therefore, we encourage including DPICS child behavior categories in future research, in order to study discrepancies between observed and reported child behavior. Also, it is important to investigate the sensitivity of the DPICS to observe actual child behavior and to detect change between baseline and post-treatment assessments. Despite the fact that the subsample size of the fathers included in this study was small, results suggested that fathers who were actively involved in treatment did benefit from PCIT in similar ways to mothers in terms of diminishing child behavior problems and parenting stress. These findings were comparable to other PCIT outcome research that included fathers (Schuhmann et al., 1998). For FCT, however, fathers did not report significant improvements.

Although caution is required in the interpretation of our findings that PCIT was more effective than FCT, some ideas can be mentioned why PCIT was superior to FCT for children with disruptive behavior problems. For example, the theoretical model of PCIT may be closer to theoretical models about the etiology of disruptive behavior, such as the use of the social learning theory in attempt to reduce the coercive pattern in parent-child interactions (Patterson, 1982). In addition, PCIT includes the technique of differential social attention, which may have contributed to the change in the child's behavior (Zisser & Eyberg, 2010). In comparison to FCT, PCIT also teaches parents to use time-out as a disciplinary technique and teaches them to respond consistently to their child's behaviors. These program elements were associated with larger effect sizes in the reduction of child disruptive behavior and the improvement of parenting skills (Kaminski et al., 2008). Another possible explanation may be that PCIT was more intense with on average 22 weekly sessions compared to 12 bi-weekly FCT sessions.

Similarly to previous community-based PCIT studies (Lyon & Budd, 2010; Pearl et al., 2012), the attrition rate for PCIT in our study was high (52%). Also, this attrition rate for PCIT was higher than for the 10 to 15-session FCT (6%). However, 50% of families that did not complete the PCIT treatment protocol did take part in at least 10 sessions. Although findings from our study show that those families were able to benefit from PCIT treatment sessions without completing the full protocol, results also revealed a more substantial gain for families that achieved the specific mastery criteria of the Child-Directed Interaction and Parent-Directed Interaction skills as prescribed for treatment completion. Higher treatment maintenance outcomes for treatment completers may indicate that families that make more improvement are also more likely to complete treatment, especially given that lack of improvement was a frequent reason for premature termination of PCIT. Such findings are also consistent with previous PCIT outcome research showing that dropouts had poorer long-term outcomes (Boggs et al., 2004). Terminating PCIT before reaching mastery criteria may constitute failure experiences in these families, which could in turn undermine the long-term effectiveness of treatment.

A previous study on PCIT that preceded the treatment proper with a motivational intervention to discourage attrition found higher program retention for referred families with limited motivation (Chaffin et al., 2011; Chaffin et al., 2009). Because some high-risk families do not receive treatment voluntarily, but are referred by child protection services, a motivational intervention might be useful to support such families in completing treatment. Also, a standard 12-session PCIT protocol has also been studied (Thomas & Zimmer-Gembeck, 2012), with treatment outcomes that were either positive or significantly better than outcomes for the original non-time-limited PCIT protocol. This would also be a relevant direction for future research, as well as an implication for practice, in particular for families that are motivated but do not succeed in reaching mastery criteria. Similar to the higher treatment retention found for FCT families, the 12-session study underlined the benefits of a clear end-point—not only for parents, but also for policy-makers and professionals in clinical practice, in view of the upcoming trend to provide shorter treatments in order to reduce the costs of services. Given the high attrition rates, especially in community mental health settings, future research is recommended on the additional motivational components and the restricted number of treatment sessions. That may inhibit dropout and improve the feasibility of PMT programs in everyday practice.

The present study included a large percentage (71%) of children exposed to maltreatment. Although the study did not focus on preventing child maltreatment or improving parent-child interactions after maltreatment, evidence is growing on the effectiveness of PCIT in the prevention of child maltreatment (Thomas & Zimmer-Gembeck, 2011). That

is relevant because PCIT teaches parental skills that are effective, nonviolent alternatives to physical discipline. Moreover, in families where parents have been physically abusive, PCIT has been found effective in reducing future reports of physical abuse (Chaffin et al., 2011). However, another recent study on the prevention of child maltreatment in a community mental health setting did not find large effects for PCIT (Lanier et al., 2014). Given the high prevalence of maltreatment in the current study, and in the light of the previous literature, additional research on the prevention of child maltreatment in the Dutch context is advised.

Although PCIT parents reported significant more improvements in terms of child disruptive behavior problems compared to FCT parents, significant evidence reflecting such improvements was not apparent in the teacher-reports for either the PCIT or the FCT children. Before the start of treatment, teachers had reported less clinical-range student behavior than mothers, suggesting low agreement between teachers and parents about children's problem behavior. Discrepancies between mother and teacher ratings may reflect differences in the contexts where informants observe the behavior as well as differences in perceptions (De Los Reyes & Kazdin, 2005). Several factors might explain the inconsistency in our findings. Parents and teachers may agree about which children have the severest problem behaviors, but parents may be more sensitive to those behaviors. The discrepancies between parent and teacher-reports might have also been a consequence of the high comorbidity in our sample; behavior problems associated with ADHD tend to be less context-specific, while children may exhibit ODD problems in a single context, particularly if that context is not well structured. And because children moved on to other grades during the treatment phase, the teachers that completed the baseline questionnaires were usually not the same ones that completed the follow-up ones.

Strengths and limitations

The overall findings of our study contribute to the literature on the transportability of parenting interventions across countries and cultures. Excepting the translation, PCIT did not require any substantial cultural adaptation to work effectively in a new environment. It produced similar changes on similar measures, consistently with the findings reported in the meta-analysis by Gardner et al. (2015). The current study could therefore provide an important impetus for the international dissemination of effective PMT programs in clinical practice. Nevertheless, some limitations of our study do need to be noted. We believe these relate to doing research in clinical practice outside a university clinic. First, although all children were referred for disruptive behavior problems, we did not screen the children for eligibility for inclusion. As a consequence, a large percentage (35%) of the children in our sample did not have a clinically significant level of ADHD, ODD, or CD on the structured clinical interview (ADIS). Hence, one limitation may be

that the study sample was smaller and more heterogeneous than samples from research clinics; on the other hand, our research is more reflective of real-world clinical practice. Second, for some families, disagreement with the randomization outcome arose, so that they ultimately received PCIT rather than the allocated FCT. That constituted a violation of the randomization principle in the controlled trial; it required additional analyses and therefore necessitates caution in generalizing our conclusions. A third issue is that our outcome measures were better suited to the PCIT treatment approach than to that of FCT. It therefore came as no surprise that greater improvements in parenting skills (DPICS) were seen in the PCIT group, since those were criteria that parents had to master to progress through that treatment. The primary focus of PCIT is to change the behavior of one child in the family. FCT focuses more on changing the interaction patterns in the family as a whole, leading to more enjoyment in parenting and more positive behavior. The outcome measures assessed child behavior and specific parenting behavior; they did not assess family interaction patterns. Accordingly, they were not suited to determining whether the aims of FCT were achieved. At the same time, beyond the fact that the ECBI and DPICS are both part of the PCIT intervention, it is important to point out that significant improvements among PCIT families were seen on additional outcome measures as well, including child internalizing behavior problems and parenting stress—improvements that were not seen in the FCT condition.

Conclusion

The comparative effectiveness trial reported on here gives modest support to the evidence base for PCIT as an intervention to treat child disruptive behavior problems in high-risk Dutch families. Our findings provide evidence for the successful international dissemination of this PMT program in real-world clinical practice. Although the challenges of randomization formed a limitation in interpreting the effect sizes of outcomes, the fact that we implemented the trial in a real-world context makes the findings promising from the standpoint of dissemination. Despite the study limitations, our results suggest that PCIT is preferable to FCT for treating young children with disruptive behavior problems. Replication in other samples and settings is needed before more definite conclusions can be drawn about the effectiveness of PCIT in the Netherlands.

Chapter 6

Risk factors for attrition from an evidence-based parenting program: Findings from the Netherlands

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Abstract

Parent management training programs for the treatment of childhood disruptive behavior problems are increasingly being transported from their country of origin to international settings, where family interactions may be influenced by different cultural expectations and children's mental health problems may be addressed within different systems. Demonstrating reductions in symptoms within the new population is insufficient to support the wide-scale transport of a treatment model. Implementation outcomes, such as the rates of treatment retention and factors related to treatment attrition must also be considered. We explored predictors of attrition in families from the Netherlands referred to the evidence-based parenting program Parent-Child Interaction Therapy (PCIT). Participants included 40 children with disruptive behavior problems (2-7 years; 68% boys) and their caregivers. Attrition (40%) was somewhat lower than findings with similar community samples in the US. The strongest predictors of attrition were child age and maternal levels of internalizing symptoms. Low parental demandingness and high child compliance before start of treatment were predictors for limited treatment engagement. Meeting the needs of families at risk for attrition is an important goal for parent management training programs within and outside the US if families in need of services are to benefit from them.

Introduction

Parent management training (PMT) programs are considered best practice interventions for the treatment of childhood disruptive behavior problems (Eyberg et al., 2008; Kaminski et al., 2008). Based on social learning theory, the PMT approach teaches parents strategies to reduce children's disruptive behaviors and to increase prosocial behaviors using techniques such as modeling, shaping, and social reinforcement (Patterson, 2002). Robust evidence for the efficacy of these interventions has led to increasing dissemination within the United States (US) and internationally. With broader dissemination, however, there has come an increasing need to assess the success of PMT programs in other settings and cultures.

To date, research on the implementation of PMT programs in countries outside of the ones in which they were developed is still sparse and has primarily focused on client outcomes (Leung et al., 2015; Posthumus et al., 2012). A recent meta-analysis found that effect sizes for the reduction of childhood disruptive behavior problems remained similar when transporting evidence-based parenting interventions from one Western culture to another (Gardner et al., 2015). However, the analyzes did not consider additional factors that might influence the long-term effectiveness and sustainability of programs in their new settings, such as rates of treatment retention and attrition. Studies on the transport of PMT programs within the US indicate that when implemented within different populations from the one with which it was originally developed, attrition may be higher (Fernandez, Butler, & Eyberg, 2011; McWey, Holtrop, Wojciak, & Claridge, 2015) and satisfaction may be lower (Parra Cardona et al., 2012). Evidence of symptom reduction alone is therefore insufficient to define an intervention as effective and compatible within a new population. It is also necessary to investigate implementation outcomes such as treatment retention and the factors related to retention (Proctor et al., 2011).

Few studies have examined the implementation outcomes of evidence-based PMT interventions across cultures. A review of 610 studies on the cross-cultural implementation of PMT programs found only two of those studies to systematically evaluate implementation (Baumann et al., 2015), making it impossible to draw firm conclusions about the success of these programs outside the culture or country in which they were originated. Although we do not yet know much about how treatment retention and factors related to retention may differ from a program's country of development to other countries, much evidence exists from within the US that demonstrates significant problems with treatment retention (i.e., high attrition) among PMT programs. Particularly in everyday clinical practice, such as community mental health settings, with attrition rates as high as 75% (Lanier et al., 2011; Lyon & Budd, 2010; Pearl et al., 2012). These high rates of attrition not only limit

the feasibility of implementing PMT within clinical populations, they can lead to negative outcomes for children and families. Although information about long-term outcomes for children who drop out of treatment is limited (Boggs et al., 2004), research on the long-term effects of untreated or insufficiently treated disruptive behavior problems in children shows that these children are at higher risk for the development of serious difficulties in broad areas of functioning, including difficulties in family, peer, school, and community interactions (Broidy et al., 2003). Thus, if a PMT program is to be successfully transported to another country, where family interactions may be influenced by different cultural expectations and children's mental health problems may be addressed within different systems, it is important to evaluate the level of treatment attrition and identify factors related to treatment retention within the new setting prior to wide-spread adoption.

We explored factors related to treatment attrition in a sample of families participating in the evidence-based parenting program Parent-Child Interaction Therapy (Eyberg & Funderburk, 2011; Niec, Gering, & Abbenante, 2011; Zisser & Eyberg, 2010). PCIT was developed to treat the families of children two to seven-years-of-age with serious disruptive behavior problems. In two phases of treatment, parents are coached by therapists via an in-ear microphone while playing with their child. In the first phase of treatment, Child-Directed Interaction (CDI), parents are taught child-centered interaction skills to enhance their relationships with their children. During the second phase of treatment, Parent-Directed Interaction (PDI), parents learn healthy, effective discipline strategies. In PCIT, successful treatment completion is clearly defined. Parents who successfully complete PCIT have reached mastery of a defined skill set (e.g., child-centered interaction skills, effective discipline skills) in both phases of treatment, children's disruptive behavior problems are reported within the normal range, and parents express confidence in their ability to manage their children's behaviors (Eyberg & Funderburk, 2011). These assessment-driven criteria mean that PCIT is not time-limited and treatment completion equals treatment success. Attrition, thus, is defined as the decision by parents to discontinue the intervention prior to meeting criteria for completion (Wierzbicki & Pekarik, 1993).

PCIT has demonstrated efficacy in reducing childhood disruptive behavior problems, enhancing parenting skills, and reducing parental stress and child abuse potential (Thomas & Zimmer-Gembeck, 2007, 2012). Although the efficacy of PCIT has been established among families who complete treatment, as with other PMT programs, high attrition in US samples remains a concern. For instance, Pearl et al. (2012) found that only 33% of the families receiving PCIT in a community setting completed both phases of treatment, while an evaluation of PCIT in an urban community found an attrition rate of 75% (Lyon

& Budd, 2010). Among African American families, the attrition rate was as high as 56% (Fernandez et al., 2011). The attrition rates in these effectiveness studies, with families seeking treatment in community mental health center settings, are often higher than attrition rates reported from the primarily university-based investigations (18%-35%; Thomas & Zimmer-Gembeck, 2007), but even in the university clinic settings, more than a third of families presenting in need of services may not receive the full treatment.

While attrition from PCIT in community settings is consistently high, findings regarding the risk factors for attrition are mixed. Among US families, those with cumulative risk factors appear more likely to drop out than others, but inconsistent results exist regarding the individual factors that are the most predictive. For example, while family structure, minority status, and socioeconomic status have predicted attrition in some families (Bagner & Graziano, 2012; Fernandez et al., 2011). Other findings have not supported the predictive value of demographic factors or child factors for attrition in PCIT, but instead suggest that parent stress and parents' verbal criticisms to their children are associated with dropout (Werba et al., 2006). Therapist behaviors such as interview style and coaching techniques used during early treatment sessions have also been found to predict attrition in PCIT (Barnett et al., 2015; Harwood & Eyberg, 2004).

Inconsistent findings regarding the risk factors for treatment attrition from PCIT and the widely varying attrition rates across samples suggests that the barriers for treatment success are at least in part specific to a population and the context in which the intervention is delivered, emphasizing the importance of investigating attrition rates when PCIT is transported to a new country. The investigations of attrition factors reported above included only US families; thus, much remains to be done to better understand factors impacting the implementation of PCIT outside the US. As part of an evaluation of the transport of PCIT from the US to the Netherlands, we examined predictors of treatment attrition from PCIT in a sample of high-risk Dutch families. Delivery of the intervention in the Netherlands occurred within a community mental health center serving a primarily high-risk population of families (e.g., low socioeconomic status, high incidence of child maltreatment). Utilization of the mental health care services in the Netherlands is largely independent from financial constraints, because all Dutch children are covered by private health insurance. However, a recent study among Dutch children receiving psychotherapy in a community mental center revealed substantial rates of dropout (De Haan, Boon, Vermeiren, Hoeve, & De Jong, 2015), emphasizing the need to study factors related to treatment attrition in Dutch families receiving PCIT.

Methods

Participants

Participants were 40 children (67.5% boys) and their parents who had been referred for treatment of disruptive behavior problems to a community mental health center in Amsterdam region, the Netherlands between 2009 and 2012. Children ranged in age from 2.8 to 7.7 years ($M = 5.2$, $SD = 1.2$). All families had been referred through the usual community channels. The largest group, thirteen families (32.5%) were referred by child protection services. Twelve families (30.0%) were referred by another child mental health service, nine families (22.5%) were internal referrals from other departments of the community mental health center, and six families (15.0%) were referred by a general practitioner.

According to the diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 2000) and based on a structured interview conducted with mothers at the pretreatment assessment, 47.3% of the children had clinical symptoms of attention deficit hyperactivity disorder (ADHD), 34.2% displayed clinical symptoms of oppositional defiant disorder (ODD), and 23.7% displayed clinical symptoms of conduct disorder (CD). Comorbid symptoms (ADHD and/or ODD, and/or CD) were found in 31.6% of the children. Although all children were referred for disruptive behavior problems in the home or school setting, for 36.8% of the children, mothers did not report clinically significant symptoms of ADHD, ODD, or CD. Based on the classification criteria for ethnic background of Statistics Netherlands (2015a), 70.0% of the children had a Dutch ethnicity, 10.0% had another background (for example Australian or Russian), and 20.0% had a non-Western background (Turkish or Surinamese/Antillean).

