

Helping Families Change

The adoption of the Triple P –
Positive Parenting Program in the Netherlands



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1 General introduction

1.1 Objective and research questions

This thesis is about the parenting program Triple P – Positive Parenting Program. This evidence-based program, which was originally developed in Australia, was designed to prevent and offer treatment for mild and severe behavioral, emotional and developmental problems in children from birth to age 16, by means of enhancing the knowledge, skills and confidence of their parents. Triple P incorporates five levels of interventions on a tiered continuum of increasing intensity. The rationale for this stepped-care strategy is that there are different levels of dysfunction and behavioral disturbance in children, and parents may have different needs and desires regarding the type, intensity and mode of assistance they require (Sanders, 1999).

In the Netherlands an implementation trial was executed to the Triple P program, because of the following reasons. First, there was a need for a tiered continuum of interventions of increasing intensity, from universal prevention to intensive care for parents and their children. Second, there was a need for an evidence-based parenting intervention. Implementing extensively evaluated interventions of another country are relatively inexpensive, easily accessible and convenient.

This thesis will examine the implementation trial of the Triple P – Positive Parenting Program by answering five questions:

1. Is Triple P effective for the improvement of parenting?
2. What are the effects of Triple P on behavior problems in children?
3. Is Primary Care Triple P an addition to the Primary Care Parenting Support in the Netherlands?
4. What is the impact of Group and Standard Triple P on children's behavior, parenting and parental psychopathology in the Dutch practice?
5. How to implement a multilevel program in another country?

Before we will address these research questions, we will clarify briefly the underlying key-concepts: behavioral and emotional problems in children, parenting interventions and the Triple P – Positive Parenting program. Then we will present the outline of the thesis.

1.2 Behavioral and emotional problems in children

Psychosocial problems in children are often divided into two parts: behavior problems (externalizing problems), such as aggressive or delinquent behavior, and emotional problems (internalizing problems), such as withdrawn behavior, physical complaints, anxiety, or depressive complaints.

Behavioral and emotional problems are quite common in children and adolescents. The prevalence of these problems varies among studies, because they depend on the age of the children, definitions of psychosocial problems, time of research or severity of the problems.

While psychological problems appear less frequently in younger children, there is still a reported incidence of about 6% in Dutch babies (0-14 months), and 6% in Dutch toddlers (Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005). For Dutch preschool children, the prevalence of behavioral and emotional problems is about 8% (Koot & Verhulst, 1991) to 10% (Van der Ploeg, 1997). In another Dutch study, 20.7% of Dutch elementary and high school students, aged 11 to 16 years, experienced externalizing behavioral problems and 18.6% have been found to experience internalizing problems (Ter Bogt, Van Dorsselaer, & Vollebergh, 2003).

For Dutch preschool and schoolchildren aged 0 to 12 years taken together, it is shown that 5% experience severe emotional and behavioral problems (Zeijl et al., 2005). The prevalence of clinical internalizing and externalizing problems in Dutch children aged 11 to 17 years is approximately 11 to 13% (Ter Bogt, Van Dorsselaer, & Vollebergh, 2003).

These Dutch findings resemble the findings in international samples. Several studies in Australia, Canada, Germany, New Zealand, United Kingdom and the USA, have shown that approximately 18% of all children experience behavioral or emotional problems at some point in their development (Sanders, Markie-Dadds, & Turner, 2003; Zubrick et al., 1995). Other international studies showed that 11 – 15% of children under 13 years of age (Sawyer et al., 2000; Silburn et al., 1996; Zubrick et al., 1995), and between 13-17% of youngsters aged 14-18 years experience significant mental health problems (Murray & Lopez, 1996).

1.3 Parenting interventions

Parenting interventions have been developed to support parents in undertaking their role in raising their children. The way in which a family interacts has a considerable influence on the psychological, physical, social, and economic welfare of children. Parenting is associated with the well-being of children. A high level of parental support and positive parent-child interactions have a positive impact on children (Mahoney et al., 1998), whereas the lack of a warm positive relationship, insecure attachment, harsh, inflexible, rigid, or inconsistent discipline practices, inadequate supervision of and involvement with children, marital strife and/or breakdown, and parental psychopathology (particularly maternal depression) increase the risk that children will develop major behavioral and emotional problems (Coie, 1996; Loeber & Farrington, 1998; Sanders et al., 2003).

Among all developed parenting programs, the Behavioral Family Interventions (BFI) based on Patterson's (1982) social learning theory have the strongest empirical evidence. BFI are interventions that target family interaction patterns. Parents learn

positive family interactions and child management skills. In a meta-analysis BFI programs have shown to be effective by creating large effect sizes in decreasing child behavior problems (Serketich & Dumas, 1996).

1.4 The Triple P – Positive Parenting Program

Triple P is a behavioral family intervention and aims to enhance family protective factors and reduce those risk factors known to be associated with severe behavioral and emotional problems on the part of preadolescent children. This is done by increasing the knowledge, skills, and confidence of the parents. The program was developed by Sanders and colleagues at the Parenting and Family Support Center of the School of Psychology at the University of Queensland (Sanders, Markie-Dadds, Tully, & Bor, 2000; Sanders, 2003).

1.5 Theoretical basis

Triple P is based on several theoretical foundations. First, the Triple P-program is based on social learning models of parent-child interaction that highlight the reciprocal and bidirectional nature of these interactions (e.g., Patterson, 1982). Second, the program is based on research in child and family behavior therapy, which has developed many useful behavior change strategies, particularly research that focuses on rearranging antecedents of problem behavior through designing more positive engaging environments for children (Risley, Clarke, & Cataldo, 1976). Third, in the developmental research on parenting in everyday contexts, Triple P teaches parents to use naturally occurring daily interactions to teach children language, social skills, developmental competences and problem-solving skills in an emotionally supportive context. Fourth, social information processing models are incorporated that highlight the important role of parental cognitions, such as attributions, expectancies and beliefs as factors that contribute to parental self-efficacy, decision-making and behavioral intentions (e.g., Bandura, 1977, 1995). Fifth, research from the field of developmental psychopathology that has identified specific risk and protective factors that are linked to adverse developmental outcomes in children is represented (e.g., Emery, 1982; Grych & Fincham, 1990; Hart & Risley, 1995; Rutter, 1985). Sixth, a population health perspective to family intervention that involves the explicit recognition of the role of the broader ecological context for human development (e.g., Biglan, 1995; Mrazek & Haggerty, 1994).

A central element in the program is the development of parents' capacity for self-regulation, which involves teaching skills to parents that enable them to become independent problem solvers. Self-regulation is a process whereby individuals are taught skills to modify their own behavior (Sanders, 2003).

1.6 Principle of self-regulation

Self-regulation is a central element in the Triple P program and it is suitable for both parents and professionals. Self-regulation is a process whereby individuals are taught skills to modify their own behavior. The self-regulation framework means:

1. Self-sufficiency: parents need to become independent problem solvers so that they trust their own judgment and become less dependent on others in carrying out basic parenting responsibilities.
2. Parental self-efficacy: This refers to a parent's belief that they can overcome or solve a parenting or child management problem.
3. Self-management: The tools or skills that parents use to become more self-sufficient include self-monitoring, self-determination of performance goals and standards, self-evaluation against some performance criterion, and self-selection of change strategies. As each parent is responsible for the way they choose to raise their children, parents select which aspects of their own and their child's behavior they wish to work on, set goals for themselves, choose specific parenting and child management techniques they wish to implement, and self-evaluate their success with their chosen goals against self-determined criteria.
4. Personal agency: Here the parents increasingly attribute changes or improvements in their situation to their own or their child's efforts rather than to chance, age, maturational factors or other uncontrollable events (e.g., partner's bad parenting or genes). This outcome is achieved by prompting parents to identify potentially modifiable causes or explanations for their child's or their own behavior. (The interested reader can read more in: Sanders, Markie-Dadds, & Turner, 2003).

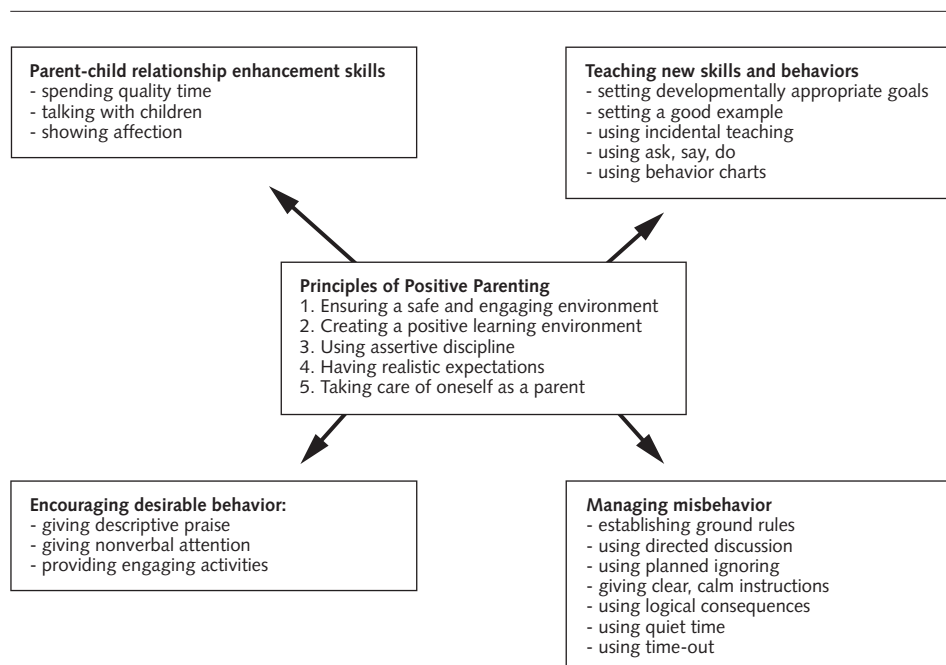
1.7 Principles of Positive Parenting

Five core positive parenting principles form the basis of the program. These principles address specific risk and protective factors known to predict positive developmental and mental health outcomes in children (Sanders, Markie-Dadds, & Turner, 2003):

1. Ensuring a safe and engaging environment:
Children of all ages need a safe, supervised and therefore protective environment that provides opportunities for them to explore, experiment and play.
2. Creating a positive learning environment:
This involves educating parents in their role as their child's first teacher. The program specifically targets how parents can respond positively and constructively to child-initiated interactions (e.g., requests for help, information, advice, attention) through incidental teaching to assist children to learn to solve problems for themselves.
3. Using assertive discipline:
Specific child management strategies are taught that are alternatives to coercive and ineffective discipline practices (such as shouting, threatening or using physical

- punishment). A range of behavior change procedures are demonstrated to parents including: selecting ground rules for specific situations; discussing rules with children; giving clear, calm, age appropriate instructions and requests; logical consequences; quiet time (non-exclusionary time out); time out; and planned ignoring.
4. Having realistic expectations:
This involves exploring with parents their expectations, assumptions and beliefs about the causes of children's behavior, and choosing goals that are developmentally appropriate for the child and realistic for the parent. There is evidence that parents who are at risk of abusing their children are more likely to have unrealistic expectations of children's capabilities (Azar & Rohrbeck, 1986).
5. Taking care of oneself as a parent:
Parenting is affected by a range of factors that impact on a parent's self-esteem and sense of well-being. All levels of Triple P specifically address this issue by encouraging parents to view parenting as part of a larger context of personal self-care, resourcefulness and well-being, and by teaching parents practical parenting skills that all carers of a child are able to implement. Those core principles are translated into a range of specific parenting skills, which are presented in Figure 1. (The interested reader can read more in: Sanders, Markie-Dadds, & Turner, 2003).

Figure 1. Principles and parenting strategies



The interventions

Triple P incorporates five levels of intervention of increasing intensity for parents of children between the ages of 0 and 16 (see Table 1).

Table 1. The Triple P Model of Parenting and Family Support

Level of Intervention	Target Population	Intervention Methods	Practitioners
LEVEL 1 Media-based parent information campaign Universal Triple P	All parents interested in information about promoting their child's development	Anticipatory well child care involving the provision of brief information on how to solve developmental and minor behavior problems. May involve self-directed resources, brief consultation, group presentations, mass media strategies, and telephone referral services	Media parent support institutions and/or health promotion
LEVEL 2 Brief selective intervention Selected Triple P	Parents with a specific concern/s about their child's behavior or development	Provision of specific advice for a discrete child problem behavior. May be self-directed or involve telephone or face-to-face clinician contact or group sessions	Parent support during routine well-youth health care (e.g., child and community health, education, allied health and childcare staff)
LEVEL 3 Narrow focus parent training Primary Care Triple P	Parents with a specific concern/s about their child's behavior or development who require consultations or active skills training	Brief therapy program (1 to 4 clinic sessions) combining advice, rehearsal and self-evaluation to teach parents to manage a discrete child problem behavior. May involve telephone or face-to-face clinician contact or group sessions	As for Level 2
LEVEL 4 Broad focus parent training Standard Triple P Group Triple P Self-Directed Triple P	Parents wanting intensive training in positive parenting skills - typically parents of children with more severe behavior problems	Intensive program focusing on parent-child interaction and the application of parenting skills to a broad range of target behaviors. Includes generalization enhancement strategies. May be self-directed or involve telephone or face-to-face clinician contact or group sessions	Intensive parenting interventions (e.g., mental health and youth care and other allied health professionals who regularly consult with parents about child behavior)
LEVEL 5 Behavioral family intervention modules Enhanced Triple P	Parents of children with concurrent child behavior problems and family dysfunction such as parental depression or stress or conflict between partners	Intensive individually tailored program with modules including home visits to enhance parenting skills, mood management strategies and stress coping skills, and partner support skills. May involve telephone or face-to-face clinician contact or group sessions	Intensive family intervention work (e.g., mental health, youth care)