Biological mothers participated in treatment for all children. Forty-five percent of the children were living in a single-parent family. Mothers' mean age was 36.1 ($SD = 6.2$) and maternal education, based on the criteria of Statistics Netherlands (2015b), for 3% of the sample was categorized as low (no education or primary education), 61.8% as middle (secondary education) and 32.4% as high (some higher academic education). Additionally, 20.7% of the families had an income lower than €1,000 per month. Based on the criteria of Barnett et al. (1993) using the Maltreatment Classification System (MCS), 65.0% of the children had been exposed to a subtype of child maltreatment, including physical abuse, sexual abuse (non-parent perpetrator), emotional maltreatment, physical neglect of basic needs or physical neglect with lack of supervision. Thus, the sample included a large proportion of high-risk families.

Procedure

Referred families who were identified as potential candidates for PCIT were informed during the intake procedure about a research study on the effectiveness of PCIT. A medical ethics committee approved this study, and when parents agreed to participate, they signed to indicate their informed consent. The present study consisted of two samples, 23 families received PCIT based on random assignment and 17 families received PCIT without randomization, but both samples received the same assessments. Except for treatment satisfaction from the post-test assessment, we used the baseline assessment only. Families were visited at their homes where they completed the questionnaires and participated in a video observation. Although the mother reports were available for all children, we also included the available father reports in our analyses. The observations, however, were conducted with the mothers.

Measures

Demographic information questionnaire

In addition to the standardized measures, parents completed a questionnaire to obtain background information on age, gender, ethnicity, education level, income, and family status.

Anxiety Disorders Interview Schedule

The Anxiety Disorders Interview Schedule (ADIS; Silverman & Albano, 1996) is a semi-structured interview used for diagnosing different DSM-IV disorders. The primary focus of the ADIS is anxiety, but the interview is also used to reliably assess clinically significant levels of externalizing disorders (ADHD, ODD, and CD) in the children. The diagnoses are based on information about symptoms and their interference in daily life. Trained research assistants administered the ADIS to mothers. Although interrater reliability was not evaluated in the current study, the ADIS has been found to have good-to-excellent psychometric properties, including interrater reliability, which ranges from .73 to .77 (*kappa*) for externalizing disorders (Lyneham, Abbott, & Rapee, 2007).

Eyberg Child Behavior Inventory

The Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999) is a 36-item parent rating scale on disruptive child behavior including two scales. The ECBI Intensity Scale measures the frequency of disruptive behaviors along a 7-point scale, and the ECBI Problem Scale measures whether the parent perceives the specific behavior as problematic. Good reliability and validity have been established for both the English version and the Dutch translation (Abrahamse et al., 2015; Funderburk et al., 2003). In this study, the internal consistencies (Cronbach's alpha) for the Intensity Scale were .92 for mothers and

.93 for fathers. For the Problem Scale internal consistencies for mothers and fathers were .89 and .88, respectively. The published cut-off scores for the Intensity Scale were ≤ 132 and ≤ 15 for the Problem Scale.

Parenting Stress Index Short Form

The Dutch translation of the Parenting Stress Index Short Form (PSI-SF; Abidin, 1995) is a 25-item parent-report which measures dysfunctional parent-child interaction, stress in the parent-child relationship, and difficult behavior of the child with a 6-point rating scale. In the present study, the sum of all items was used as an overall scale of parenting stress, with an internal consistency of .94 for mothers and an internal consistency of .96 for fathers. The reliability and validity for the Dutch version were described as satisfactory and according to the published norms, a sum score above 74 indicated a clinical level of parenting stress (De Brock et al., 1992).

Adult Self-Report

The Adult Self-Report (ASR; Achenbach & Rescorla, 2003) was used to assess externalizing and internalizing psychopathology in the mothers. This 123-item self-report shows good reliability and validity and includes eight empirically based syndrome scales: 'Withdrawn', 'Somatic Complaints', and 'Anxious/Depressed' (together the Internalizing Scale); 'Rule-Breaking behavior', 'Aggressive Behavior', and 'Intrusive' (together the Externalizing Scale), 'Thought Problems' and 'Attention Problems'. Both Internalizing and Externalizing scales were included in this study. Internal consistencies were .93 and .85, respectively. Since maternal distress was found to be a predictor of attrition in earlier research (Fernandez & Eyberg, 2009), we included the percentage of mothers with clinically elevated levels on the Anxious/Depressed syndrome scale ($\alpha = .92$) as a separate variable. We used the clinical cut-off scores defined by Achenbach and Rescorla (2003): ≤ 14 for the Anxious/Depressed Syndrome Scale; ≤ 19 for the Internalizing Scale; and ≤ 13 for the Externalizing Scale.

Therapy Attitude Inventory

The Therapy Attitude Inventory (TAI; Eyberg, 1992a) is a 10-item parent-report used to measure satisfaction with the process and outcomes of PCIT. Parents rate their satisfaction along a 5-point Likert scale, with higher scores indicating higher satisfaction. Items explore parents' perceptions of the improvements in their children's behaviors and their ability to manage difficult behaviors. The psychometric evaluation of the original version demonstrated adequate reliability and validity (Brestan et al., 1999). In the present study, the internal consistency of the TAI was .91.

Dyadic Parent-Child Interaction Coding System

The Dyadic Parent-Child Interaction Coding System (DPICS; Eyberg et al., 2005) is a behavioral coding system that measures the quality of the parent-child interaction during three 5-minute structured situations: Child-Led Play (CLP), Parent-Led Play (PLP), and Clean-Up (CU), each of which require an increasing order of parental direction and control. Children's and parents' verbal and nonverbal behavior were observed and frequencies were counted by independent coders. Six composite categories were included in the present study based on previous PCIT attrition research (Eyberg et al., 2013; Fernandez & Eyberg, 2009; Werba et al., 2006). We included two child categories and four parent categories (see Table 6.1), derived from the comprehensive DPICS manual for research and training (Eyberg et al., 2013) and based on Eyberg et al. (2014).

Table 6.1

DPICS composite categories used in this study (based on Eyberg et al., 2014)

Category	Equation*
Child Inappropriate Behavior (<i>coded in all 3 situations</i>)	${}_c\text{NTA} + {}_c\text{NTO} + {}_c\text{YE} + {}_c\text{WH}$
% Child Compliance (<i>coded in PLP and CU only</i>)	${}_c\text{CO} \div [{}_p\text{DC} + {}_p\text{IC} - {}_c\text{NOC}]$
% Parent Positive Following (<i>coded in CLP only</i>)	$[{}_p\text{BD} + {}_p\text{RF} + {}_p\text{LP} + {}_p\text{UP}] \div {}_p\text{TV}$
% Parent Negative Leading (<i>coded in CLP only</i>)	$[{}_p\text{DC} + {}_p\text{IC} + {}_p\text{QU} + {}_p\text{NTA}] \div {}_p\text{TV}$
Parent Praise (<i>coded in all 3 situations</i>)	${}_p\text{LP} + {}_p\text{UP}$
Parent Demandingness (<i>coded in all 3 situations</i>)	${}_p\text{DC} + {}_p\text{IC}$
Total parent verbalizations (TV) (<i>denominator for % categories</i>)	${}_p\text{NTA} + {}_p\text{DC} + {}_p\text{IC} + {}_p\text{QU} + {}_p\text{BD} + {}_p\text{RF} + {}_p\text{LP} + {}_p\text{UP} + {}_p\text{TA}$
* Abbreviations of individual DPICS categories in the Equation column	
Negative Talk (NTA)	Negative Touch (NTO)
Direct Command (DC)	Compliance (CO)
Indirect Command (IC)	No Opportunity for Compliance (NOC)
Labeled Praise (LP)	Yell (YE)
Unlabeled Praise (UP)	Whine (WH)
Question (QU)	
Reflection (RF)	
Behavior Description (BD)	
Neutral Talk (TA)	

Note. CLP Child-Led Play, PLP Parent-Led Play, CU Clean Up. The subscripts ${}_c$ and ${}_p$ indicated child and parent categories, respectively.

The independent coders received extensive training in the coding system and were trained to 80% agreement with the first author, a PCIT researcher that translated the DPICS manual into Dutch and also trained to mastery by a PCIT master trainer. All observations were transcribed to facilitate coding. In every video observation, a minimum

of one random situation (CLP, PLP, or CU) was coded twice to estimate reliability. High interrater reliability (intraclass correlations) was established, ranging between .66 (Direct Commands) and .98 (Questions) for the parent categories and .68 (Yell) and .91 (Negative Talk) for the child categories.

Treatment integrity

In the Netherlands, PCIT was first implemented in clinical practice in 2007. Therapists completed the initial forty-hour training workshop and followed the detailed PCIT treatment manual current at the time (Eyberg & Child Study Lab, 1999). All therapists had a higher educational background in the mental health fields and received additional supervision. Most sessions were videotaped for treatment integrity checks. One random session for each participating family was coded for treatment integrity. Unfortunately, due to practical reasons (e.g., lost videotapes or problems with recording systems) videos were available for only 55% of the participating families. Adherence with the PCIT protocol was on average .78, which is lower than levels reported in other PCIT studies that were usually above 90% (Fernandez & Eyberg, 2009; Lyon & Budd, 2010). Most videos (73%) were double coded by another research assistant indicating a high average interrater reliability of .88 (intraclass correlation).

Statistical analyzes

Because of the small sample size, a discriminant function analysis was conducted instead of logistic regression (Tabachnick & Fidell, 2007). This analysis identifies uncorrelated linear combinations of the predictor variables. To identify potential predictor variables for inclusion in the discriminant function analysis, demographic characteristics and baseline scores on the ECBI, PSI-SF, ASR, and DPICS were compared for treatment completers and dropouts using independent samples *t*-tests or chi-square tests. Predictor variables that differed between the completer and the dropout group at $p < .05$ were included as independent variables to predict group membership (treatment completer versus dropout).

Results

Treatment attrition

According to the therapist records, 24 families (60%) successfully completed PCIT, including achieving mastery criteria for the CDI and PDI interaction skills and reporting scores of child conduct within the normal range (Eyberg & Funderburk, 2011). In Figure 6.1, the number of sessions each family attended is presented before treatment completion or dropout. On average, parents attended 18 sessions ($SD = 7.6$) before completing treatment, with means of 9 CDI sessions ($SD = 4.6$) and 8 PDI sessions ($SD = 3.5$). Sixteen

families (40%) dropped out before meeting PCIT completion criteria, with means of 11 sessions ($SD = 9.6$). Two families dropped out after the first CDI session and another eight families dropped out during the CDI phase. During the PDI phase, six families dropped out of PCIT. There were several reasons why families terminated treatment before completing the PCIT treatment protocol. Six families (38%) dropped out because parents felt their children's behaviors improved enough or parents felt treatment was no longer necessary due to limited motivation. In five cases (31%), PCIT was discontinued because life or family stressors interfered, such as parental mental health problems. In one case, signs of sexual abuse emerged in the child, with the participating parent being the suspected perpetrator. (Sexual abuse is not typically considered as a contraindication for PCIT, unless the parent in treatment is thought to be the perpetrator.) In two families (13%), more intensive treatment was started before completing the treatment protocol due to stagnation of treatment progress and three families (19%) stopped attending due to mothers' pregnancy or the family moving out of the area.

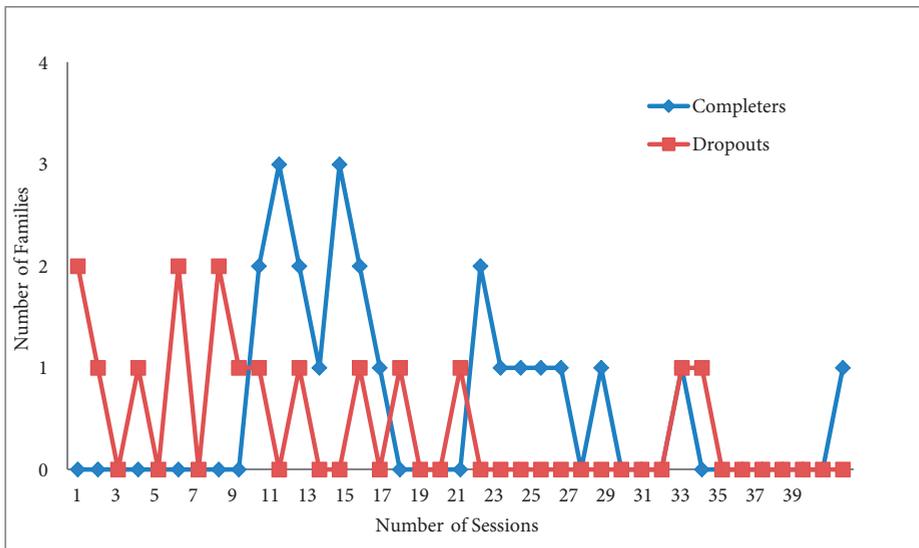


Figure 6.1. Number of sessions that families attended before completing or dropping out PCIT.

Differences between treatment completers and dropouts

Table 6.2 shows the percentages and means of families who completed treatment and families who dropped out before reaching mastery skills at baseline assessment. Significant differences between groups ($p < .05$) were found for child age, the percentage of positive parental following (DPICS), and the percentage of clinically elevated maternal anxiety/depressed symptoms (ASR). Additionally, the child's maltreatment history, family status, and parental demandingness (DPICS) were found significant ($p < .10$). These

differences indicated that families who did not complete PCIT had older children and included mothers having elevated levels of internalizing psychopathology. In addition, a trend was observed that children in the dropout group were often exposed to some

Table 6.2

Differences on demographic and baseline variables between treatment completers and dropouts

	Mean (SD) or Percentages	
	Completers (<i>n</i> = 24)	Dropouts (<i>n</i> = 16)
<i>Child characteristics</i>		
Age (years)	4.8 (1.1)	5.6 (1.2)**
Ethnicity (% non-Western background)	16.7	25.0
Maltreatment history (% reported in client file)	54.2	81.3*
No ADHD, ODD, or CD diagnosis (%)	30.4	46.7
ADHD diagnosis (% significant symptoms)	52.2	46.7
ODD diagnosis (% significant symptoms)	34.8	26.7
CD diagnosis (% significant symptoms)	21.7	13.3
ECBI Intensity Scale (<i>mother</i>)	150.3 (28.0)	139.4 (35.3)
ECBI Problem Scale (<i>mother</i>)	18.6 (6.2)	15.3 (9.0)
ECBI Intensity Scale (<i>father</i>)	158.5 (18.2) ^a	148.0 (48.1) ^b
ECBI Problem Scale (<i>father</i>)	20.6 (6.3) ^a	17.1 (9.3) ^b
DPICS Inappropriate behavior	17.5 (16.8)	14.8 (14.6)
DPICS % Compliance	51.0 (24.4)	59.8 (22.1)
<i>Family characteristics</i>		
Mother's age (years)	37.2 (6.1)	34.4 (6.2)
Father's age (years)	38.9 (6.1) ^a	36.8 (8.1) ^b
Family status (% single parent)	33.3	62.5*
Father involvement (% involved in treatment)	41.7	31.3
Educational level (% low education)	4.5	0.0
Family income (% < €1.000 per month)	11.8	33.3
PSI Parenting stress (<i>mother</i>)	87.8 (22.5)	82.9 (26.5)
PSI Parenting stress (<i>father</i>)	99.1 (19.8) ^a	83.8 (33.8) ^b
ASR Internalizing Behavior Scale (<i>mother</i>)	17.1 (9.8)	22.5 (15.7)
ASR Externalizing Behavior Scale (<i>mother</i>)	9.5 (6.4)	12.9 (6.4)
ASR Anxious Depressed (% clinical level) (<i>mother</i>)	9.1	43.8***
DPICS % Positive Following	12.0 (10.4)	7.0 (4.4)**
DPICS Total Praise	11.0 (8.3)	6.7 (6.3)
DPICS % Negative Leading	40.4 (18.1)	42.1 (10.6)
DPICS Demandingness	33.9 (17.8)	26.1 (13.9)*

Note. **p* < .10; ***p* < .05; ****p* < .01. ^a *n* = 15; ^b *n* = 8.

subtype of child maltreatment and lived in a single-parent family. In addition, mothers in this group showed both less positive parenting behavior and less demanding behavior before start of treatment during the interactions with their child. Treatment satisfaction (TAI) was significantly higher among mothers who completed PCIT ($M = 44.4, SD = 4.7$) than among mothers who terminated the intervention prematurely ($M = 34.4, SD = 5.8$), $t(28) = 4.89, p \leq .001$.