Level 1, an universal parent information strategy, provides all interested parents with access to useful information about parenting through a coordinated promotional campaign using print and electronic media that demonstrate specific parenting strategies. This level of intervention aims to increase community awareness of parenting resources and parents' receptivity to participate in programs, and to create a sense of optimism by depicting solutions to common behavioral and developmental concerns. Level 2 is a brief, one to two-session primary health care intervention, providing early anticipatory developmental guidance to parents of children with mild behavior difficulties or developmental issues.

Level 3, a four-session intervention, targets children with mild to moderate behavior difficulties and includes active skills training for parents.

Level 4 is an intensive eight to ten-session individual, group or self-directed parent training program for children with more severe behavioral difficulties.

Level 5 is an enhanced behavioral family intervention program for families where child behavior problems persist or where parenting difficulties are complicated by other sources of family distress (e.g., marital conflict, parental depression or high levels of stress) (Sanders, 2003).

The program is in continuous revision by new data, theory or feedback from program users and consumers (Sanders & Turner, 2005). Besides the core-program with the five levels of intervention, extra modules are being developed for specific target groups, such as parents of children with a developmental problem or disability (*Stepping Stones*), families who are at risk for child abuse, (*Pathways Triple P*), working parents (*Workplace Triple P*), aboriginal parents in Australia, (*Indigenous Triple P*), parents of children with obesity (*Lifestyle Triple P*), and divorced children or new families (*Transitions Triple P*).

1.8 Implementation trial

In 2006 an implementation trial of the Triple P – Positive Parenting Program was conducted in the Netherlands. In a one-year period interventions of different levels of the Triple P program were implemented in two regions in the Netherlands: universal Triple P, concerning a small local campaign (level 1), selected Triple P (level 2), Primary Care Triple P (level 3) and Standard and Group Triple P (level 4). The objective of the implementation- trial was to implement those interventions in two pilot regions, and to prepare a scenario for a broad implementation. Several institutions were involved in the implementation trial: youth health care, social work, school social work (school counsellors), parenting centers, day care, youth care and mental health care. The target population consists of parents of children aged 2 to 12 years.

1.9 Outline of the thesis

In chapter 1 and 2 we want to know whether the Triple P- Positive Parenting Program is effective. The research questions “What are the effects of Triple P on parenting?”, and “Is Triple P effective on behavior problems in children?” are discussed. In meta-analyses the results of a large and diverse body of studies can be summarized. Because most of the studies on Triple P are on level 4 Triple P interventions, the meta-analyses we conducted focus on this level. In chapter 1 the focus is on the effectiveness on parenting. Chapter 2 contains the effectiveness on behavior problems in children. The next chapters address the studies to evaluate the implementation trial in the Netherlands. Chapter 3 focuses on the research question: Is Primary Care Triple P an addition to the primary care parenting support in the Netherlands? We present the results from a quasi-experimental study of the Primary Care Triple P (level 3) and the regular primary care Dutch parenting consultations on the effects on children's behavior and emotional problems, parenting styles and parental competences. Chapter 4 deals with the results of four evaluations of the Standard and Group Triple P to evaluate the effects on parenting behavior and problem child behavior. The research question “What is the impact of Group and Standard Triple P on children's behavior, parenting and parental psychopathology in the Dutch practice?” will be discussed. Those four samples were: two single-group, pretest, posttest, one single-group, pretest-posttest-follow-up test, and one quasi-experimental design. Furthermore, this study focuses on the impact of the Standard and Group Triple P interventions on parental distress and psychological health of parents, and the mediating factors of parenting interventions on parental psychopathology. In the fifth chapter, we describe the successful implementation strategy using a practical framework for implementing evidence-based multilevel programs. Furthermore, we also evaluated the implementation trial by a process evaluation. This chapter leads up to the general discussion in chapter 6.

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2 What are the effects of Triple P on parenting?*

Abstract

Triple P is a parenting program intended to prevent and to provide treatment for severe behavioral, emotional, and developmental problems in children. The aim of this meta-analysis was to assess the effectiveness of Triple P Level 4 interventions on parenting styles and parental competency. Level 4 is an intensive training program of 8 – 10 sessions for parents of children with more severe behavioral difficulties. The results indicated that the Triple P Level 4 interventions reduced dysfunctional parenting styles in parents and also improved parental competency. These effects were maintained well through time and appear to support the widespread adoption and implementation of Triple P Level 4 interventions that is taking place in an increasing number of countries around the world.

2.1 Introduction

Family processes have a great influence on children's psychological, physical, social, and economic welfare. Many significant mental health, social, and economic problems are linked to disturbances in family functioning (Chamberlain & Patterson, 1995; Patterson, 1982; Sanders, Markie-Dadds, & Turner, 2003), and epidemiological studies have indicated that poor parenting strongly influences how children develop (e.g., Cummings & Davies, 1994; Dryfoos, 1990). The lack of a warm positive relationship with parents; insecure attachment; harsh, inflexible, rigid, or inconsistent discipline practices; and inadequate supervision of and involvement with children are specific factors that increase the risk that children will develop major behavioral and emotional problems, including substance abuse, antisocial behavior, and juvenile crime (e.g., Loeber & Farrington, 1998; Sanders et al., 2003); this implies that the strengthening of parenting competences and improvements in dysfunctional parenting styles should have a positive impact on child well-being and lead to a decrease in their behavioral problems. Behavioral family interventions (BFI) that are based on social learning principles are the most extensively evaluated form of psychosocial intervention for children and are effective in reducing family risk factors associated with child behavior problems (Kazdin, 1991; Patterson, Reid, & Dishion, 1992; Webster-Stratton & Hammond, 1997). In fact, studies demonstrating the efficacy of parenting interventions have shown improvements in parental perceptions and parenting skills, improve-

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ments in children's social skills and school adjustment, and reductions in behavioral and attention problems (Barlow & Stewart-Brown, 2000; Taylor & Biglan, 1998). One widely used parenting intervention is the Triple P—Positive Parenting Program, which aims to equip parents more effectively for their child-rearing role. The purpose of the present study was to provide a meta-analytic review of the research literature on the effectiveness of one level of intervention of the Triple P parenting program in improving parenting styles and parents' competences.

2.2 The Triple P Positive Parenting Program

Triple P, which designates a "positive parenting program," is a multilevel program designed to prevent and offer treatment for severe behavioral, emotional, and developmental problems in children from birth to the age of 16 years, by means of enhancing the knowledge, skills, and confidence of their parents. The program was developed by Sanders and colleagues at the Parenting and Family Support Center of the School of Psychology at the University of Queensland (Sanders, Markie-Dadds, Tully, & Bor, 2000). Triple P incorporates five levels of interventions on a continuum of increasing intensity of behavioral and emotional problems in children. Level 1 is a form of universal prevention that delivers psycho educational information on parenting skills to interested parents. Level 2 is a brief intervention consisting of one or two sessions for parents of children with mild behavioral problems. Level 3 is a four session intervention that targets children with mild to moderate behavioral difficulties and includes active skills training for parents. Level 4 is described below. Level 5, finally, is an enhanced BFI program for families where parenting difficulties are complicated by other sources of family distress (Sanders et al., 2003).

Theoretical Basis of Triple P

Triple P aims to enhance family protective factors and reduce risk factors associated with severe behavioral and emotional problems in children and adolescents by using social learning models of parent-child interaction that highlight the reciprocal and bidirectional nature of these interactions (e.g., Patterson, 1982) and identify learning mechanisms that maintain coercive and dysfunctional antisocial behavior in children (Patterson et al., 1992). As a result, the program teaches positive child management skills to parents as an alternative to coercive, inadequate, or ineffective parenting practices. These dysfunctional parenting styles were the focus of our interest in conducting this meta-analysis. According to these models, effective parents monitor their child's behavior; recognize deviant acts; and consistently use rewards, punishment, and positive role model behaviors (Patterson, 1982, 1992). This approach to the treatment and prevention of childhood disorders has the strongest empirical support of any intervention with children, particularly those with conduct problems (Kazdin, 1987; Taylor & Biglan, 1998; Webster-Stratton & Hammond, 1997). Triple P is a form of BFI, which has clearly been shown to be beneficial in children with disrup-

tive behavior disorders (Forehand & Long, 1988). Furthermore, the Triple P program is based on research in child and family behavior therapy that has developed many useful behavior change strategies, particularly research that focuses on rearranging antecedents of problem behavior by designing more positive, engaging environments for children (Risley, Clark, & Cataldo, 1976). Congruent with the developmental research on parenting in everyday contexts, Triple P teaches parents to use naturally occurring daily interactions to teach children language, social skills, developmental competences, and problem-solving skills in an emotionally supportive context. The important role of parental cognitions, such as attributions, expectancies, and beliefs as factors that contribute to parental self-efficacy, decisionmaking, and behavioral intentions, is highlighted by social information processing models (e.g., Bandura, 1977, 1995). A central element in the program is the development of parents' capacity for self-regulation, which involves teaching skills to parents that enable them to become independent problem solvers. Self-regulation is a process whereby individuals are taught skills to modify their own behavior (Sanders et al., 2003). In this study, we were interested in parental self-efficacy, which is part of the self-regulatory framework.

Characteristics of Triple P

Our focus here was on Level 4 interventions because most of the relevant Triple P studies have encompassed this particular level of the Triple P system. The Level 4 intervention can be considered the core intervention of Triple P. Research into this system of BFI began with research into Level 4 interventions, which target individual parents of children at risk, or an entire population, in order to identify individual children at risk. Parents are taught a variety of child management skills, including providing brief, contingent attention following desirable behavior; how to arrange engaging activities in high-risk situations; and how to use clear calm instructions, logical consequences for misbehavior, planned ignoring, quiet time (non exclusionary time-out), and time-out (Sanders et al., 2003). The Level 4 interventions in Triple P can be delivered in a variety of formats, including individual face-to-face, group, telephone-assisted, self-directed programs or a combination of these. Standard Triple P is a face-to-face 10-session program for parents and incorporates sessions dealing with the causes of children's behavior problems, strategies for encouraging children's development, and strategies for managing misbehavior; sessions last up to 90 min each. Group Triple P is an eight-session program ideally conducted in groups of 10 – 12 parents, which is appropriate as a universal (available to all parents) or selective (available to targeted groups of parents) preventive parenting support strategy. The program consists of four 2-hour group sessions, which provide opportunities for parents to learn through observation, discussion, practice, and feedback. Self-Directed Triple P is ideal for families where access to clinical services is poor and consists of a 10-week Self-Help program for parents, which may be augmented by weekly 15- to 30-min telephone consultations.

Previous Evaluations of the Triple P Program

The intervention methods of Triple P have been subjected since 1978 to a series of controlled evaluations using both intrasubject replication designs and traditional randomized control group designs, and there is evidence that Triple P is an effective parenting strategy (Sanders et al., 2003). Several studies have shown that the parenting skills training used in Triple P produced a predictable decline in child behavior problems and that this decline was generally maintained through time (Sanders et al., 2003). Furthermore, clinically meaningful and statistically reliable outcomes for both children and their parents have been demonstrated for the standard, self-directed, telephone-assisted group, and enhanced interventions. The program has also been successfully used for several different family types, including two-parent families, single parents, stepfamilies, maternally depressed families, and maritally discordant families (Sanders et al., 2003).

Hypotheses

We hypothesized in these meta-analyses that dysfunctional parenting styles would improve and that parents' competences would increase after participating in Triple P Level 4 intervention—measured directly after the intervention and at the follow-up 3 – 12 months later. The second hypothesis was that the efficacy of Triple P depended on whether the intervention was delivered to individual parents or groups or in a Self-Help format. Program modality might, in fact, have had an impact on the effects of parenting because of the difference in the intensity of the intervention (self-help vs. face to face) or the degree of personal attention from the therapist (individual or group). Third, we hypothesized that the Triple P Level 4 intervention was more effective for parents of children with higher scores on behavior problems because of the greater responsiveness of severely distressed parents who are coping with difficulties in managing children. One study (Chamberlain et al., 2007) found that specific parenting practices mediated reductions in child behavior problems, especially when high-risk children were involved. The effects on parenting were most evident in families where children had relatively high levels of initial behavior problems. Our hypothesis, as a consequence, was that the Triple P Level 4 intervention was more effective in children with higher initial scores on behavior problems, which led to the further hypothesis that Triple P was more effective when the interventions were given to parents of young children (age 2 – 4) and to parents of boys. The reason for this was that empirical studies have shown that physically aggressive behavior occurs in children of 1 year old, increases in the second life year, and then tends to decline from the third birthday onward (Alink et al., 2006; Tremblay et al., 2004); furthermore, it is also evident that boys exhibit more externalizing problems than girls at the age of 2 and 3 years (Alink et al., 2006). We conducted two meta-analyses. The first meta-analysis assessed the effectiveness of Triple P on parenting styles or competences of parents in the experimental group compared with the control group, as measured immediately at the end of the intervention. The second meta-analysis assessed the degree to which postintervention effects were maintained through time in the intervention group.