Predictors of treatment completion and dropout

A discriminant function analysis was conducted to identify if the significant independent variables were also predictor of group membership (treatment completer or dropout). Discriminant function analysis requires normal distributed data for the predictor variables. However, data of DPICS Percentage of Parental Positive Following was positively skewed and therefore a log transformation was performed for this variable. Because log transformation is not possible for 0 values, three cases with a 0 score were adapted to 0.01.

The analysis included child age, Percentage of Parental Positive Following, and maternal clinical level of Anxious/Depressed symptoms (0 = *below clinical cut-off*, 1 = *above clinical cut-off*) and the discriminant function was significant, Wilk's $\lambda = 0.62, \chi^2(4) = 16.80, p = .001$. Analysis of the structure matrix coefficients revealed that when controlling for the remaining predictors, child age and a clinical level of mothers' anxious/depressed symptoms were both the best predictor of group membership (0.55), followed by Positive Parenting Behavior (-0.26). It is recommended to use 0.3 as a cut-off value for interpreting predictor variables (Afifi & Clark, 1996), indicating that child age and a clinical level of anxious/depressed symptoms were the only predictors for treatment dropout and had together a $R^2 = .39$. Using a jackknife procedure, which accounted for potential sample bias, we obtained a cross-validation estimate of the outcome classification. Based on this procedure, 68.4% of the families were correctly classified as treatment completer or dropout. More specifically, among treatment completers 17 of 22 (77.3%) were classified correctly, and for dropouts, 9 of 16 (56.3%) families were classified correctly.

Additional analyzes for dropouts with fewer than 12 sessions

In this study, six of the sixteen families who dropped out from treatment attended 12 or more PCIT sessions (up to 32 sessions; see Figure 6.1), but were considered to have dropped out, because they did not meet criteria for treatment completion due to the previously mentioned reasons (e.g., parental mental health problems, stagnation in treatment progress, and other life/family stressors). These six families received more treatment sessions than the 12 treatment sessions found effective in previous effectiveness trials using a time-limited abbreviated version of PCIT (Nixon et al., 2004; Thomas & Zimmer-Gembeck, 2012). When families attend 12 or more treatment sessions,

termination before completing the PCIT treatment protocol may be no consequence of limited engagement of the parents. Treatment dropout after attending the number of

Table 6.3

Differences on demographic and pre-test variables between families completing treatment or attended 12 or more sessions and dropouts according PCIT protocol criteria

	Mean (SD) or Percentages	
	Completers or attended ≥ 12 treatment sessions (<i>n</i> = 30)	Dropouts (<i>n</i> = 10)
<i>Child characteristics</i>		
Age (years)	5.1 (1.2)	5.4 (1.3)
Ethnicity (% non-Western background)	20.0	20.0
Maltreatment history (% reported in client file)	60.0	80.0
No ADHD, ODD, or CD diagnosis (%)	28.6	60.0*
ADHD diagnosis (% significant symptoms)	53.6	40.0
ODD diagnosis (% significant symptoms)	39.3	10.0*
CD diagnosis (% significant symptoms)	21.4	10.0
ECBI Intensity Scale (<i>mother</i>)	150.2 (27.7)	133.3 (38.7)
ECBI Problem Scale (<i>mother</i>)	17.4 (7.4)	16.8 (8.4)
ECBI Intensity Scale (<i>father</i>)	158.0 (21.1) ^a	143.4 (57.0) ^b
ECBI Problem Scale (<i>father</i>)	20.1 (5.8) ^a	16.6 (12.1) ^b
DPICS Inappropriate behavior	18.3 (16.6)	10.7 (12.4)
DPICS % Compliance	49.9 (23.0)	72.4 (21.3) ^{***}
<i>Family characteristics</i>		
Mother's age (years)	37.1 (6.0)	33.0 (6.0)
Father's age (years)	39.5 (6.4) ^a	33.3 (6.3) ^b
Family status (% single parent)	36.7	70.0*
Father involvement (% involved in treatment)	43.3	30.0
Educational level (% low education)	3.8	0.0
Family income (% < €1.000 per month)	14.3	37.5
PSI Parenting stress (<i>mother</i>)	89.7 (22.4)	74.7 (26.3)
PSI Parenting stress (<i>father</i>)	97.6 (18.5) ^a	79.8 (43.8) ^b
ASR Internalizing Behavior Scale (<i>mother</i>)	19.2 (13.0)	19.8 (12.5)
ASR Externalizing Behavior Scale (<i>mother</i>)	10.8 (7.1)	11.6 (4.9)
ASR Anxious Depressed (% clinical level) (<i>mother</i>)	17.9	40.0
DPICS % Positive Following	10.8 (9.9)	7.2 (3.9)
DPICS Total Praise	10.3 (8.2)	6.1 (5.4)
DPICS % Negative Leading	42.0 (17.1)	38.3 (8.9)
DPICS Demandingness	34.0 (16.7)	21.0 (12.5) ^{**}

Note. **p* < .10; ***p* < .05; ****p* < .01. ^a *n* = 18; ^b *n* = 5.

treatment sessions (≥ 12) associated with effectiveness may imply that families are not able to reach criteria for treatment completion. To distinguish these families from other dropout families, analyses were conducted to identify differences between families that completed the PCIT treatment protocol or attended ≥ 12 treatment sessions ($n = 30$) and dropouts who attended less than 12 sessions ($n = 10$). Table 6.3 shows the percentages or means for this group distribution at baseline assessment. Again significant differences were found between families who completed PCIT or attended ≥ 12 treatment sessions and dropouts. The level of parental demandingness (DPICS) was significantly lower and the percentage of child compliance (DPICS) was significantly higher for families who terminated treatment before attending 12 sessions and reaching mastery criteria. Additionally, the variables family status, no ADHD, ODD, or CD diagnosis, and significant ODD symptoms significantly differed between groups at $p < .10$.

A discriminant function analysis was repeated for the distribution of families who completed PCIT including the dropout families who attended 12 or more treatment sessions compared to families who did drop out treatment before attending 12 sessions. The discriminant function analysis included Child Compliance and Parental Demandingness as independent predictor variables. Because Parental Demandingness was positively skewed, a log transformation was conducted for this variable. The discriminate functions revealed a significant association between groups and both predictors, Wilk's $\lambda = 0.79$, $\chi^2(2) = 8.73$, $p = .013$. In addition, the predictor variables were significantly correlated ($-.44$). The predictors accounted for 21.0% (R^2) of the between group variability. Closer analysis of the structure matrix revealed that Child Compliance was the best predictor of group membership (0.85), followed by Parental Demandingness (-0.84). Using the jackknife procedure in this analysis, 77.5% of the families were correctly classified. For the families that completed PCIT or received ≥ 12 treatment sessions, 28 of 30 (93.3%) were classified correctly, and among dropout families attending less than 12 sessions 4 of 10 (40%) were classified correctly.

Discussion

The present study investigated attrition factors as part of an evaluation of the implementation of an evidence-based PMT program, PCIT, in the Netherlands. PCIT was implemented in a Dutch community mental health setting serving primarily high-risk families. Because previous research has revealed inconsistent findings regarding risk factors for treatment attrition, our study contributes to the knowledge on attrition when PCIT is disseminated to another country and Western culture. Using the PCIT completion criteria, 40% of the families who started treatment dropped out before they reached

mastery of the defined skill set, before they reported their child's disruptive behavior problems within the normal range, and before they expressed confidence in their ability to manage their children's behaviors. Forty percent of the families terminating treatment before completing the PCIT protocol is higher than attrition rates reported in studies conducted in university-clinic settings (18%-35%; Thomas & Zimmer-Gembeck, 2007), but slightly lower than the attrition rates (above 50%) found in studies conducted in US community settings (e.g., Lanier et al., 2011; Pearl et al., 2012). The difference in the attrition rates may be explained by differences between the Dutch and US system. For example, financial difficulties are often mentioned as a barrier for treatment participation in US studies (e.g., Koerting et al., 2013; Lyon & Budd, 2010), but in the Netherlands, mental health care services are largely independent from financial barriers, because all children are covered by private health insurance. Also, in contrast to the situation in the US, no association between help-seeking behavior and socioeconomic status was found in Dutch families (De Haan et al., 2015; Zwaanswijk et al., 2003). In addition, differences between Dutch and US parents' general attitude toward receiving mental health services might account for differences in attrition rates. In the Netherlands, research on attitudes and barriers-to-care for mental health services is limited, but a study among young Dutch adults revealed that problem perception is often a barrier for treatment (Vanheusden et al., 2008).

The findings of the present study showed that child age and a clinical elevated level of maternal anxious and depressed symptoms predicted whether families completed or dropped out of PCIT. Mothers with younger children and who were not anxious or depressed were more likely to reach mastery criteria for treatment completion. Also, this study distinguished families who dropped out but attended 12 or more treatment sessions and families who attended less than 12 sessions before they terminated PCIT prematurely. Additional analyzes on the group of families who completed PCIT including the dropout families who attended 12 or more treatment sessions and the group of families who did drop out treatment before attending 12 sessions revealed that lower observed child compliance and higher observed parental demandingness predicted longer engagement in PCIT for at least 12 sessions.

With regards to the child's age, many PCIT research studies included children in the age between 2 and 7 years (Gallagher, 2003). In our study, however, all three families with a seven-year old child did not complete the treatment protocol. The standard PCIT protocol was developed and validated with children aged 2 years to 6 years 11 months (e.g., Eyberg & Funderburk, 2011; Herschell et al., 2002). However, PCIT therapists are encouraged to use their clinical judgment if a seven-year-old child could benefit from PCIT in its standard form (McNeil & Hembree-Kigin, 2010). This can be the case for

smaller and less mature children that can be still carried to a time-out chair and who enjoy the Child-Directed Interaction (CDI). For other seven-year-old children the communication skills used in CDI are not longer suitable to their cognitive development and they may be too large or aggressive to safely use the time-out procedure during Parent-Directed Interaction (PDI) (McNeil & Hembree-Kigin, 2010). In our study, families with a seven-year old child were not able to complete treatment. In future clinical practice, it is therefore important for therapists to use their clinical judgment in choosing for PCIT or another evidence-based treatment approaches for older children (Patterson, 2005). In addition, this finding emphasizes the need for early screening and identification of child disruptive behavior problems in order to refer children in need for effective treatment at an age where treatment gains are generally higher (Heckman, 2006).

The observed child compliance was another child variable found as a predictor for longer treatment engagement. Although the severity of the child's problem behavior was not found as a predictor for whether families completed or dropped out PCIT, higher child compliance during the baseline parent-child interaction predicted dropout before a family attended 12 treatment sessions. A possible explanation may be that parents were less motivated to start the PDI phase, because this phase focusing on discipline and child compliance was no longer necessary for their highly compliant child. This finding also suggests that parents feel treatment only necessary for their non-compliant child. Additionally, the mothers in the group attending less than 12 sessions before dropout already used less commands during the parent-child interaction at baseline assessment. Given the significant correlation between parental demandingness and child compliance, these characteristics of the parent-child interaction are an interesting direction for additional research on the motivation of parents entering a parent-training intervention. Parents who have limited motivation to participate in treatment, because they were referred for other reasons than child disruptive behavior problems only (e.g., child maltreatment), may benefit from a motivational component before entering PCIT (Chaffin et al., 2011). An additional component on the motivation of families could be helpful to keep them engaged in treatment and to help reaching mastery criteria leading to more substantial treatment gains.

In the present study, maternal anxious and depressed symptoms were found as a predictor for PCIT dropout, which was similar to earlier research studies that identified maternal internalizing psychopathology as a barrier for engagement in PMT programs (Kazdin & Wassell, 2000). For mothers with depressive symptoms, cognitive perceptions, fatigue, and concentration problems could interfere learning the PCIT communication skills, which makes it harder to reach mastery criteria for treatment completion (Timmer et al., 2011). At the same time, results of the study of Timmer et al. (2011) also indicated that

depressive mothers completing PCIT showed reductions in their depressive symptoms. Based on these findings, the therapist's ability to encourage these mothers to continue treatment seems to be critical to achieve higher treatment effectiveness for this group.

In contradiction to US findings, demographic variables related to a low socioeconomic status (e.g., educational level, ethnicity, and family income) were not found to be predictive for treatment attrition (Bagner & Graziano, 2012; Fernandez et al., 2011). Nevertheless, the marginally significant percentage of single-parent families in the dropout group (63%) suggests that there may be other practical difficulties that caused premature termination of treatment, such as transportation difficulties to the community mental health center and childcare for the other children. To help these families to overcome practical barriers, adaptations of the PCIT protocol are suggested to better meet the individual needs of families at risk for dropout. For instance, home-based PCIT (e.g., Galanter et al., 2012) and/or a time-limited PCIT protocol (12 sessions; e.g., Thomas & Zimmer-Gembeck, 2012) could lower the threshold to stay engaged in PCIT and improve treatment retention. Another important challenge is reaching the families who could benefit the most from intervention. Although therapists can help families to overcome barriers when they are already in treatment, for most families the primary decision to seek help for their child's disruptive behavior problems lies with the parents. Similar to the US, there is an overall underutilization of the mental health care services among Dutch families, especially for families with an ethnic minority background (Abe-Kim et al., 2007; De Haan et al., 2012; Garland et al., 2005; Zwaanswijk et al., 2003). In order to provide PMT programs to families in need for help and reach them effectively, future research should not study the factors related to treatment attrition only, but also focus on the role of parents, teachers, and professionals (e.g., general practitioners) in the help-seeking process.

Another challenge of particular interest with the transportation of PCIT into a new country is the treatment fidelity. The treatment fidelity in this study was found to be slightly lower than in other PCIT studies. This may be a consequence of starting the research study shortly after the implementation of PCIT at the Dutch community mental health center. If the international dissemination of PCIT is to be successful, extensive and thorough training and additional supervision of clinicians is important. When training and supervision are sensitive to the specific needs of the therapists in the new setting, higher treatment fidelity can be achieved leading to better skilled therapists, which also could help to lower treatment attrition.

Strengths and limitations

This study contributes to the literature on the transportation of PMT programs to new environments. Our findings suggest that treatment attrition is a challenge for the effectiveness of PCIT in the Netherlands. Risk factors found in this study are comparable with risk factors for attrition identified in US studies, but our results also suggest that barriers for treatment success are in part specific to the population and the context in which the intervention is delivered. The sample size in the current study is an important limitation to consider. Although specific trends in our data seemed clear, our small sample size limited the number of predictor variables that could be tested statistically. Also, because of the small sample size our results may be unstable, which limits the generalizability.

Conclusion

PMT programs are considered best practice interventions to treat childhood disruptive behavior problems, and the broad dissemination within the US and other countries has increased the need to assess the success of PMT programs in other settings and cultures. An important part of the evaluation of the transport of PCIT to the Netherlands was to investigate factors related to treatment attrition, because treatment effectiveness hinges upon the extent to which families attend treatment (Reyno & McGrath, 2006). Our findings suggest that the delivery of PCIT in the Netherlands has comparable challenges with regard to treatment attrition and risk factors as similar samples in the US. However, findings in this study also suggest that risk factors may be context specific. In addition, to overcome general barriers (e.g., in-home intervention, increasing therapy integrity), it is also necessary to address specific risk factors per family (i.e., maternal internalizing psychopathology) to help them remain in treatment. This is especially important in community mental health settings where families often have multiple, complex problems and include more heterogeneous populations. Meeting the needs of families at risk for treatment attrition is an important goal for PMT programs within and outside the US to improve treatment effectiveness among families in different populations and cultures.

Chapter 7

Global dissemination of Parent-Child Interaction Therapy: The perspectives of international trainees

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Abstract

Robust evidence of the efficacy of parent management training (PMT) programs for the treatment of childhood disruptive behavior problems has led to increasing international dissemination. As PMT programs are transported out of the countries in which they were developed, it is important to consider how barriers to therapist training vary—or do not vary—across countries and cultures in order to determine how the training process may need to be adapted. Using a systematic qualitative approach, we interviewed 18 Dutch therapists trained in the PMT program Parent-Child Interaction Therapy (PCIT) to explore their perceptions of the PCIT model, training, and acceptability in the Netherlands. Findings suggest that Dutch therapists reported positive experiences with the PCIT training and treatment model, but also described significant barriers related to agency, client, program, and training. Therapist's attitudes and barriers to training and implementation were similar to findings with a sample of PCIT therapists in the US, suggesting that PCIT training may be readily transported from the US to the Netherlands. Suggestions are made to address the barriers to training and implementation to improve future dissemination outcome.

Introduction

Disruptive behavior problems in young children are a highly prevalent and serious public health concern (Lavigne et al., 2009; Loeber et al., 2000). To prevent these children from experiencing a developmental trajectory that leads to multiple, significant negative outcomes, intervention is often required (Masten & Cicchetti, 2010). The best-practice interventions for childhood disruptive behavior problems are typically included within the class of treatments called parent management training (PMT) programs (Eyberg et al., 2008; McCart et al., 2006). PMT programs are based on behavioral principles and focus on the development of caregivers' abilities to alter behavior contingencies for their children. PMT programs associated with larger effect sizes in the reduction of child disruptive behavior problems and the development of effective parenting skills are those that require parents to practice new skills with their children during sessions, promote warm, nurturing interactions between parents and children, teach parents the effective use of time-out, and teach consistent discipline procedures (Kaminski et al., 2008).