2.3 Meta-Analysis of Level 4 Interventions

Pertinent Studies

In this meta-analysis, we examined the effectiveness of Triple P interventions on parenting by pooling the evidence from the pertinent studies. The greater number of participants in a meta-analysis means that the results of a large and diverse body of studies can be summarized, interpreted, and more readily generalized to an entire population (Rosnow & Rosenthal, 2002). This present meta-analysis also calculated an overall effect size for Level 4 Triple P interventions worldwide. It was decided to restrict the meta-analysis exclusively to Level 4 of the Triple P system because most of the relevant Triple P studies that had been identified related to Level 4 because of the fact that initial research focused on this core intervention of Triple P. An important reason for conducting a meta-analysis was to summarize research findings in order to process information from a large number of study findings, and we analyzed the Level 4 intervention as a consequence. Furthermore, the set of findings included in a meta-analysis must result from comparable interventions. Table 1 summarizes the studies included in this analysis.

Inclusion Criteria

We used three different search methods to identify literature for the meta-analysis. First of all, we searched for literature in two electronic databases, Medline 1975 – February 2006 and Psychinfo 1975 – February 2006. The keywords used were “Triple P” and “parent,” so that words like parenting or parental were also included in the search. Second, we searched all reference lists of studies compiled by the Parenting and Family Support Centre at the University of Queensland in Australia. Third, we asked researchers who had conducted Triple P studies whether they had other relevant unpublished material. Studies had to meet the following inclusion criteria: (a) the study had to have examined the effects on a Triple P Level 4 intervention, which is an intensive parent training program for parents who have children with more severe behavioral difficulties; (b) the effectiveness of Triple P had to have been assessed using a questionnaire for the parents to evaluate parenting styles and parental competences; and (c) sufficient empirical data had to have been reported to enable the calculation of standardized effect sizes. Because we conducted two meta-analyses, studies had to have reported posttest data on the intervention group and on the control group for the purposes of the first meta-analysis and predate and follow-up data had to be reported separately for the intervention group for the purposes of the second meta-analysis.

Selected Studies

We found 48 effect studies in which all levels of Triple P were used and 25 studies that focused on the Level 4 intervention. Nineteen studies met the inclusion criteria; three studies were excluded from the first meta-analysis because they had no control group, and three other studies were excluded because they had not examined the

effects on a Triple P Level 4 intervention. The studies were independently coded by two researchers on design and sample characteristics, delivery format of the Level 4 intervention of Triple P, reliability and validity of the measures, characteristics of the parents and children, the children's initial problems, and the length of follow-up times. Differences in the coding by the two researchers were resolved by recalculation and consensus. Selected characteristics of these 19 studies are included in Table 1.

Sample Characteristics

Group Triple P was used as the intervention in 10 studies, Standard Triple P in four studies, and Self-Directed Triple P in five studies. One study (Sanders et al., 2000) compared two versions of Triple P, the Self-Directed intervention and the Standard Triple intervention, with a wait-list control group, and we analyzed both interventions in the case of this study. Working parents were the target group of the intervention in one study, 18 studies were randomized clinical trials, and one study was a nonrandom, two-group, concurrent, prospective, observation design (Zubrick et al., 2005). The Triple P Level 4 interventions, Standard, Group, or Self-Directed interventions can be offered differently. The interventions sometimes targeted parents of high-risk children, and the intervention was subject to strict entry criteria. In other cases, however, Group Level 4 was administered as a universal program targeting a high-risk area or a geographical catchment area rather than to parents of high-risk children themselves, with the consequence that samples were often a mixture of parents of high-risk and low-risk children. This meta-analysis also included five studies in which parents rated their children as being within the clinical range on the Eyberg Child Behavior Checklist (ECBI; Eyberg & Ross, 1978), and one study involving parents of children with attention deficit hyperactivity disorder diagnosed by a pediatrician or mental health professional. The clinical cutoff score for the ECBI Intensity Scale was 127 and was 11 for the ECBI Problem Scale (Eyberg & Ross). In the remaining 13 studies, children were not rated as being in the clinical range of behavior problems; the children in two of these studies had a developmental disability, the parents in eight studies reported concerns about their child's behavior, and the targeted populations in three studies were all the families in a high-risk area. It should be noted in this context that self-regulation is an important concept in Triple P, which means that parents play an important role in deciding the level of intervention they wish to participate in and no rigid inclusion or exclusion criteria are applied. In 10 of the studies selected for this meta-analysis, parents reported their child's behavior as being in the clinically elevated range at preassessment; in nine of the studies, the children's behavior was reported as being in the nonclinical range. Children were in the clinical range at pretest in one universally offered intervention, which was a study among indigenous people (Turner, Richards, & Sanders, 2007). Higher problem scores in children at preassessment probably result in a higher positive change in behavioral problems at postassessment. One study was conducted in Germany, one in Hong Kong, and one in Switzerland; 16 studies were conducted in Australia. The percentage of boys was 68.3% averaged across all studies, and we divided the

studies into those with less than 68.3% boys and those with more than 68.3% boys, in order to have two comparable groups. Boys were overrepresented in all studies, and the studies would have been heterogeneous if we had divided the groups into 50% boys and 50% girls. The children were younger than 4 years old in six studies. A total of 17 studies that were based on the Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993) and eight studies that were based on the Parenting Sense Of Competence Scale (PSOC; Gibaud-Wallston & Wandersman, 1978) were selected for the meta-analyses; both measurements were used in eight studies. Seventeen studies that were based on the PS were selected for the first meta-analysis and nine studies that were based on the PSOC. Sixteen PS-based studies were selected for the second meta-analysis and eight PSOC-based studies. Follow-up data were presented in 17 studies, and follow-up measurements were taken at both 6 and 12 months in one study (Bodenmann, Cina, Ledermann, & Sanders, 2008).

Sample Size

The size of the samples used for experimental and control groups varied widely between 9 and 774 in the 19 studies reviewed. Of the 43 samples reported (i.e., 24 experimental groups, 19 control groups), 61% of them can be categorized as being relatively small in size (e.g., $n = 1 - 29$), 16% as being moderate in size (e.g., $n = 30 - 59$), and the remaining 23% as being large in size (e.g., $n = 60 - 774$). These numbers are the reported sample sizes, when the studies began. The percentage of dropout at postmeasurement or follow-up time was 5 – 44%.

Measurement of Outcomes

The PS or the PSOC was used to assess the parenting styles and competences of the parents. The PS is a 30-item measure of parental perceptions of dysfunctional discipline styles in parents, which yields a total score that is based on three factors: laxness, overreactivity, and verbosity. The items on laxness describe ways in which parents give in, allow rules to go unenforced, or provide positive consequences for misbehavior; the items on overreactivity reflect parental mistakes such as displays of anger, meanness, and irritability; the items on verbosity reflect lengthy verbal responses and a reliance on talking, even when talking is ineffective. Statements were rated on 7-point Likert scales, with higher scores indicating higher levels of parental dysfunction. The scale had adequate internal consistency for the total score ($\alpha = .84$), laxness ($\alpha = .83$), overreactivity ($\alpha = .82$), and verbosity ($\alpha = .63$) scales and had good test-retest reliability ($r = .84, .83, .82$, and $.79$, respectively; Arnold et al., 1993). The PSOC is a 16-item questionnaire used to assess parents' views of their competence as parents on two dimensions: (a) satisfaction with their parenting role, which reflects the extent of parental frustration, anxiety, and motivation and (b) feelings of efficacy as a parent, which reflect competence, problem-solving ability, and capability in the parenting role. Parents are asked to respond to a series of statements about parenting

Table 1. Selected Characteristics of Studies examining the Effects of Triple P level 4 intervention on Parenting Styles and Parents' Competency

Study	Conditions: N	Target population	Measurement	
Bodenmann et al. (2008)	Group: 51; No Treatment: 41; Couples Coping Enhancement Tr.: -	Universally offered sample in rural areas; parents reported beh. pr. in their children; Switzerland	Pre-Post; 6 months - 12 months; PS - PSOC	
Connell, Sanders and Markie-Dadds (1997)	Self-Directed: 12; Waitlist: 11	Children rated in the clinical range on the ECBI; Australia	Pre-Post; 4 months PS - PSOC	
Gallart and Matthey (2005)	Group: 33; Waitlist: 16	Universally offered sample; parents reported beh. pr. in their children; Australia	Pre-Post; PS	
Heinrichs et al. (2005)	Group: 129; Waitlist: 94	Universally offered sample, all families in childcare in catchment area; Germany	Pre-Post; 12 months; PS	
Hoath and Sanders (2002)	Group: 9; Waitlist: 11	Families with a child with a clinical diagnosis of attention deficit hyperactivity disorder; Australia	Pre-Post; 3 months; PS	
Ireland, Sanders, and Markie-Dadds (2003)	Group: 16; Enhanced Group: 16	Universally offered sample, parents reported beh. pr. in their children; Australia	Pre-Post; 3 months; PS	
Leung, Sanders, Leung, Mak and Lau (2003)	Group: 33; Waitlist: 36	Universally offered sample; parents reported beh. pr. in their children; Hong Kong	Pre-Post; PS – PSOC	
Markie-Dadds and Sanders (2006a)	Self-Directed: 21; Waitlist: 22	Children rated in the clinical range on the ECBI: Australia	Pre-Post; 6 months; PS – PSOC	
Markie-Dadds, and Sanders (2006b)	Self-Directed: 28; Waitlist: 12	Children rated in the clinical range on the ECBI: Australia	Pre-Post; 6 months; PS – PSOC	
McTaggart et al., 2005	Group: 79; Waitlist: 244	Universally offered sample, all families living in a high-risk area; Australia	Pre-Post; 6 months; PS – PSOC	
Morawska and Sanders (2006)	Self-Directed: 73; Waitlist: 37	Universally offered sample; parents reported beh. pr. in their children; Australia	Pre-Post; 6 months; PS	

	% DO	Age Child (M)	% boys	Child beh. pr.
	12 at FU	6.60 (<i>SD</i> = 2.83)	55	Nonclinical
	-	4.27 (<i>SD</i> = 1.05)	43	Clinical
	-	5.40 (<i>SD</i> = 1.5)	75	Nonclinical
	-	4.00 (<i>SD</i> = 0.98)	54	Nonclinical
	5 at post; 23 at FU	7.70 (<i>SD</i> = 1.33)	-	Clinical
	28 at FU	3.53 (<i>SD</i> = 1.12)	58	Nonclinical
	24 at post	4.23 (<i>SD</i> = 1.06)	64	Clinical
	-	3.59 (<i>SD</i> = 0.76)	64	Clinical
	0 at post; 4 at FU	3.89 (<i>SD</i> = 0,96)	64	Clinical
	14 at post	-	57	Nonclinical
	11 at post	2.18 (<i>SD</i> = 0.42)	51	Nonclinical

Study	Conditions: N	Target population	Measurement	
Plant and Sanders, (2007)	Stepping Stones: 24; Stepping Stones: -; Enhanced: 26; Waitlist: 24	Parents of children with diagnosed developmental disability; Australia	Pre-Post; 12 months; PS – PSOC	
Roberts, Mazzucchelli, Studman, and Sanders (2006)	Stepping Stones: 17; Waitlist: 15	Parents of children with a diagnosed developmental disability: Australia	Pre-Post; 6 months; PS	
Sanders et al. (2000) ^a	Standard: 65; Self-Directed: 61; Enhanced: 58; Waitlist: 71	Children rated in the clinical range on the ECBI: Australia	Pre-Post; 12 months; PS - PSOC	
Sanders and McFarland (2000)	Behavioral Family Intervention: 24; Cognitive Behavioral Intervention: 23	Children rated in the clinical range on the ECBI, mothers with major depression: Australia	Pre-Post; 6 months; PSOC	
Stallman. Ralph, and Sanders (2005)	Self-Directed + Tel.: 17; Self-Directed: 18; Waitlist: 16	Universally offered sample; parents reported beh. pr. in their children: Australia	Pre-Post; 3 months; PS	
Turner et al. (2007)	Group: 18; Waitlist: 18	Universally offered sample of indigenous families; parents reported beh. pr. in their children; Australia	Pre-Post; 6 months; PS	
Yuki, Matsumoto, sofronoff, and Sanders (2007)	Group: 23; Waitlist: 25	Universally offered sample; Japanese parents reported beh. pr. in their children; Australia	Pre-Post; 3 months; PS	
Zubrick et al. (2005)	Group: 691; Control region: 774	Universally offered sample, all families in high-risk area; Australia	Pre-Post; 12 months - 24 months; PS	

ECBI = Eyberg Child Behavior Checklist; Age Child (M) = average age; beh.pr. = behavior problems;

DO = percentage of drop-out; FU = Follow Up; PS = Parenting Scale; PSOC = Parenting Sense of

Competency Scale; ^a analyses were conducted for both Standard Triple P and Self-Help Triple P in this study.

by indicating their agreement or disagreement and each item is measured on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The total score (16 items), Satisfaction factor (nine items), and Efficacy factor (seven items) showed a satisfactory level of internal consistency ($\alpha = .79, .75$, and $.76$ respectively; Johnston & Mash, 1989).