Both the growing empirical support and the extensive need among families have led to increasing dissemination of PMT programs internationally (Gardner et al., 2015). Global dissemination is an important step to reach more families in need of services. However, dissemination comes with a number of challenges, such as providing training that is acceptable to trainees, feasible to transport, and effective in developing the competence of therapists. These challenges may be exacerbated when transporting training from the country in which it was developed to a new culture or country. Although some evidence suggests that PMT programs generally maintain positive client outcomes (e.g., reduction of child disruptive behavior problems) when transported from the United States (US) or Australia to other "Western" countries (Gardner et al., 2015), the literature on implementation outcomes (e.g., acceptability, sustainability, feasibility) rather than primarily client outcomes (e.g., reduction of symptoms) remains sparse (Proctor et al., 2011). Further, the existing work has generally neglected the perspectives of one of the key stakeholders in the global dissemination of PMT programs: that is, the perspectives of the therapists being trained.

We examined the dissemination of the evidence-based intervention Parent-Child Interaction Therapy (PCIT; Eyberg & Funderburk, 2011) from the perspective of international PCIT therapists. PCIT is a manualized PMT intervention developed to address childhood disruptive behavior problems in children aged 2 to 7 years. Extensive research supports the model's efficacy (e.g., Nixon, Sweeney, Erickson, & Touyz, 2003; Schuhmann et al., 1998) and long-term maintenance of gains (e.g., Eyberg et al., 2014; Nixon et al., 2004). In two phases of treatment—Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI)—the therapist teaches parents to use specific communication skills in order

to change their children's behavior. PCIT has been disseminated into community mental health settings (e.g., Lanier et al., 2014; Lyon & Budd, 2010; Pearl et al., 2012) and has demonstrated efficacy with families from diverse ethnic backgrounds (Fernandez et al., 2011; Matos et al., 2009; McCabe et al., 2012). With robust evidence of its efficacy, PCIT has experienced increasing international dissemination, currently being implemented in Australia, New Zealand, China (Hong Kong), Japan, South Korea, Taiwan, Norway, Germany, Switzerland, and the Netherlands (McNeil & Hembree-Kigin, 2010).

In the US, the literature on successful clinician training and community-based implementations of PMT programs is growing (e.g., Beveridge et al., 2015; Herschell, Kolko, Baumann, & Davis, 2010). Previous research by Herschell et al. (2009) on therapist training in PCIT has found that reading the treatment manual only was not sufficient to obtain mastery of PCIT knowledge and skills. In addition, this study showed that experiential and didactic training (e.g., videotape modeling) was useful for therapists to attain competence with basic PCIT skills. In another study, live video consultation (remote real-time) was found to be superior to telephone consultation as a method of supervision (Funderburk et al., 2015). Recently, factors related to successful implementation and maintenance of PCIT have been explored among community clinicians who received the formal PCIT training workshop (Christian, Niec, Acevedo-Polakovich, & Kassab, 2014). This study suggested that PCIT trainees viewed the training model favorably, and they saw the core components of PCIT as acceptable and valuable. However, the clinicians also identified several barriers. With regards to the PCIT treatment protocol and the implementation, clinicians reported financial issues related to training and implementing PCIT and described protocol barriers (e.g., length of treatment, mastery criteria of PCIT). Additionally, clinicians described agency or environmental barriers, such as a lack of referrals, transportation issues, or limited financial recourses for training and equipment. Despite the generally positive experiences, clinicians also expressed difficulties with the PCIT training and consultation process. Some clinicians expressed dissatisfaction with the manner of delivery of consultation (e.g., group setting and telephone consultation) and preferred more frequent, longer meetings. Another issue relevant for community settings was that clinicians frequently mentioned the need for additional training on skills in motivation enhancement to prevent families from early termination.

As the dissemination of PCIT continues to increase internationally, it will also be important to consider how barriers to training vary—or do not vary—across cultures to determine in what ways training may need to be adapted to the context in which it is delivered. Presently, no research on PCIT training and the perspectives of PCIT therapists include samples from outside the US. Differences in mental health systems and other contextual factors may influence clinicians' experiences with training and the implementation of the

PCIT model. If PCIT is to be successfully transported and sustained in other countries, it is important to understand differences in the experiences of international trainees.

In the present study, we explored the therapists' perspectives of the PCIT model, training, and acceptability among clinicians in the Netherlands. The Dutch community mental health care system is organized similarly to that of the US, including comparable challenges that limit the effectiveness and accessibility of interventions, such as treatment attrition and difficulties in the pathways to the mental health care (e.g., help-seeking behavior of parents) (De Haan et al., 2015; Zwaanswijk et al., 2003). The main difference between the Dutch and US systems mentioned in the literature are the low financial thresholds of the Dutch mental health care system. In the Netherlands, all children are covered by private health insurance, or the local government (municipalities) subsidizes care. The reduced financial barriers in the Dutch mental health care system are seen as an explanation for higher care use by Dutch adults with psychiatric disorders (Bijl & Ravelli, 2000). However, similar to the US, underutilization of services in the child mental health care is still a concern (Garland et al., 2005; Zwaanswijk et al., 2003). In particular, children from ethnic minority populations are less likely to receive treatment for disruptive behavior problems (Zwirs, Burger, Schulpen, & Buitelaar, 2006). Based on the previous literature on the US therapist's experiences and the Dutch and US mental health care system similarities and differences, we expected partly comparable therapists' perspectives on training and implementation in the Netherlands. Similar to the findings of Christian et al. (2014), we expected that Dutch therapists would report financial barriers to training and implementation because the Dutch mental health care funding system may lead to pressure for clinicians to achieve high productivity. Also, serving a high-risk population was expected to influence the therapist's experiences with the PCIT treatment protocol and may increase the need for additional training on motivational enhancement strategies.

Although the PCIT training model is transported to another "Western" country, differences in cultural norms and attitudes still may influence the perspectives on training. Recently, international training and clinicians' feelings of self-efficacy after training in the PMT program Triple P in several countries were studied. It was found that the standardized training curriculum increased the self-efficacy of individuals from diverse professional and cultural backgrounds (Sethi, Kerns, Sanders, & Ralph, 2014). However, researchers have also found that general feelings of self-efficacy were lower in Asian countries, which may indicate cognitive diversity (Mau, 2000). Therefore, Sethi et al. (2014) recommended considering the need for cultural adaptation of the training model in order to influence the acceptability and efficacy of the training. Although one study of PMT programs in Western countries demonstrated comparable effectiveness to research in the countries different from where they were developed (Gardner et al., 2015), problems

remain in sustaining fidelity and effect sizes when programs are disseminated (Michelson et al., 2013; Piquero et al., 2009; Weisz et al., 2005). It is important that we investigate the training process and consider the critical perspectives of the therapists who are receiving the training and implementing the program.

We interviewed PCIT therapists in the Netherlands in order to investigate their perspectives on the barriers to and strengths of PCIT training and the PCIT treatment model as implemented within their own country. Using the systematic qualitative approach based on the recommendations of Marshall and Rossman (2010), we began to assess whether international therapists experience PCIT as an acceptable, effective, and sustainable approach to the treatment of children's disruptive behavior problems.

Methods

Participants

At the time of data collection, 24 therapists working in the Netherlands had been trained in PCIT. Eighteen of the 24 (75%) responded to an email inviting them to provide feedback regarding their experiences as PCIT trainees and therapists. All 18 therapists who responded to the email consented to participate in the study. Prior to participating, therapists had completed their initial PCIT training within three to eight years. Participant characteristics are summarized in Table 7.1; 94% ($n = 17$) of the therapists were masters-level clinicians; one therapist was a bachelors-level clinician with over ten years of clinical experience. At the time of contact, all 18 therapists were treating children with disruptive behavior problems, treating families with PCIT ($M = 2$ cases/wk), and all reported experiencing barriers to the implementation of PCIT.

PCIT training

Training for the sample took place from 2006 through 2011 and was provided by individuals with extensive experience as PCIT therapists and trainers. The training process included an initial 40-hour workshop in which therapists were provided information regarding the underlying theories of PCIT, the behavioral observation measure Dyadic Parent-Child Interaction Coding System, coaching techniques for both phases of the intervention, and a thorough overview of the full treatment model. Teaching techniques during the workshop included didactic, role-play, and experiential learning with children and families. Subsequent to the initial workshop, trainees participated in consultation provided biweekly either live or by phone for a period of approximately one year. The training process completed by the Dutch trainees was similar to the process currently endorsed by the authorizing body of PCIT, PCIT International (www.PCIT.org).

Table 7.1*Participant characteristics N = 18*

	<i>%(n) or M(SD)</i>
<i>Gender</i>	
Female	100% (18)
<i>Education</i>	
Masters Level Therapist	94.4% (17)
Bachelors Level Therapist	5.6% (1)
<i>Type of agency employed</i>	
Private Practice	5.6% (1)
Non-profit Community Agency	94.4% (17)
Number of families with children 2-6 seen per week	3.4 (2.7)
Number of families seen for PCIT per week	1.8 (0.8)
Attended a PCIT conference or booster since initial training	61.1% (11)

Interview

Clinician Use of and Satisfaction with PCIT

The Clinician Use of and Satisfaction with PCIT (CUSP) Interview was developed to assess clinicians' perspectives on the PCIT training process and treatment model, with a focus on identifying facilitators of and barriers to the successful implementation of PCIT in communities (Christian et al., 2014; Niec & Christian, 2014). Eighteen open-ended questions tap PCIT trainees' perceptions in nine domains specific to the PCIT model (assessment, didactic, coaching, mastery and termination criteria, length of treatment, co-therapy, supervision, and implementation): for example, "How do you feel about the consultation/supervision you received?", "How do you feel about the co-therapy model in PCIT?" Twenty Likert-like items with responses from one (*Strongly Disagree*) to five (*Strongly Agree*) provide quantitative data on trainees' (1) experiences with PCIT training (e.g., "I feel that I have received enough training to enable me to implement PCIT effectively"); (2) satisfaction with the PCIT model (e.g., "Overall, I find PCIT increases warm and secure interactions between parents and children"), and (3) perception of the acceptability of the PCIT model (e.g., "I believe that PCIT is an appropriate treatment for families with young children with behavior problems.").

Procedure and data reduction

All 24 therapists who had participated in PCIT training in the Netherlands were contacted via email and invited to complete an individual interview regarding their perceptions of their training, subsequent supervision, and the implementation of the PCIT model. A doctoral student conducted the interviews by phone in English. Although all clinicians

were bilingual, to reduce potential language barriers, participants received the questions previous to the interview. Participants' responses were transcribed in real time.

Qualitative data was coded by two doctoral students based on the procedures discussed by Marshall and Rossman (2010). After independent review of the transcripts to identify and define common themes, the coders compared themes, calculated initial convergence estimates (53%) and created a list of well-defined themes. With the defined themes, the coders re-coded the material. Final convergence prior to meeting to resolve disagreements was (77.4%). In cooperation with an expert PCIT therapist and trainer who is certified as a master trainer by the authorizing organization of PCIT (PCIT International), and has over 18 years of experience conducting PCIT, the two coders identified categories within which individual themes were grouped. Descriptive analyzes were conducted on quantitative scales.

Results

PCIT training and model acceptability: Quantitative data

PCIT therapists completed Likert-like questions regarding their (1) satisfaction with PCIT training, (2) experiences implementing the PCIT model, and (3) perceptions regarding the acceptability of PCIT in the Netherlands. Responses suggest that therapists generally perceived their training as useful and the PCIT model as effective (Table 7.2). Clinicians also described the model as acceptable, with 100% reporting that they "agree" or "strongly agree" that PCIT is appropriate for Dutch families with young children with disruptive behavior problems and 100% reporting that they "agree" or "strongly agree" that they feel comfortable with PCIT as a treatment and that they plan to use it with families with young children.

Despite the generally positive attitudes expressed toward the PCIT model, all therapists reported that they had experienced barriers to the effective implementation of PCIT with families. Approximately 17% reported lacking sufficient support from supervisors or other therapists; 28% reported that the availability of trainers was a problem; 33% reported experiencing challenges related to the availability of the proper audio/visual equipment; 33% reported personal barriers, such as discomfort with the PCIT model; and 78% reported experiencing barriers related to the population of families served (e.g., unmotivated families, lack of appropriate referrals). To better understand the source of the barriers experienced by Dutch therapists, as well as the aspects of PCIT training and treatment that therapists felt facilitated implementation, qualitative themes are provided below.

Table 7.2
Therapists' perceptions of PCIT training and implementation N = 18

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
PCIT Model				
Is easy to deliver	4.00	0.84	2	5
Reduces treatment attrition	3.83	0.62	3	5
Decreases child conduct problems	4.50	0.62	3	5
Increases treatment attrition	2.06	0.54	1	3
Reduces treatment recidivism	3.39	0.70	2	4
Increases parent-child warmth	4.56	0.51	4	5
Increases child conduct problems	1.33	0.49	1	2
Reduces parent stress	4.17	0.51	3	5
Is enjoyable to implement	4.11	0.76	2	5
Is complicated	2.33	0.91	1	4
PCIT Training				
The materials were clear	3.78	0.81	2	5
Assessment of my skills was helpful	4.22	0.55	3	5
I learned useful techniques	4.28	0.46	4	5
I received enough training	4.06	0.42	3	5
I felt it was worthwhile	4.50	0.51	4	5
I feel confident in my ability to use PCIT	4.11	0.47	3	5
Acceptability of PCIT in the Netherlands				
PCIT is appropriate for families with children with CP	4.67	0.49	4	5
I am committed to the behav. principles on which PCIT is based	4.61	0.61	3	5
I am comfortable using PCIT as a treatment for children's CPs	4.28	0.46	4	5
I plan to use PCIT regularly	4.50	0.51	4	5

Note. 1 Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree. CP Conduct problem.

Clinician's satisfaction with training and the PCIT model: Qualitative themes

Eighteen individual themes regarding Dutch therapists' attitudes toward the PCIT model and PCIT training were identified within the interview transcripts. We placed those themes into four, non-overlapping categories: (1) Satisfaction with the PCIT Model, (2) Dissatisfaction with the PCIT Model, (3) Barriers to Implementation, and (4) Training Needs (Table 7.3). All but two themes received convergence estimates above 60 percent (More Training Materials are Needed; PCIT Requires Significant Time to Implement Competently), with 72 percent of the themes receiving convergence estimates of 70 or higher. Low convergence in the two themes may have been due to a low base rate of the theme's occurrence, inadequately defined themes, or incomplete thoughts expressed in the interviews. Note that, consistent with Marshall and Rossman's (2010) approach to qualitative coding, a theme's total "instances" refers to the number of times the theme

occurred in the transcripts and not necessarily to the number of therapists who reported it. Each category and its themes are discussed below with representative examples quoted from the transcripts.

Satisfaction with the PCIT model

This category reflected Dutch therapists' positive attitudes toward the PCIT approach itself and reflected the generally positive attitudes revealed by the scaled questions. Two themes fell into this category, with a total of 24 instances. Specifically, therapists expressed favorable views toward PCIT coaching (e.g., "I love it!" "I really do like it, because parents do like it as well.") One clinician shared enjoying coaching for the way it allows therapists to observe changes in the parent-child relationship: "When you start the CDI [coaching], you see the relationship every week turn into a warmer relationship... That's enormously fulfilling to see." Another therapist described coaching as a good tool for parents and for therapists: "Well I think that [coaching] is the most powerful part of PCIT, and it's also very good training for every therapist." Therapists also shared favorable views of PCIT Teach sessions (e.g., "I think parents like it." "It's a really nice way to explain the sessions." "I think it's a good session... It's very structured and you practice with parents and you can ask questions.").

Dissatisfaction and poor fidelity with the PCIT model

When asked how they felt about various components of the PCIT model, Dutch therapists also expressed some dissatisfaction. Three themes captured those expressions in 18 instances: Teach Sessions Are Viewed Negatively; Co-therapy Is Not Used; and Therapists Don't Always Use Post-Treatment Measures. Clinicians shared that teach sessions were sometimes challenging both for the therapist and the parent (e.g., "You have to put some extra energy in it to make it a little bit fun because it's quite long." "It's a little tough to deliver."). Some clinicians observed that parents can have trouble processing the details of the session (e.g., "I think it's a lot of information for parents..."). Although the co-therapy model was often seen as valuable, therapists expressed not using the model during or after training, primarily related to agency limitations (e.g., "It's too expensive," "Our agency does not allow it," "We don't do it because it's more difficult for the finances," "We get less money if we do it with two persons."). Therapists also reported not always using the post-treatment measures recommended by the PCIT manual (e.g., "Not typically for any PCIT [cases].").