	% DO	Age Child (M)	% boys	Child beh. pr.
	0 at post; 5.5 at FU	4.56 (<i>SD</i> = 1.13)	76	Clinical
	33 at post; 44 at FU	4.30 (<i>SD</i> = 1)	57	Clinical
	14 at post	3.40 (<i>SD</i> = 0.30)	68	Clinical
	21 at post	4.39 (<i>SD</i> not reported)	74	Clinical
	11.8 at post; 23.5 at FU	12.3 0 (<i>SD</i> = 0.54)	59	Nonclinical
	22 at post; 26 at FU	5.72 (<i>SD</i> = 3.19)	67	Clinical
	0 at post; 4 at FU	4.90 (<i>SD</i> not reported)	54	Nonclinical
	12 at post; 13 at 12 months; 21 at 24 months	3.73 (<i>SD</i> = 1.17)	57	Nonclinical

Methodological Analysis

An effect size (i.e., the standardized difference between the means of two groups; Cohen's *d*) was calculated for each study. In the first meta-analysis, we were interested in the differences between mean scores in the experimental group and in the control group at postmeasurement. The standardized effect size, *d*, was calculated as, where M_E and M_C were the means of the experimental and control groups at postintervention and postmeasurement, respectively, and SD_C was the standard deviation of the control group. These standardized effect sizes, *d*, indicated how many

standard units (z scores) the experimental group had progressed at postmeasurement as compared with the control group. In the second meta-analysis, we also calculated the standardized mean difference as $d = (M_p - M_F) / SD_p$, where M_p and M_F were the means of the experimental group at baseline and follow-up, respectively, and SD_p was the standard deviation at baseline of the experimental group. This in-group effect size thus indicated the number of standard units by which the recipients of the intervention had improved over time relative to their own baseline scores and can be interpreted, therefore, as a standardized health gain score. For example, an effect size of $d = 0.5$ indicated that the mean of the experimental group at follow-up assessment was half a standard deviation larger than the mean of the experimental group at baseline. The study by Zubrick et al (2005) was not a randomized clinical trial and so we calculated the standardized pre-post change score for the experimental group (d_E) and did the same for the control group (d_C). We subsequently calculated the difference using the following formula: $\Delta(d) = d_E - d_C$.

The meta-analyses were conducted using Meta-Analysis, version 5.3 (Schwarzer, 1989), which is based on the statistical techniques outlined by Hedges and Olkin (1985); the results are shown in Tables 2 and 3. An effect size in the range of $d = 0.56 - 1.2$ may be interpreted as a large effect from a clinical perspective, whereas effect sizes of $0.33 - 0.55$ are moderate and effect sizes of $0.00 - 0.32$ are considered small (Lipsey & Wilson, 1993). We also conducted the Q test for homogeneity, in order to ascertain whether the various effect sizes that were averaged into the pooled d values all estimated the same population effect size (Rosenthal & Rubin, 1982), followed by an outlier analysis whenever the Q test for homogeneity was significant. In order to identify outliers, we conducted cluster analyses (Schwarzer), conducted another meta-analysis without the outlier, and then ascertained whether we had obtained a more homogeneous set of primary studies in which the Q test was no longer significant. We also formed subgroups on the basis of the characteristics of the intervention. This was done in order to ascertain whether a Self-Help version of Triple P was inferior (or superior) to a therapist-assisted version. This contrast was considered to be statistically significant when the 95% confidence intervals (CI) of the respective effect sizes d were not overlapping.

2.4 Results on Parenting Styles and Parental Competences

Parenting styles. The overall mean effect size for the 17 studies of parenting styles was 0.68 at postmeasurement, with a 95% CI of 0.48 – 0.87 (Table 2), which is a large effect according to Cohen's criteria and is statistically significant ($Z = 6.73$, $p < .001$). However, the Q test for the hypothesis of homogeneity across effect sizes had to be rejected, indicating that there was a substantial amount of unexplained variance in the total set of studies that might be attributable to the systematic effects of covariates. Random sample error caused 48.9% of the variance, leaving 51.1% remaining, which may have systematically covaried with (unknown) covariates. The

number of studies with a zero effect that would have to be found in order to reduce the effect size to 0.20 was 40.5.

The overall mean effect size relating to the longterm measurement of parenting styles was $d = 0.80$, with a 95% CI of $0.51 - 1.10$, which is a large and statistically significant effect ($Z = 5.40$, $p < .001$). Again, the Q test for the hypothesis of homogeneity across effect sizes had to be rejected, random sample error having caused 33.6% of the variance. The number of studies with a zero effect that would have to be found in order to reduce the effect size to 0.20 is 51.4.

An outlier analysis was conducted for the set of 17 PS-based studies in which a pre-post design was adopted and four clusters were found at a 5% confidence level. When the question of why four studies in three clusters differed from the other 13 studies was examined, very large effect sizes were found in two studies, the third study was the first study of Self-Help Triple P, and the fourth study was a mixture of Standard and Enhanced Stepping Stones, which is an adaptation of Triple P for families of children with developmental disabilities. An analysis was made of one cluster that included five studies of Self-Help, seven of Group Triple P, and one study of Stepping Stones Triple P (13 studies). An overall mean effect size of 0.54 was found, which is a moderate effect (95% CI: $0.46 - 0.62$, $Z = 13.44$, $p < .001$); the Q test indicated that this was a homogeneous set of studies. The same outliers were also excluded from the follow-up meta-analysis, which found an overall mean effect size of 0.51, which is a moderate effect (95% CI: $0.43 - 0.59$, $Z = 12.55$, $p < .001$); again, the Q test indicated that this was a homogeneous set of studies. In summary, the moderate effect sizes for a homogeneous set of studies demonstrated that parenting styles of parents who followed a Level 4 intervention of Triple P had improved at postmeasurement and follow-up measurement.