Barriers to implementing PCIT

This category was characterized by therapists' descriptions of the types of barriers that impede the implementation of PCIT within their agencies. Five themes were identified, occurring over 30 instances: Financial Barriers; Transportation Barriers; Equipment Bar-

Table 7.3*Qualitative themes, instances, and final convergence estimates N = 18*

	Instn	Cnvg %
Satisfaction with the PCIT Model		
Coaching Is Viewed Favorably. Therapist described coaching as enjoyable or otherwise in a positive fashion.	16	83%
Teach Sessions Are Viewed Favorably. Therapist described positive aspects of the CDI and PDI didactic sessions.	8	75%
Dissatisfaction and Poor Fidelity with the PCIT Model		
Therapists Don't Always Use Post-Treatment Measures. Therapist reported that they do not give any exit or termination assessments.	3	100%
Teach Sessions Are Viewed Negatively. Therapist spoke critically of the CDI and PDI Teach sessions (e.g., too long, not interactive enough).	6	100%
Co-Therapy is Not Used. Therapist reported not using the co-therapy model.	9	100%
Barriers to Implementation		
Financial Barriers. Therapist reported monetary barriers that impacted the successful implementing of PCIT.	12	69%
Transportation Barriers. Therapist reported transportation issues that impacted the successful implementation of PCIT.	4	80%
Equipment Barriers. Therapist reported experiencing technical barriers which negatively impacted implementation of PCIT.	8	78%
Lack of Clients. Therapist reported that having insufficient numbers of clients was a barrier to implementing PCIT successfully.	5	80%
Multiple Problem Families. Numerous problems in the life of the client make it difficult to implement PCIT successfully.	11	67%
Training Needs		
Co-Therapy is Viewed Positively. Therapist noted the positive aspects or benefits of using the co-therapy model.	21	95%
Therapists are Uncomfortable Doing PCIT at First. Therapists reported being uncomfortable when they began practicing PCIT.	5	83%
Supervision with Colleagues Was Helpful. Therapist reported benefits from sharing experiences with other PCIT therapists.	10	82%
Supervision with Experts Was Helpful. Therapists reported benefits from sharing experience with other PCIT trainers and supervisors.	19	85%
PCIT Therapists Want Additional Supervision. Therapists expressed wanting additional or closer guidance from a PCIT supervisor.	18	60%
PCIT Booster Training is Beneficial. Therapist noted benefits from additional PCIT booster training.	4	75%
More Training Materials Are Needed. Therapist reported a desire to have more training materials available to them.	1	20%
PCIT Requires Significant Time to Learn. Therapist described PCIT as having a significant requirement to develop competency.	8	45%
Total	168	77.4%

riers; Lack of Clients; and Multiple Problem Families. The financial strain related to training was one of the most commonly reported barriers by the therapists (e.g., “I thought it [the training] was a bit expensive but that was all.”). Therapists reported that clients also experienced resource strains, such as a lack of transportation, that prevented them from attending PCIT reliably (e.g., “The families have to come to the office.”). Lack of the equipment to conduct PCIT coaching from an observation room and malfunctioning equipment was reported as a significant problem (e.g., “Then it is difficult to implement PCIT because not all centers do have the rooms that we need and the equipment we need.”; “The use of equipment was a barrier.”). Some therapists experienced problems with the referral flow as well. For example, one clinician said, “As a manager it was hard to work to get enough children in the program.” Others reported that especially immediately after their initial training it was difficult to find enough families (e.g., “I found it in the beginning, we don’t have enough families.”; “Sometimes there are not enough families for PCIT.”). The most frequently reported client factor seen as a barrier to the implementation of PCIT in the Netherlands was the presentation of complex, multi-stressed families. One clinician described the problem this way: “There’s so much going on in life of families all the time.” Another therapist reported, “With our families it’s difficult because they have multiple problems most of the time. They have strong psychiatric problems. So I think that’s difficult.”

Training needs

This category included eight themes regarding aspects of training that therapists felt were valuable or necessary, which occurred in 86 instances. Themes included Co-therapy for Training Is Viewed Positively; More Training Materials Are Needed; PCIT Requires Significant Time to Learn; Therapists Are Uncomfortable with PCIT At First; Supervision with Colleagues Is Helpful; Supervision with Experts Is Helpful; PCIT Booster Training Is Beneficial; More Supervision Is Important.

Therapists expressed liking the idea of co-therapy for training, although as previously mentioned, most were unable to train with the model due to agency needs for productivity (e.g., “[Co-therapy] is really a good model. I honestly think it’s better to do it with a co-therapist.”). Therapists found supervision with their peers and with expert PCIT trainers to be beneficial. “Every two weeks we phoned our supervisor and that was really clear; we could ask our questions and difficulties we had with families, and also we could always send her an email when we had a question, so it was very good.” “[It] was very nice to get direct feedback of two very experienced PCIT therapists. It was very nice to have them give feedback when I was in action.”

Not only did therapists see supervision and consultation as helpful, they expressed a desire for more training and supervision. For example, therapists said things such as, “I think that it’s important to have more consultation and more live consultation.” “Yes, I would like to see more booster sessions.”

Discussion

Although the global dissemination of PMT programs is increasing and research findings support the transportability of these programs with regard to maintaining positive client outcomes to other “Western” countries (Gardner et al., 2015), literature on implementation outcomes and the perspectives of the therapists remains sparse (Herschell et al., 2010; Proctor et al., 2011). In this study we used a systematic qualitative approach to investigate the perspectives of therapists in the Netherlands on the barriers to and the strengths of training and the treatment model specific to the implementation of a particular PMT program, PCIT.

Clinician’s perspectives on training and implementation of PCIT

Among the participating Dutch clinicians quantitative and qualitative data indicated that all trained therapists saw PCIT as an acceptable and useful treatment model for young children with disruptive behavior problems. In addition, generally clinicians felt positive about PCIT training and were satisfied with the PCIT model; in particular, coaching was viewed as a favorable aspect of treatment. However, findings also indicate that all therapists experienced barriers to the effective implementation of PCIT with families. The qualitative data analysis revealed 18 more specific themes of the Dutch therapists’ attitudes toward the PCIT training and PCIT model, which were placed into four categories. As expected, therapists described client and financial barriers related to agency and training (e.g., working with multi-stressed families, high training costs and a prohibitively expensive co-therapy model) which may cause difficulties to implement and sustain PCIT in a Dutch agency. Other findings demonstrate that the therapists viewed consultation and sharing experiences with other PCIT therapists and their PCIT supervisor as useful, but they also expressed the need for additional training, supervision, and booster sessions. Despite the generally positive attitudes of the Dutch PCIT therapists toward the PCIT model and PCIT training, it is important to consider the barriers to strengthening the existing dissemination for PCIT and other PMT programs in the Netherlands.

Comparing the findings of our study with previous research among US clinicians delivering PCIT in a community setting suggest that the therapist’s perspectives on training and implementation were largely consistent (Christian et al., 2014). US therapists had similar

positives attitudes toward the PCIT model (e.g., viewing coaching as favorable), and they also expressed comparable barriers to the implementation of PCIT (e.g., financial, transport, and equipment barriers). The similarities in the attitudes of and the challenges faced by Dutch and US PCIT therapists suggest that the PCIT training model may be readily transported from the US to the Netherlands without any substantial cultural adaptations.

To enhance best training practices, it is important to shape training to address the needs of the trainees. For instance, time efficient methods on incorporating technology for consultation, such as Remote-Real Time Coaching, allows active trainee skill coaching during sessions by the PCIT trainer. In addition, besides the therapists' experiences, it is valuable to consider trainers' perspectives to improve the training model. Recently, Scudder and Herschell (2015) investigated trainer experiences with the PCIT training model and implementing treatment within new community settings. In this study, most trainers emphasized the importance of pre-training preparation in order to discuss the expectations of the training process, such as the agency's commitment to therapist time in co-therapy or peer consultation. Another important issue to address in training preparation is "infrastructure development" in the agency, such as establishing a referral process including identifying PCIT-eligible families prior to training and identifying an appropriate space required for PCIT. Because therapists in this study reported several barriers related to the pre-training preparation, addressing these challenges as early as possible seems critical for more effective implementation and sustainability.

Another clinical issue relevant for training in the Dutch context that is consistent with findings of Scudder and Herschell (2015) is to include variable components in addition to the common elements in training to address specific populations. Because serving multi-stressed families was the most reported client factor as a barrier to implementation of PCIT in the Dutch community mental health practice, tailoring training to this specific population and integrating on motivation enhancement strategies into training may improve engagement of families at risk for treatment attrition.

Strengths and limitations

The current study contributed to the literature on the international dissemination of PCIT and other PMT programs to another country and provided much-needed insights to barriers in training and implementation. Although assessment of the effectiveness of international training through clinician performance and client outcomes is important in the dissemination research (Christian et al., 2014), the qualitative approach of the current study provided valuable information on the perspectives of the Dutch PCIT therapists. These findings may be minimized or missed by using quantitative approaches only (Creswell & Plano Clark, 2011).

Nevertheless, some limitations should be considered when interpreting the findings of our study. The first cohort of therapists was trained in 2006, and accordingly the delivery of PCIT in the Netherlands began in 2007, but the number of therapists trained in PCIT is still small. This resulted in 18 interviews, which is a small sample size. Therefore, the conclusions of this study should be considered preliminary. Since PCIT has been transported to several countries outside the US, future research on attitudes and barriers to training and implementation among therapists from more countries is recommended. In particular, including therapists from countries that are culturally more distinct from “Western” countries (e.g., Asian countries) is needed to draw more robust conclusions about the transportability of PCIT training. In regards to the qualitative approach used in the current study, caution in interpreting the findings is necessary, because the preliminary convergence estimates of the qualitative coding were low (53%), requiring a closer evaluation of the identified themes and additional coding. It is important to note, however, that the qualitative themes were closely reflected by therapists’ quantitative ratings of their PCIT training experiences. Finally, it should be noted that by using a qualitative approach some themes contradicted one another. For instance, some therapists expressed satisfaction with the teach sessions in the PCIT treatment model, while other therapists viewed those sessions negatively, leading to inconsistent conclusions on this issue.

Conclusion

The study findings suggest that Dutch PCIT therapists were generally positive about PCIT training and view the PCIT model as acceptable in the Netherlands, but they also experienced several barriers to training and implementation that should be addressed in the future. Our findings also showed similarities in attitudes and barriers identified by Dutch and US PCIT therapists, providing support for the transportability of PCIT training to the Netherlands, and suggesting no need for cultural adaptation. However, as the dissemination of PCIT continues to increase nationally and internationally, it is necessary to shape training to address the needs of the trainees and the barriers in training and implementation to improve the evidence-based services for children and their families.

Chapter 8

General discussion

High levels of young children's disruptive behavior problems are persistent, highly prevalent, and a serious public health concern (Bongers et al., 2004; Rijlaarsdam et al., 2015). If left untreated, these behaviors can lead to serious difficulties in broad areas of child and family functioning, and economically impact the wider society (Broidy et al., 2003; Scott et al., 2001). Therefore, early intervention is necessary to protect these children and their parents from a negative developmental trajectory (Heckman, 2006). Reviews of treatment outcome literature for young children with disruptive behavior problems find that interventions involving parents as the primary agent of change remain the most consistently supported (Eyberg et al., 2008; Weisz & Kazdin, 2010). The focus of this thesis was on the theme of *dissemination of an evidence-based parent management training program to the Netherlands*, and in particular the implementation of Parent-Child Interaction Therapy (PCIT; Eyberg & Funderburk, 2011). The primary aim of this thesis was to study the effectiveness of PCIT in Dutch clinical practice and additionally other components related to dissemination and study of parent management training (PMT) programs were evaluated, including behavioral assessment techniques, treatment attrition, and therapists' perspectives. The present chapter provides a summary and discussion of the main findings from the studies reported in previous chapters and will set out directions for future clinical practice and research.

Summary

Measures to assess child disruptive behavior and parent-child interactions

To provide an early PMT program to those families who are in the highest need, adequate screening for child's disruptive behavior problems is important. The study in **Chapter 2** focused on the psychometric properties of the Dutch translation of the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999), a widely used parent rating scale as a standardized measure for the assessment of child disruptive behavior within both clinical and research settings. Parent-reports are considered the most common and efficient way to measure child behavior problems in young children (Funderburk et al., 2003) and the ECBI is used weekly during PCIT sessions to assess treatment progress. In this study, the one-dimensional structure, reliability, and validity of the ECBI were investigated. The study included a community sample of 326 children and a multi-ethnic clinical sample of 197 children. Both scales of the ECBI (Intensity Scale and Problem Scale) were tested and the results from both community and clinical samples confirmed the use of the ECBI as a one-dimensional measure for child behavioral problems. Moreover, the ECBI scales show good test-retest reliability over six months in the community sample and good convergent and divergent validity were found with another questionnaire on child behavior in the clinical sample. Additionally, findings show that the ECBI Intensity Scale is able

to differentiate between children in different diagnostic groups within the externalizing problems spectrum, indicating the ECBI's usefulness for screening purposes. In sum, findings demonstrate that the ECBI is a psychometrically sound measure to assess child behavior problems and works well within the Dutch context.

In PMT programs, questionnaires can measure progress in the intervention and treatment effectiveness. However, as PMT programs focus on the improvement of parenting skills, systematic assessment of parent-child interactions is also important. Observational coding systems are considered as more objective and more sensitive in providing information about parenting skills (Gardner, 2000). In **Chapter 3** the psychometric properties of the Dyadic Parent-Child Interaction Coding System (DPICS; Eyberg et al., 2013) were examined among 31 non-clinical mother-child dyads in the Netherlands. In addition, the DPICS scores were compared from the Dutch mother-child dyads to 86 non-clinical mother-child dyads from the United States (US). For the Dutch mothers-child dyads, findings show good one-week test-retest reliability of the DPICS, indicating a consistent pattern of parent-child interactions over a weekly period. Despite some significant differences on specific parental behaviors, findings suggest that the parent-child interactions are largely similar among Dutch and US mother-child dyads. Therefore, findings provide support for the use of the DPICS as a reliable and valid behavioral observation to measure treatment progress and evaluate treatment gains in Dutch parent-child dyads.

Effectiveness of Parent-Child Interaction Therapy

After the evaluation of behavioral assessment techniques integral to the implementation of PCIT in the Netherlands, the next step in this thesis was to focus on the effectiveness of PCIT in the decrease of child disruptive behavior problems. Internationally, there is a large body of research that supports the effectiveness of PCIT on improving child behavior and parenting skills with high effect sizes (e.g., Cooley et al., 2014; Thomas & Zimmer-Gembeck, 2007). Also, PCIT is considered as an evidence-based and cost-beneficial intervention in the child welfare system in the US (Lee et al., 2015). Research on the effectiveness of PCIT in the Netherlands, however, has not been previously examined and PCIT outcome studies conducted within everyday clinical practice, such as community mental health settings, are still sparse. **Chapter 4** consisted of a pilot evaluation on the effectiveness of PCIT in the Netherlands with 37 children and their parents who received PCIT within two years after the implementation (2007). Using a retrospective research design, findings show that parents completing PCIT report a significant decrease of child disruptive behavior problems. In addition, at post-treatment, most mothers (74%) reported their child's behavior within the range of normal functioning and did not differ from the parent ratings of the behavior of 59 children in the non-clinical comparison group. The results of this pilot study were therefore promising with regards to the ef-

fectiveness of PCIT in the Dutch population. Subsequently, a randomized controlled trial was started to compare PCIT with an intervention developed in the Netherlands, Family Creative Therapy [in Dutch: Gezins-Creatieve Therapie] (FCT; Beelen, 2003). **Chapter 5** presented the outcomes of the randomized controlled trial and a subsequent comparative effectiveness trial including 45 children referred for disruptive behavior problems. The majority of the children in this study were exposed to maltreatment, so the sample included a large proportion of high-risk families. Also, families were from different ethnic backgrounds and multiple methods (questionnaires, interviews, and observations) and multisource data collection procedures (including parents, teachers, and independent observers) were used. Findings of this study show that PCIT significantly decreases child disruptive behavior problems and parenting stress, and improves parent-child interactions according to parent-reports and observations. Also, high treatment satisfaction was found. In addition, it appeared that completing PCIT led to more substantial gains in comparison with terminating treatment prematurely. Although the attrition rate for FCT was low, this intervention had no beneficial effects on the majority of the outcome measures that were examined. It is possible that FCT has positive outcomes that were not examined in the present study, because outcome measures were not suited to determine whether the specific aims (i.e., improving communication between family members and changing interaction patterns) of FCT were achieved. Hence, future research on the effectiveness of FCT is recommended. Design difficulties of the randomized controlled trial require caution in generalizing the results. Conducting research in everyday clinical practice provided valuable information on how well an evidence-based intervention fit in a real-world setting. However, this research also included challenges leading to some complicating factors (e.g., randomization crossovers, a heterogeneous sample, and treatment attrition) inherent with clinical practice research in a community mental health center. Despite limitations, the findings including large effect sizes of the pilot study and the comparative effectiveness trial both support previous research on the effectiveness of PCIT and provide evidence for the successful international dissemination of a PMT program in real-world clinical practice.

To advance the knowledge on how the effectiveness of PMT programs can be improved, **Chapter 6** builds on the findings of Chapters 4 and 5 that premature termination of PCIT led to inferior treatment gains and treatment maintenance. From an implementation perspective, evidence of symptom reduction alone is insufficient to determine the effectiveness of an intervention. In this study, predictors of treatment attrition were explored in 40 families who received PCIT. The treatment attrition rate (40%) for PCIT was viewed high, but was slightly lower than findings with similar samples in community mental health settings in the US (e.g., Lanier et al., 2011; Pearl et al., 2012). Findings suggest that older children and mothers with clinical levels of anxious and depressed symptoms were

at risk for treatment dropout. Demographic characteristics such as the mother's educational level, ethnicity, and family income were not found to be predictors for treatment attrition and therefore PCIT appears to be an appropriate treatment for families from diverse socioeconomic and ethnic backgrounds. Results from this study suggest that it is an important goal to meet the needs of families at risk for attrition in order to improve the benefits of PMT programs for these children and their parents.

Therapist perspectives

As the dissemination of an intervention to other countries or new settings starts with training of clinicians, evaluating the perspectives of the therapists being trained is an important implementation outcome. **Chapter 7** reported on international training. If the international dissemination of evidence-based PMT program is to be successful, extensive and thorough training of clinicians is essential. Training must be responsive to the needs of clinicians throughout training, consultation, and implementation. Also, differences in mental health care systems and cultures may create different barriers that must be addressed to disseminate a sustainable program. To evaluate the transportability of the PCIT training model to the Netherlands, 18 clinicians were interviewed about their experiences as PCIT trainees and therapists using a systematic qualitative approach. Similar to therapists in the US (Christian et al., 2014), findings of this study suggest that Dutch therapists are generally positive about PCIT training and the PCIT treatment model, but also experience barriers on training and implementation. Therapists expressed the need for additional and live supervision and they commonly mentioned barriers on working with multi-stressed families. The similarity in the challenges faced by Dutch and US PCIT therapists indicate that the PCIT training model may be readily transported from the US to the Netherlands. However, it also shows that barriers in training and implementation remain in both countries and must be better addressed.

General discussion

The studies described in this thesis focus on the evaluation of the effectiveness of an evidence-based PMT program transported to a community mental health setting in the Netherlands. Potential cultural influences on therapist training, the treatment effectiveness and treatment retention in everyday clinical practice, and the psychometric properties of behavioral assessment techniques were examined. The overarching goal, however, is to treat young children with high levels of disruptive behavior problems to protect them from a negative developmental trajectory. Providing these children an early intervention can lead to better outcomes on an individual and family level, but also can be cost-beneficial for the wider society.

The results presented in this thesis extend the knowledge on evidence-based practice in the Netherlands. The results are promising with regard to the transportability of a training model, standardized behavioral measures, and an intervention model from the country of origin to the Netherlands. Although the transportation was between two “Western” countries, differences between mental health service systems may impact the appropriateness and effectiveness of the transportation. Also, cultural norms and attitudes on parenting and family practices, and other factors such as political and religious factors, still may influence the feasibility, acceptability, and effectiveness of the dissemination (Gardner et al., 2015; Palinkas et al., 2009). Cultural differences are also relevant as many societies become increasingly heterogeneous, which is particularly the case in the urban areas of the Netherlands. Also, the clinical samples of the studies presented in this thesis included families from diverse ethnic backgrounds. Although, sample sizes were small and further research is needed, ethnic background was not found as a risk factor for treatment dropout, which suggests that that PCIT is an effective treatment approach across families from different ethnic backgrounds. The finding that PCIT works well in settings with a multi-ethnic population is consistent with previous literature on the effectiveness of PMT programs in socioeconomically disadvantaged and ethnic minority families (Leijten, Raaijmakers, et al., 2015).

In sum, the findings from the effectiveness studies on PCIT show that PMT programs can be successfully transported to the Netherlands without the need for cultural adaptations and work well in real-world clinical practice. Findings on other implementation outcomes including the therapists’ perspectives on training and the treatment model, and good psychometric properties for the integral behavioral assessment techniques support this conclusion. The manualized treatment protocol of PCIT and the well-structured training guidelines for therapists may have contributed to this successful implementation of the intervention. However, a number of challenges for clinical practice still lie ahead in order to improve the effectiveness of PMT programs.

Strengths and limitations

The studies presented in this thesis were conducted within a community mental health setting, which can be considered the most important strength. Therefore, the present findings extend the literature on the evaluation of outcomes of PMT programs to everyday clinical practice. The effectiveness study on PCIT satisfied the criteria for clinical representativeness described by Weisz et al. (2005) with respect to participant enrollment (clinic-referred or treatment-seeking families), practicing clinicians as therapists, and a community mental health center as the setting where treatment was provided. Although attention toward the efficacy of evidence-based intervention in real-world settings has increased in recent years, most treatment outcome studies still evaluate an intervention’s

efficacy under optimal conditions in university settings and primarily include recruited and homogenous samples (Weisz et al., 2015). As the availability of evidence-based interventions in the Dutch mental health care services is increasing, the research presented in this thesis contributed to the limited knowledge on the effectiveness of these programs delivered in clinical practice. Further strengths of the current studies were the use of a multisource data collection procedure to address the research questions (e.g., referred and non-referred parents, teachers, therapists, and independent observers). Also, multiple data collection methods were used including several standardized questionnaires, interviews, a case record analysis, and observations. Additionally, another strength is that the studies in this thesis reflect on a broader perspective of implementation outcomes. Because reporting on client outcomes only is not sufficient to evaluate implementation success (Proctor et al., 2011), investigating other implementation outcomes such as the perspectives of the therapists and factors related to treatment attrition provided valuable information with regard to the implementation outcomes of PCIT in the Netherlands.

However, in addition to the strengths, some limitations should be considered with regard to the interpretation of the findings presented in this thesis. In fact, the main strength of the studies in this thesis, doing research in clinical practice, also brought a number of important challenges that limit the generalizability of our findings. First, in most studies the sample sizes were generally small. For instance, for the randomized controlled trial, fewer families were referred for treatment than expected. While the sample size was clearly large enough to detect symptom change after PCIT over time, it may not have been sufficient to detect smaller differences between competing treatments using the intention-to-treat analyzes. Also, the identification of factors predicting treatment attrition was limited by the small sample size.

Another limitation inherent with research within the clinical practice was the violation of the randomization principle in the controlled effectiveness study on PCIT and FCT. Treatment crossovers hampered the interpretation of the primary intent-to-treat analyzes and required additional analyzes. Treatment effects found from the additional analyzes suggesting a preferred status of PCIT above FCT may have been biased and require further evaluation before firm conclusions can be drawn about the relative effectiveness of these two treatment approaches.

Clinical implications

The evidence for the effectiveness of PCIT within the Dutch clinical practice found in our studies support continued practice and further implementation of PCIT in the Netherlands. In addition, the findings in this thesis give directions for future clinical practice. First, our results showed that the ECBI is a useful parent-report for screening of

child disruptive behavior problems and is able to differentiate between diagnostic groups within the externalizing problems spectrum. As the ECBI is a short and easy-to-complete questionnaire, clinicians might use the ECBI in the diagnostic process with children in order to refer them for appropriate treatment. Second, the findings indicated the importance of therapists' skills to achieve treatment effectiveness and address the specific needs of each individual family. As our findings revealed that families with older children had more problems to meet criteria for successful treatment completion, it is important for clinicians to use their clinical judgment to estimate the appropriateness of PCIT for families with older children. The current inclusion criterion for PCIT is children between 2 and 8 years. Although our findings do not require an adaptation of the criterion, using an additional note about the clinicians' judgment for children older than 6 years may increase the effectiveness of PCIT with older children in the future. Also, therapists are encouraged to pay special attention to vulnerable mothers having high levels of internalizing symptoms. By addressing the specific needs of these mothers and helping them to overcome barriers, premature termination of treatment may decrease, leading to more substantial treatment gains. In addition, serious parental mental health problems are often considered as a contra-indication for parent-child interventions. Although, previous studies have also shown that PMT programs can reduce internalizing symptoms in mothers (e.g., Timmer et al., 2011), it is important for clinicians to estimate whether individual treatment before the start of the PMT program is beneficial to increase the outcomes for both the parent and the child.

Third, in the PCIT effectiveness trial, it was found that a majority of the children was exposed to any subtype of maltreatment. This finding underscores the importance of the exclusion criterion that treatment is contraindicated when there are serious concerns about the child's safety in the home situation, with a high risk of out-of-home placement. In case of child maltreatment it is important to ensure the child's safety before start of treatment. In addition, in case of out-of-home placement, PCIT can contribute to provide foster parents specific techniques to build a secure relationship with their foster child and to manage the behavior of the child effectively (Mersky et al., 2014).

Tailoring Parent-Child Interaction Therapy

As previously mentioned, the treatment effectiveness study included a large proportion of multi-stressed families, based on background characteristics such as a large percentage of single-parent families and the majority of the children exposed to maltreatment. Also, baseline means indicating clinical levels of child disruptive behavior and parenting stress in the referred families suggested the high need for treatment. At the same time, however, the high attrition rate indicated that families experienced barriers that may have prevented them from substantially benefitting from treatment.

Tailoring treatment and adapting treatment delivery methods to address specific barriers and needs seems essential to better reach and serve families who need effective treatment. Fortunately, other research on PCIT has evaluated several strategies to overcome important barriers to treatment. First, a motivational component has been found effective for improving treatment retention (Chaffin et al., 2009). A short intervention on the self-motivation of parents may be useful to help them remain in intervention and may be especially useful for families who are not seeking help voluntarily, but are referred by child protection services. These families may experience barriers that make them reluctant to engage in treatment, including transportation barriers and disagreement with the treatment approach (e.g., use of time-out). Clinicians can address these potential barriers during the intake process after referral by interviewing parents about their barriers for treatment. Also, the parents' motivation may be increased by using testimonials from parents who previously completed PMT programs, talking about the pros and cons of the treatment approach, and encouraging commitment to a plan for change. However, for some parents, talking about how specific communication skills can change the interaction with their child is not sufficient to increase their motivation for treatment. Those parents need experiences to become aware of their role in changing the interaction. Therefore, the experiences in the first treatment sessions seem to be critical for the parents' motivation and an emphasis on skill practice and the therapists' responsive coaching is important.

Second, another modification made to PCIT was reducing the number of treatment sessions and creating a clear end point, based on previous reviews and meta-analyses demonstrating that interventions with fewer treatment sessions were more efficacious than lengthier interventions (Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2003; Kaminski et al., 2008). Research studies reporting on the effectiveness of abbreviated versions of PCIT such as a 12-session standard protocol and a 4-session group preventive intervention showed lower attrition rates (Berkovits, O'Brien, Carter, & Eyberg, 2010; Thomas & Zimmer-Gembeck, 2012). In addition, the benefits of a clean end point with regard to treatment retention were already confirmed in the treatment effectiveness trial presented in this thesis. For the 10 to 15-session FCT, higher treatment retention rates was found compared with the non-time-limited PCIT. Also, not only families can benefit from treatment with fewer sessions and a clear end point, but shortened treatment durations may also have implications for the cost-effectiveness of interventions.

Third, another strategy to better reach families and help them remain in the intervention is providing treatment in the family's home. In-home PCIT is designed to overcome the family's transportation barriers and was found effective in high-risk populations (Galanter et al., 2012; Masse & McNeil, 2008). To reduce treatment attrition and reach high-risk families and build on recent literature and the outcomes of our treatment effectiveness

study, PCIT in the Netherlands has been recently modified into an abbreviated 8-session preventive intervention provided in the home setting (PCIT-Home). An efficacy trial on this adapted version is currently ongoing. Besides the evaluation of the effectiveness of PCIT-Home in the decrease of child disruptive behavior problems, this study also focuses on the prevention of child maltreatment, as the prevalence of child maltreatment in the studies presented in this thesis was high. To date, PCIT is viewed as the most effective type of PMT program to reduce the recurrence of physical abuse, and in recent years, the body of literature has been enhanced with respect to the effectiveness of PCIT preventing child maltreatment (Lanier et al., 2014; MacMillan et al., 2009; Thomas & Zimmer-Gembeck, 2011).

Pathways to early intervention

Small sample sizes were considered a limitation of the studies in this thesis. The main reason for the smaller sample sizes was a lower number of referrals than expected. Although modification in interventions can help families to overcome barriers to treatment and improve engagement, in most cases the primary decision to seek treatment and participate in intervention is made by the parents. Underutilization of care is not uncommon in Dutch mental health services (De Haan et al., 2012; Zwaanswijk et al., 2003), and the help-seeking behavior of parents for their child's mental health problems is influenced by several factors. In addition, ethnic minority families are still underrepresented in child mental health care and found less likely to seek treatment due to differences in perception of the severity of the problem, socioeconomic disadvantages, discrimination, and language issues (De Haan et al., 2012; Zwirs et al., 2006). Theoretical models (e.g., the Levels and Filters model) describe a number of stages or levels that parents pass before they finally receive treatment (Godoy & Carter, 2013; Goldberg & Huxley, 2003; Verhulst & Koot, 1991). These models suggest that parents have to recognize the problems, decide to seek help, and subsequently take action (Bevaart, Mieloo, Donker, et al., 2014).

As problem perception and the perceived need for care are the first steps in the help-seeking process, using early detection tools such as parent- and teacher-reports on child psychosocial problems can contribute to the awareness of the child's behavior problems and the impact on family functioning. In recent years, the focus of the Dutch preventive child health care system has been expanded from the traditional focus on physical health to broader areas of child functioning, including the early identification of emotional and behavioral problems using systematic assessment measures for parents and teachers (Bevaart, Mieloo, Wierdsma, et al., 2014). Previous research has emphasized the importance of providing intervention as early as possible (Farrington & Welsh, 2006; Heckman, 2006) and our findings on the risk factors of treatment attrition suggest that older children are at risk for treatment dropout; together, these findings underscore the

need for early identification of child disruptive behavior problems. Instruments such as the ECBI and the Strength and Difficulties Questionnaire (SDQ; Goodman, 1997) are easy to administer and using them for screening purposes is an important step of early identification of child disruptive behavior problems and the pathway to effective treatment (Weitzman & Leventhal, 2006).

Although early screening for child behavior problems would help to identify children at risk for a negative developmental trajectory, much research has emphasized the importance of targeting family risk factors that are related to the development and persistence of child disruptive behavior, such as a low socioeconomic status and a single-parent status (e.g., Appleyard et al., 2005). For instance, the Dutch version of the intervention Nurse-Family Partnership, *Voorzorg*, was found effective for young disadvantaged pregnant woman in preventing child maltreatment, improving the home environment, and child decreasing behavior problems. However, at the end of the intervention, a quarter of the children still showed high levels of externalizing behavior problems (Mejdoubi et al., 2015). Therefore, collaboration between intervention programs targeting different developmental stages is needed to refer families who need additional treatment after participation in an intervention that was not beneficial.

To improve cooperation between professionals, this year the Dutch child mental health care system has been decentralized and transformed. Currently, the Dutch municipalities are responsible for the universal and preventive youth policy in order to provide more efficient, coherent, and cost-effective services (Bosscher, 2014). In this new system, there is an emphasis on distinguishing between families and children who can benefit from preventive services and children and families in need of more specialized care. Reshaping the system may bring benefits for the quality and accessibility of child mental health services, but challenges may lie ahead in maintaining the use of evidence-based interventions. Although not every service has to contain evidence-based practices, it is important to use the current knowledge on the effectiveness of implemented evidence-based interventions in the Dutch child mental health care system. Research is needed on how to integrate evidence-based interventions into the new system to reach children and families who can benefit from PMT programs.

Sustaining treatment fidelity

The extent to which the benefits of an evidence-based intervention implemented in a new country or community setting last over time is largely dependent on treatment fidelity, including adherence to the original treatment protocol, the amount of intervention delivered, and the quality of intervention delivery (Proctor et al., 2011; Schoenwald, 2011). In PMT programs, higher levels of treatment fidelity have been associated with

better outcomes for child behavior (Eames et al., 2009). Therefore, it is a concern when interventions are transported from university clinics to everyday clinical practice, where clinicians may adapt interventions because they consider the protocol less suitable for the more complex cases in their practice (Michelson et al., 2013; Thomas, Zimmer-Gembeck, & Chaffin, 2014). When therapists modify the intervention, it is important to encourage them to use systematic evaluations of their clinical work or to improve their willingness to participate in treatment evaluation studies. Additional research on this transportability determinant of disseminating PMT programs is essential to understand why therapists make modifications and to what extent interventions remain effective following changes (Thomas et al., 2014).

Moreover, barriers experienced by the therapists can also limit treatment fidelity. In the study on the perspectives of Dutch therapists, barriers were experienced with regard to the equipment for treatment and the availability of the trainers, which may hamper treatment fidelity. To improve treatment fidelity of PMT programs, it is important to address these barriers in order to ensure maintenance and quality of intervention delivery. Most PMT programs have established frameworks for fidelity monitoring, including demonstrating skill mastery at the conclusion of training, frequent consultation, and subsequent yearly certification trajectories (Sedlar, Bruns, Walker, Kerns, & Negrete, 2015). In the Netherlands, specific guidelines and requirements are being developed for PCIT therapist certification. However, not only must therapists contribute to treatment fidelity, but also trainers and agencies should facilitate this trajectory. The support of the agency is crucial to the sustainability and success of the intervention, including the acceptability of the intervention, integrating the intervention with caseloads, and financial support to maintain the quality of the intervention delivery.

Implications and directions for future research

Treatment attrition

In the current literature, a number of research questions relevant to the effectiveness of PMT programs remain understudied. As treatment attrition is an important concern with regards to the effectiveness of PMT programs, continued research is recommended to examine if modifications lead to higher treatment retention. The ongoing study of the abbreviated 8-session PCIT in the home setting will provide more insights regarding to what degree this adaptation decreases treatment attrition and increases the accessibility of the intervention. Contrary to the findings on treatment attrition in PCIT, a recent study among dropouts in the Dutch child mental health care found that ethnic background and high levels of externalizing problems were risk factors for premature treatment termination and referral to other services (De Haan et al., 2015). The inconsistent findings

suggest that the risk factors for dropout can differ from sample to sample and may be influenced by the treatment approach and the types of problems that are addressed. As PMT programs are increasingly implemented with other populations including children with anxiety disorders (Comer et al., 2012), children with developmental delays (Bagner & Eyberg, 2007), and children with autism spectrum disorders (Ginn, Clionsky, Eyberg, Warner-Metzger, & Abner, 2015), researchers are encouraged to include the treatment attrition rate and examine barriers to treatment as an outcome for treatment effectiveness within these specific populations.

Effective components

Most evidence-based PMT programs include components associated with behavioral change, including the possibility for parents to practice new skills with their child during the sessions, increasing positive parent-child interactions, the use of time-out, and promoting consistency (Kaminski et al., 2008). However, there is still limited knowledge about which mechanisms or elements in treatment are the most effective to change the parents' behavior maximizing the improvement in the child's behavior. Currently, there is limited knowledge on which elements in PCIT contributed the most to the behavioral change of parents and children included in this thesis. Tailoring interventions in order to address the specific needs of individual families underscores the need for more knowledge on the effective elements. Thereby, understanding the mechanisms of change may be the most important investment to improve therapist training and treatment implementation (Kazdin & Nock, 2003). Over the past years, literature on specific elements is growing to include clinical directions on specific therapist coaching skills (e.g., responsive and supportive coaching) (Barnett, Niec, & Acevedo-Polakovich, 2014), and findings indicated that teaching labeled praises was not superior to unlabeled praises to reduce child disruptive behavior (Leijten, Thomaes, Dishion, Orobio de Castro, & Matthys, 2015). Other common PMT program elements such as ignoring negative child behavior and the use of time-out, need more attention in future research. In addition, besides the directions for future research on effective elements in PMT programs, important challenges lie ahead for the adoption of new insights in the current clinical practice. Improving clinical practices and therapist training based on new insights from research also emphasizes the need for collaboration between researchers and clinicians, and underscore the importance for continued research in everyday clinical practice.

Long-term effectiveness

Another important recommendation for future research directions is that more longitudinal research should be done. Given the persistence of child disruptive behavior problems and their role in the negative developmental outcomes are clear and well studied (Broidy et al., 2003), it is necessary to understand how the maintenance of posi-

tive behavior change after a PMT program alters child functioning later in life (Fossum, Handegård, Adolfsen, Vis, & Wynn, 2015; Kolko, Lindhiem, Hart, & Bukstein, 2014). Studies on the Perry Preschool Program and the Nurse-Family Partnership program show that some research projects succeed in keeping subjects in their study for more than 20 years (Olds, 2006; Schweinhart et al., 2005). Also, several follow-up studies on the maintenance of PMT programs have been conducted, but the time intervals remain small. Follow-up studies in child psychotherapy rarely follow children for longer than 12 months (Kazdin, 1993) and a recent meta-analysis showed a mean follow-up period of 8.9 months (Fossum et al., 2015). In the Netherlands, evidence for sustainability was found for the preventive effectiveness of a specific PMT program, Incredible Years. Findings indicated a two-year maintenance of parenting skills and observed child behavior (Posthumus et al., 2012). Our findings in the effectiveness trial also suggested treatment maintenance at six months after PCIT. In addition, long-term maintenance of changes after PCIT has been evaluated in several studies supporting the long-term effectiveness of PCIT up to six years after treatment (Boggs et al., 2004; Hood & Eyberg, 2003; Nixon et al., 2004). However, collecting follow-up data over long time periods is required to determine whether PMT programs contribute to outcomes in middle childhood and adolescence. Questions remain as to which amount of PMT is sufficient to change known adverse trajectories for multiple domains of functioning, such as the prevention of youth offending and adult crime (Eyberg, Edwards, Boggs, & Foote, 1998). To maintain initial treatment gains, it has been suggested that continued monitoring and treatment at a less intensive level is required (Kazdin, 1997). A recent study on the effectiveness of a maintenance treatment after PCIT, however, did not find support for the continued care model. Eyberg et al. (2014) suggested that younger children are more amendable to lasting change without continued intervention because younger children have shorter and less persistent histories of coercive parent-child interactions than older children (Eyberg et al., 2014). Therefore, future research on treatment maintenance is important to obtain more knowledge on the sustainability of PMT programs.

In addition, besides investigating the long-term effectiveness of evidence-based interventions, follow-up research on interventions that show limited improvements or even negative outcomes is at least as important. In our treatment effectiveness trial, findings on PCIT contribute to a large body of evidence on this intervention, while our study was the first random controlled research design employed on the effectiveness of the Dutch-developed FCT. With regard to the decrease in disruptive behavior problems assessed with standardized measures, children appeared to insufficiently benefit from FCT. However, we did not find negative outcomes, and the attrition rate was low. Therefore, future research and follow-up studies including additional outcome measures, which are more suited to the aims of the intervention, are required to draw firm conclusions on the ef-

fectiveness of FCT for young children with disruptive behavior problems. Future research on FCT that includes additional outcome measures on family functioning would facilitate the task of defining which types of problems are best addressed or which populations benefit the most from a treatment approach using a specific form of art psychotherapy.

Conclusion

At the end of this thesis, the knowledge on the effectiveness of PMT programs treating young children's disruptive behavior problems has been expanded in the Netherlands. Evidence was found for the effectiveness of a particular PMT program, PCIT in Dutch clinical practice. The previous chapters highlight that the international dissemination of PCIT to the Netherlands does not require cultural adaptation of the training model and the behavioral measures (ECBI and DPICS). Also, PCIT is able to reduce disruptive child behavior in high-risk families referred to community mental health services in the Netherlands, but treatment attrition remains a concern. By answering the research questions in this thesis, many new questions have been raised and future research on long-term maintenance, effective elements, and treatment retention is encouraged in order to understand how benefits of PMT programs for children, their families, and the greater society can be maximized.

Chapter 9

Nederlandse samenvatting

Summary in Dutch

Elk kind is wel eens koppig of luistert slecht naar zijn of haar ouders. Dit gedrag past bij de normale ontwikkeling van jonge kinderen en bij de meeste kinderen wordt dit gedrag minder als ze ouder worden (Tremblay, 2010). Bij een kleine groep kinderen (7 tot 11%) blijven de gedragsproblemen echter bestaan (Broidy e.a., 2003) en zonder behandeling kunnen deze tijdens de ontwikkeling verergeren (Bongers e.a., 2004; Nock e.a., 2007). Ook is aangetoond dat deze kinderen een verhoogd risico hebben op het ontwikkelen van een oppositioneel-opstandige gedragsstoornis (oppositional defiant disorder, ODD) of een antisociale gedragsstoornis (conduct disorder, CD). Vaak komen gedragsstoornissen bij kinderen voor in combinatie met ADHD (attention deficit hyperactivity disorder). Samen zijn ADHD, ODD en CD momenteel de meest voorkomende stoornissen bij jonge kinderen in Nederland (Rijlaarsdam e.a., 2015). De ontwikkeling van gedragsstoornissen op jonge leeftijd kan leiden tot ontwikkelingsproblemen op sociaal en emotioneel gebied en de schoolprestaties verminderen. Daarnaast vormen gedragsproblemen op jonge leeftijd een risico op werkloosheid, relatieproblemen, verschillende psychiatrische stoornissen, middelenmisbruik en criminaliteit in de adolescentie en in de volwassenheid (Fergusson e.a., 2015; Frick & Nigg, 2012). Hierdoor hebben gedragsproblemen niet alleen gevolgen voor een individueel gezin, maar zijn er ook brede maatschappelijke en financiële gevolgen (Scott e.a., 2001).

De risico's op latere leeftijd die gedragsproblemen in de kindertijd met zich meebrengen onderstrepen het belang van vroegtijdig ingrijpen (Heckman, 2006). Interventies waarbij opvoedingsvaardigheden van ouders worden versterkt om het gedrag van het kind te veranderen, ook wel oudertrainingen genoemd, worden op dit moment als de meest effectieve strategie beschouwd om gedragsproblemen bij jonge kinderen te verminderen (Eyberg e.a., 2008; Weisz & Kazdin, 2010). De meeste oudertrainingen zijn oorspronkelijk ontwikkeld in de Verenigde Staten (VS) en Australië. In de afgelopen jaren is het wetenschappelijk bewijs voor de effectiviteit van deze interventies op het verminderen van gedragsproblemen bij kinderen erg toegenomen. Dit heeft er toe geleid dat deze interventies niet alleen worden toegepast in het land van herkomst, maar ook worden geïmplementeerd en onderzocht in andere landen. Ook in Nederland zijn er verschillende oudertrainingen die zich richten op jonge kinderen met gedragsproblemen en hun ouders, waaronder Parent-Child Interaction Therapy (PCIT) (Nederlands Jeugd Instituut, 2015). PCIT is oorspronkelijk ontwikkeld in de VS en is daar erkend als een bewezen effectieve en kosteneffectieve interventie (Lee e.a., 2015). In Nederland is de implementatie van PCIT in 2007 gestart.

Parent-Child Interaction Therapy

Parent-Child Interaction Therapy (PCIT; Eyberg & Funderburk, 2011) is een geprotocolleerd behandelprogramma voor kinderen met gedragsproblemen in de leeftijd van 2 tot

en met 7 jaar. PCIT is een interventie die gebaseerd is op gedragstheoretische modellen, de sociale leertheorie en de gehechtheidstheorie. PCIT heeft als doel het interactiepatroon van ouder en kind te veranderen om te zorgen voor een gedragsverandering bij het kind. De therapie vindt plaats in een spelkamer en bestaat uit twee fases waarin ouders specifieke vaardigheden leren. Hierbij worden ouders vanachter een one-way screen gecoacht door een therapeut via een microfoon in het oor. PCIT is gericht op het versterken van opvoedingsvaardigheden, het verbeteren van de ouder-kind relatie, het leren grenzen stellen en beter leren luisteren door het kind. Tijdens de eerste fase van PCIT, de Kindgerichte Interactie (KGI), leren ouders specifieke spel- en communicatievaardigheden. Ouders leren hun kind tijdens het spel te volgen en positieve aandacht te geven aan het gewenste gedrag van het kind, door het kind na te zeggen, het gedrag te benoemen en gerichte complimenten te geven. Tegelijkertijd leren ouders negatief en ongewenst gedrag te negeren. Tevens leren ouders om tijdens het spel hun kind geen vragen te stellen, geen opdrachten te geven of kritiek te leveren. In de tweede fase van de therapie, de Oudergerichte Interactie (OGI), gaan ouders door met het gebruik van de vaardigheden uit de eerste fase, maar leren tevens het kind naar hen te laten luisteren. Ouders worden door de therapeut gecoacht om effectieve opdrachten te geven en op een consistente en veilige manier consequenties (time-out) te verbinden aan ongehoorzaamheid en gedrag dat niet genegeerd kan worden. Het succesvol afronden van PCIT gaat gepaard met het behalen van de zogenoemde mastery criteria voor de KGI en OGI vaardigheden. Andere criteria voor het afronden van de therapie zijn dat de gedragsproblemen van het kind teruggebracht zijn tot een normaal niveau van functioneren en dat ouders genoeg vertrouwen hebben om het gedrag van het kind zelfstandig te hanteren. PCIT kent hierdoor geen limiet in het aantal therapieessessies. Het aantal sessies, van start tot de afronding, verschilt daarom per gezin. Eerder onderzoek, met name in de VS, laat positieve resultaten van PCIT zien op de vermindering van gedragsproblemen bij het kind, opvoedingsstress bij ouders en een verbetering van opvoedingsvaardigheden (Cooley e.a., 2014; Thomas & Zimmer-Gembeck, 2007).

Onderzoek in de klinische praktijk

Net als bij PCIT, worden veel interventies onderzocht op effectiviteit onder optimale omstandigheden. Vaak worden cliënten geworven in plaats van verwezen voor de behandeling. Daarnaast worden in veel studies de cliënten behandeld op een plek gecreëerd voor onderzoek (zoals behandelcentra in universiteiten), in plaats van bij een regulier behandelcentrum (Weisz e.a., 2014). De afgelopen jaren is daarom de aandacht voor het onderzoek naar de werkzaamheid van interventies in de alledaagse klinische praktijk toegenomen (Michelson e.a., 2013). Onderzoek doen in de klinische praktijk kent echter vaak complicerende factoren. In de klinische praktijk is de voor hulp verwezen groep ouders en kinderen vaak minder homogeen en is er sprake van problematiek op meerdere

gebieden (comorbiditeit en multiprobleemgezinnen). Ook komt het voor dat therapeuten interventies aanpassen, omdat zij het protocol niet voldoende vinden passen bij de meer complexe casussen die zij behandelen. Dit heeft gevolgen voor de behandelintegriteit van een interventie (Thomas e.a., 2014). Hierdoor liggen de effect sizes voor effectiviteit van interventies bij onderzoek in de klinische praktijk vaak lager (Weisz e.a., 2013) en komt het vroegtijdig afbreken van de behandeling regelmatig voor (De Haan e.a., 2015; Lyon & Budd, 2010). Ondanks deze beperkende factoren is het van belang om de effectiviteit in de klinische setting te onderzoeken en inzicht te krijgen hoe bruikbaar effectief bewezen interventies zijn in de alledaagse klinische praktijk van het behandelen van de ouders en kinderen die de hulp vaak het hardst nodig hebben.

Het primaire doel van dit proefschrift is om de effectiviteit van PCIT te toetsen in de Nederlandse klinische praktijk. Daarnaast is er ook gekeken naar aspecten die samenhangen met de implementatie van een nieuwe interventie, zoals de bruikbaarheid van de meetinstrumenten, uitval tijdens de behandeling en de ervaringen van de therapeuten zelf. Het onderzoeksprotocol (METC 09/081) van de effectstudie naar PCIT is goedgekeurd door de Medisch Ethische Toetsingscommissie van het Academisch Medisch Centrum en is geregistreerd in het Nederlands Trial Register (NTR1743). De effectiviteitstudies zijn uitgevoerd bij de Bascule, academisch centrum voor kinder- en jeugdpsychiatrie in Amsterdam.

Meetinstrumenten voor gedragsproblemen bij kinderen en ouder-kind interactie

De eerste twee studies in het proefschrift, hoofdstuk 2 en 3, zijn gericht op twee meetinstrumenten die zowel tijdens de therapie als bij onderzoek naar PCIT en andere oudertrainingen gebruikt worden. In **hoofdstuk 2** worden de uitkomsten gepresenteerd van het onderzoek naar de betrouwbaarheid en validiteit van de Nederlandse vertaling van de Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). De ECBI is internationaal een veelgebruikte oudervragenlijst voor het meten van gedragsproblemen bij kinderen. De vragenlijst bestaat uit twee schalen: de Intensiteit Schaal, die de frequentie van de gedragsproblemen in kaart brengt en de Probleem Schaal, die meet in welke mate ouders een specifieke gedraging als probleem ervaren. De psychometrische eigenschappen van de ECBI zijn onderzocht in een niet-klinische onderzoeksgroep van 326 kinderen en een klinische onderzoeksgroep van 197 kinderen met verschillende etnische achtergronden. De resultaten lieten zien dat de ECBI schalen één dimensie van gedragsproblemen meten. Daarnaast is een goede test-hertest betrouwbaarheid over een periode van zes maanden gevonden in de niet-klinische steekproef. In de klinische steekproef had de ECBI tevens een goede convergente en divergente validiteit met de Strengths and Difficulties Questionnaire (Goodman, 1997). Verder laten de resultaten zien dat de Intensiteit Schaal van de ECBI een goed onderscheidend vermogen heeft binnen het spectrum van gedrags-

stoornissen. Dit maakt de ECBI ook bruikbaar voor de screening van gedragsproblemen bij kinderen. De onderzoeksbevindingen in dit hoofdstuk laten zien dat de Nederlandse vertaling van de ECBI goede psychometrische eigenschappen heeft die vergelijkbaar zijn met de oorspronkelijke, Engelstalige versie, waardoor de vragenlijst goed bruikbaar is voor klinische- en onderzoeksdoeleinden in Nederland.

Naast het gebruik van vragenlijsten wordt er bij onderzoek naar de effectiviteit van oudertrainingen vaak gebruik gemaakt van observationele meetinstrumenten. Het verbeteren van opvoedingsvaardigheden bij ouders staat centraal in oudertrainingen en zo ook binnen PCIT. Observationele codeersystemen kunnen hierover objectieve informatie geven en zijn vaak sensitiever in het meten van veranderingen voor en na behandeling (Gardner, 2000). In **hoofdstuk 3** worden de resultaten beschreven van het validatieonderzoek naar het Dyadic Parent-Child Interaction Coding System (DPICS; Eyberg e.a., 2013), een observationeel instrument dat de kwaliteit van de ouder-kind interactie meet. Resultaten van 31 niet-klinische kinderen en hun moeders laten een goede test-herstest betrouwbaarheid over de periode van een week zien. Ook is er sprake van een hoge interbeoordelaarsbetrouwbaarheid onder de Nederlandse codeurs. Tevens zijn de scores van de Nederlandse moeders en kinderen op de DPICS categorieën vergeleken met scores van Amerikaanse moeders en kinderen. De resultaten laten zien dat Nederlandse moeders in een wat mindere mate controlerend gedrag vertonen dan Amerikaanse moeders. Op alle andere dimensies, waaronder de hoeveelheid complimenten en het aantal neutrale uitspraken, is de interactie van Nederlandse moeders en Amerikaanse moeders met hun kinderen overwegend vergelijkbaar. De resultaten ondersteunen daarom de bruikbaarheid van de DPICS als meetinstrument in de Nederlandse situatie. Dit geldt zowel voor het meten van de voortgang tijdens PCIT als bij het evalueren van behandeluitkomsten ten aanzien van de verbetering van opvoedvaardigheden van ouders en de kwaliteit van de ouder-kind interactie.

Effectiviteit van Parent-Child Interaction Therapy

De effectiviteitstudies naar PCIT zijn beschreven in hoofdstuk 4 en hoofdstuk 5. Aangezien PCIT als doel heeft om de gedragsproblemen van het kind te verminderen, is het gedrag van het kind (gemeten met de ECBI) de primaire uitkomstmaat in beide studies. Omdat de ouders de ECBI bij elke behandelsessie invulden, kon de effectiviteit van PCIT na de implementatie bij de Bascule in 2007 bij 37 kinderen in een pilot studie (**hoofdstuk 4**) worden geëvalueerd. Gebruikmakend van een retrospectieve onderzoeksopzet laten de resultaten een statistische significante vermindering in de gedragsproblemen van het kind zien na afronding van PCIT. Daarnaast verschillen de scores op ECBI Intensiteit Schaal na PCIT niet meer significant van de scores op deze schaal van de 59 kinderen een niet-klinische vergelijkingsgroep. Dit betekent dat de gedragsproblemen van de

kinderen na PCIT zijn afgenomen naar een niveau van normaal functioneren. Op basis van de bevindingen uit de pilot studie lijkt PCIT veelbelovend voor jonge kinderen met gedragsproblemen in de Nederlandse situatie.

Om meer gefundeerde bewijskracht te vinden voor de effectiviteit van PCIT is vervolgens een longitudinaal, gerandomiseerd en vergelijkend onderzoek opgezet. **Hoofdstuk 5** presenteert de resultaten van de effectstudie waarin de behandel-effecten van PCIT vergeleken zijn met een andere interventie, de Gezins-Creatieve Therapie (GCT; Beelen, 2003). GCT is erop gericht de interactiepatronen van gezinsleden te veranderen, ouders plezier in het ouderschap te laten ervaren en positieve ervaringen op te laten doen. Ondanks het feit dat deze interventie in Nederland frequent wordt ingezet bij de hulp aan ouders en kinderen, is deze therapie relatief weinig wetenschappelijk onderzocht. Wel zijn er verschillende gedetailleerde casestudies beschikbaar waarin de blijvende verbeteringen in de interactiepatronen van de gezinnen beschreven worden (zie bijvoorbeeld Smits, 2008; Witte, 2013). In totaal werden 45 kinderen random toegewezen aan PCIT of GCT. Een groot deel van de steekproef bestaat uit risicogezinnen. Zo bleek dat 71% van de kinderen is blootgesteld aan een vorm van kindermishandeling. De primaire uitkomstmaat is het gedrag van het kind (ECBI). Daarnaast zijn ook secundaire uitkomstmaten meegenomen, waaronder opvoedingsstress (NOSI-K; De Brock e.a., 1992), opvoedingsvaardigheden (DPICS; Eyberg e.a., 2013) en de tevredenheid met de behandeling (TAI; Eyberg, 1992a). De uitvoering van het onderzoek in de klinische praktijk kende echter enkele problemen, zoals problemen met de instroom en ook na de randomisatie hebben zich enkele problemen voorgedaan. Zo hebben enkele gezinnen niet de toegewezen interventie (GCT) ontvangen, maar kregen toch PCIT als behandeling. In een aantal gevallen omdat ze het niet eens waren met de randomisatie uitkomst en bij enkele gezinnen werd er toch voor PCIT gekozen op basis van het klinisch oordeel van de therapeut.

De initiële vergelijking tussen de groepen op de primaire uitkomstmaat liet geen statistisch significante verschillen zien. Vanwege de gezinnen die zijn overgestapt van GCT naar PCIT is de interpretatie van deze eerste vergelijking beperkt, daar het onduidelijk blijft of er wel verschillen gevonden waren als alle kinderen de interventie van randomisatie hadden ontvangen. Daarom zijn aanvullende analyses uitgevoerd waarbij kinderen vergeleken zijn op basis van de behandeling die zij daadwerkelijk ontvangen hebben. De opzet van deze vergelijkende effectstudie vraagt echter wel om voorzichtigheid in de interpretatie en generalisatie van de onderzoeksbevindingen, omdat deze meer ruimte overlaat voor beïnvloeding van de onderzoeksresultaten door mogelijke externe factoren. De resultaten van de aanvullende analyses op de primaire en secundaire uitkomstmaten laten zien dat PCIT leidt tot een afname van gedragsproblemen bij het kind en een verbetering van opvoedingsvaardigheden en afname van opvoedingsstress bij de ouders.

Ook is de tevredenheid van ouders over PCIT hoog. Tevens suggereren de resultaten dat gezinnen die het PCIT protocol volledig konden afronden betere uitkomsten hadden bij de follow-up op zes maanden na behandeling. De resultaten uit deze studie zijn in lijn met de bevindingen uit internationaal onderzoek.

Bij GCT is geen klinisch relevante verbetering gevonden op het gebied van gedragsproblemen, opvoedingsvaardigheden en opvoedingsstress. Wel is er minder uitval geweest bij de gezinnen die GCT als behandeling hebben ontvangen (7%) dan bij de gezinnen die PCIT hebben ontvangen (52%). Tevens moet worden bedacht dat de meetinstrumenten in dit onderzoek niet geschikt zijn om het primaire doel van GCT te meten, namelijk betere omgang tussen ouders en kinderen. Door de methodologische beperkingen, de aanpassing van de onderzoeksopzet en een kleine steekproef is het niet mogelijk om verstrekkende conclusies over de behandel-effectiviteit van GCT te trekken. Dit onderstreept het belang van verder onderzoek naar deze behandelmethodede. Ondanks de eerder genoemde beperkingen laten de resultaten zien dat PCIT een veelbelovende interventie is voor jonge kinderen met gedragsproblemen, ook in Nederland.

Voortbouwend op de bevindingen van de effectiviteitstudies waarin de resultaten laten zien dat het vroegtijdig afbreken van PCIT leidt tot minder profijt van de behandeling op langere termijn, is in **hoofdstuk 6** gekeken naar de uitval bij 40 gezinnen die PCIT hebben ontvangen. Bij 40% van deze gezinnen is het behandeltraject vroegtijdig afgebroken, dat wil zeggen voordat alle criteria voor afronding zijn behaald. Dit percentage is relatief hoog, maar enigszins lager dan internationaal onderzoek naar PCIT in vergelijkbare settings (Lanier e.a., 2011; Pearl e.a., 2012). De resultaten laten ook zien dat gezinnen met oudere kinderen een verhoogd risico hebben om PCIT vroegtijdig af te breken, net als moeders met symptomen van angst en depressie. In tegenstelling tot de literatuur (Reyno & McGrath, 2006) laten de onderzoeksbevindingen van deze studie geen verhoogd risico op uitval zien voor gezinnen met een lage sociaaleconomische status, onder andere laagopgeleide gezinnen of migrantengezinnen. Dit maakt het aannemelijk dat PCIT een passende behandeling is voor een brede doelgroep. Ook suggereren deze bevindingen dat risicofactoren voor vroegtijdige uitval kunnen verschillen per steekproef en mogelijk worden beïnvloed door het type of de lengte van de oudertraining en de problemen en de doelen waarop de behandeling zich richt.

Ervaringen van therapeuten

Tot slot beschrijft **hoofdstuk 7** de ervaringen van de therapeuten met PCIT en de Nederlandse implementatie hiervan. Het trainen van professionals is een belangrijk onderdeel bij de implementatie van een interventie en een succesvolle implementatie is medebepalend voor de effectiviteit van een interventie (Proctor e.a., 2011). In dit onderzoek zijn 18

PCIT therapeuten geïnterviewd over hun ervaringen met de training tot PCIT therapeut en hun zienswijze op de uitvoering van de interventie. De resultaten laten zien dat de PCIT therapeuten overwegend positief zijn over de training en de behandeling zelf. Echter hebben zij ook verbeterpunten en beperkingen bij de uitvoering van PCIT benoemd. Zo willen de therapeuten bijvoorbeeld graag meer supervisie, en ook benadrukken zij de problemen die het werken met multiprobleemgezinnen met zich meebrengen. Voor het behoud van de behandelintegriteit en bredere implementatie van PCIT in Nederland is het van belang om de training, de aanvullende consultatie en certificering voor therapeuten goed af te stemmen op de behoefte van de therapeuten. Tevens is het noodzakelijk hen handvatten te bieden om de veelgenoemde problemen te voorkomen of te verminderen. Op deze manier kan de effectiviteit van PCIT in Nederland ook in de toekomst worden gewaarborgd.

Samenvattend geven de studies in dit proefschrift meer inzicht in een effectieve manier van het behandelen van gedragsproblemen bij jonge kinderen in de alledaagse klinische praktijk. De resultaten laten zien dat een oudertraining ontwikkeld in de VS op een succesvolle manier in Nederland geïmplementeerd kan worden zonder de noodzaak voor (culturele) aanpassingen in het behandelprotocol, de meetinstrumenten en de training voor therapeuten.

Implicaties

De studies in dit proefschrift ondersteunen het internationale bewijs voor de effectiviteit van PCIT in het verminderen van gedragsproblemen bij jonge kinderen. Door de hoge effect sizes (≤ 0.77) gevonden in de effectiviteitstudies wordt het verder inzetten van PCIT bij deze kinderen en hun ouders in de klinische praktijk aanbevolen. Ook de bredere implementatie van PCIT in Nederland wordt geadviseerd, bij voorkeur met aanvullend onderzoek. In het kader van de huidige transformatie en transitie van de zorg voor jeugd in Nederland, waarbij gemeenten verantwoordelijk zijn voor het preventieve en curatieve jeugdbeleid, kunnen oudertrainingen een belangrijke interventie zijn. Vroegtijdige signalering van problemen en het vervolgens bieden van een effectieve behandeling is belangrijk om kwalitatief goede zorg te bieden en verergering van de problemen met negatieve gevolgen op latere leeftijd te voorkomen. Door uitval te verminderen kan de effectiviteit van oudertrainingen toenemen.

Internationaal zijn verschillende aanpassingen van PCIT onderzocht met positieve resultaten. Een voorbeeld hiervan is het toevoegen van motiverende gesprekken voorafgaand aan PCIT (Chaffin e.a., 2009). Ook is PCIT met een vast aantal sessies onderzocht waardoor er een duidelijk eindpunt voor ouders is (bijvoorbeeld 12 sessies; Thomas & Zimmer-Gembeck, 2012). Deze verkorte PCIT had vergelijkbare of zelfs betere ef-

fecten dan PCIT in originele vorm, zonder een limiet in het aantal sessies. Tevens laat onderzoek naar PCIT in de thuissituatie minder uitval zien (Galanter e.a., 2012). De internationale ontwikkelingen hebben ook in Nederland gezorgd voor een doorontwikkeling van PCIT in een aangepaste en verkorte vorm met 8 sessies in de thuissituatie (PCIT-Home). Naar verwachting helpt dit om uitval te verminderen en de bereikbaarheid van de interventie te vergroten. Momenteel wordt PCIT-Home met een subsidie van Stichting Kinderpostzegels geïmplementeerd en wetenschappelijk onderzocht op effectiviteit. Tevens komt er in de internationale literatuur steeds meer bewijs voor de effectiviteit van PCIT in de preventie van kindermishandeling en wordt PCIT beschouwd als meest effectieve oudertraining om het opnieuw plaatsvinden van fysieke mishandeling te voorkomen (MacMillan e.a., 2009; Thomas & Zimmer-Gembeck, 2011). Naast de effectiviteit van PCIT-Home op de vermindering van de gedragsproblemen van het kind, wordt daarom ook onderzocht in hoeverre deze aangepaste vorm van PCIT effectief is in de preventie van kindermishandeling. Doorontwikkeling en continuerend onderzoek naar oudertrainingen of effectieve elementen hiervan is belangrijk om de effectiviteit van deze interventies te vergroten. Op deze manier worden meer kinderen en hun ouders bereikt en kan een groter percentage van de behandeling profiteren. Dit kan leiden tot een vermindering van gedragsproblemen bij jonge kinderen en verdere negatieve gevolgen in de latere ontwikkeling.

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Publications

Manuscripts in this thesis

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Curriculum vitae

Mariëlle Abrahamse was born on April 15th, 1986 in Vlissingen, the Netherlands. In 2004 she graduated from high school (Christelijke Scholengemeenschap Walcheren, Middelburg). After graduation, she studied Educational Sciences at Leiden University and graduated in 2008. In 2009, she started as a PhD candidate at the University of Twente in collaboration with the department of child and adolescent psychiatry (de Bascule) at the Academic Medical Center (AMC) in Amsterdam, where she participated in several research projects. Since May 2014, she works as a postdoctoral researcher at the Bascule and AMC after receiving a grant from Stichting Kinderpostzegels to implement and study the effectiveness of home-based Parent-Child Interaction Therapy (PCIT-Home). From January 2016 she will start a five-month postdoctoral research fellowship in the Department of Psychology at the Central Michigan University, United States.

Mariëlle Abrahamse werd geboren op 15 april 1986 in Vlissingen. Ze groeide op in Middelburg en behaalde daar in 2004 haar atheneum diploma bij de Christelijke Scholengemeenschap Walcheren (CSW). Datzelfde jaar begon zij met de studie Pedagogische Wetenschappen aan de Universiteit Leiden en studeerde in 2008 af. In 2009 startte ze als promovendus bij de Universiteit Twente in samenwerking met de afdeling kinder- en jeugdpsychiatrie (de Bascule) van het Academisch Medisch Centrum (AMC) in Amsterdam. Dit promotietraject is tot stand gekomen met een subsidie van ZonMw. Dankzij een subsidie van Stichting Kinderpostzegels werkt zij sinds mei 2014 als postdoc onderzoeker bij de implementatie- en effectiviteitstudie naar Parent-Child Interaction Therapy in de thuissituatie (PCIT-Home). Vanaf januari 2016 zal zij een semester gaan werken als postdoctoraal onderzoeker bij het Department of Psychology aan de Central Michigan University in de Verenigde Staten.