Parental competences. The overall mean effect size for the eight studies of the parenting competences was 0.65 at postmeasurement with a CI of $0.36 - 0.94$ (Table 2), which is a large effect according to Cohen's criteria and statistically significant ($Z = 4.32$, $p < .001$). The Q test for the hypothesis of homogeneity across effect sizes had to be rejected, 41.85% of the variance having been caused by random sample error. The number of studies with a zero effect that would have to be found in order to reduce the effect size to 0.20 was 18.1. The overall mean effect size on long-term measurement of parenting competences was $d = 0.67$ with a 95% CI of $0.43 - 0.89$, which is a large and statistically significant effect ($Z = 5.76$, $p < .001$). The Q test indicated that this was a homogeneous set of studies. Follow-up at 6 months found an overall mean effect size of $d = 0.74$, but the result was significantly heterogeneous. A meta-analysis of the three studies with a 12-month follow-up discovered an overall mean effect size of $d = 0.58$, and the Q test indicated that this was a homogeneous set of studies. In summary, the findings for a homogenous set of studies indicated that Parental competences had improved at postassessment (moderate effects), had improved further at follow-up assessment (large effect), and had been maintained 1 year later (moderate effect).

Table 2: Results of meta-analyses examining the effects of the Triple P level 4 on the Parenting Scale (PS) and the Parenting Sense of Competency Scale (PSOC)

Effects at post-measurement	N_{ES}	N	D	95% CI	$Q (df)$	%SE	F/S-K
PS							
All studies	17	2.881	0.68	0.48-0.87	40.63 (16)**	48.9 %	40.5
Outliers excluded (nos. 2, 7, 13, 18, table 1)	13	2.712	0.54	0.46-0.62	12.79 (12)	100%	22
PSOC							
All studies	8	857	0.65	0.36-0.94	31.32 (7)***	41.85	18.1
Outliers excluded (nos. 8, 12, table 1)	6	460	0.57	0.38-0.77	7.76 (5)	100	11.2
Effects after 3 - 12 months							
PS							
All studies (3-12 months)	17	2.564	0.80	0.51-1.10	43.71 (16)**	33.6	51.4
All studies, outliers excluded (nos. 2, 13, 18, table 1)	14	2.480	0.51	0.43-0.59	12.09 (13)	100	21.9
4-6 months	12	652	0.96	0.57-1.35	26.57 (11)**	36.05	45.6
4-6 months outliers excluded (nos. 2, 13, 18, table 1)	9	568	0.67	0.50-0.84	2.18 (8)	100	21.3
Effects after 12 months	5	1.912	0.47	0.38-0.56	5.5 (4)	100%	6.7
PSOC							
All studies (3-12 months)	8	794	0.67	0.43-0.89	12.47 (7)	53.42%	18.7
6 months	5	398	0.74	0.38-1.10	10.77 (4)*	44.23%	13.5
12 months	3	396	0.58	0.38-0.79	1.36 (2)	100%	5.8

NE_S = Number of effect sizes; N = number of subjects in the studies; D = overall effect size; % SE = percentage of the variance accounted for by random sample error; Q = Homogeneity Q ; F/S-K = Orwin's Fail-safe N . * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Outlier analyses were also conducted for the PSOC-based studies. One study with a very large effect size was again excluded at postassessment, as was a study with a very low effect size. An overall effect size of 0.57 was found, which is a moderate effect (95% CI: 0.38 – 0.77, $Z = 5.84$, $p = .00$) and the Q test indicated that this was a homogeneous set of studies. We conducted several additional meta-analyses in order to examine whether effects were moderated by the age of the children (i.e., younger vs. older than 4 years), the gender of the children (more or less than

68.3% boys), self-directed versus practitioner-assisted intervention, and the behavior problems scores of the children on the ECBI, the Strengths and Difficulties Questionnaire, or the Child Behavior Checklist (scoring problems at pretest in clinical range vs. nonclinical range). The outliers were excluded once more by cluster analyses using the computer program (Schwarzer, 1989), and the results are summarized in Table 3. Studies with more than 68.3% boys were found to show significantly greater long-term effects on parenting styles and parental competency measured with the PSOC ($d = 0.50$; 95% CI 0.31 – 0.69 vs. $d = 1.20$; CI 0.76 – 1.63). None of the other moderator variables were significant.

Table 3: Results of meta-analyses of Triple P across modalities on the Parenting Scale (PS) and the Parenting Sense of Competency Scale (PSOC), at Follow-up Assessment

	<i>N_{ES}</i>	<i>N</i>	<i>D</i>	95% <i>CI</i>	<i>Q</i>	% <i>SE</i>	<i>F/S-K</i>
<i>Parenting Scale</i>							
Age < 4 years	5	1732	0.50	0.41-0.60	9.02	100%	7.62
Age > 4 years	9	749	0.53	0.39-0.68	2.98	100%	14.99
< 68.3 % boys	9	2312	0.50	0.42-0.58	10.07	100%	13.45
> 68.3 % boys	5	168	0.72	0.40-1.03	0.24	100%	13.01
Initial non-clinical behavior problems	8	2096	0.47	0.39-0.56	6.89	100%	11.00
Initial clinical behavior problems	6	384	0.73	0.52-0.94	0.24	100%	15.91
Self-Directed	6	354	0.88	0.28-1.49	6.67	32.25%	20.49
Therapist-assisted	10	2140	0.48	0.40-0.57	9.61	100%	14.19
<i>PSOC</i>							
All studies < 4 years	3	296	0.64	0.41-0.88	1.55	100%	6.64
All studies > 4 years	3	256	0.72	0.06-1.38	10.00**	16.34%	7.79
< 68.3 % boys	4	434	0.50	0.31-0.69	0.75	100%	6.01
> 68.3 % boys	2	118	1.20	0.76-1.63	1.20	83.54%	9.96
Initial non-clinical behavior problems	2	192	0.41	0.12-0.69	0.01	100%	2.08
Initial clinical behavior problems	4	380	0.67	0.47-0.88	1.85	100%	9.47
Self-Directed	3	180	0.58	0.28-0.88	2.56	100%	5.76
Therapist-assisted	4	372	0.72	0.26-1.18	10.31*	22.50%	10.39

N_{ES} = Number of effectsizes; *N*: number of subjects in the studies; *D* = overall effect size; *CI* = confidence interval; *Q* = homogeneity *Q*; % *SE* = percentage of the variance accounted for by random sample error; *F/S-K* = Orwin's Fail/Safe *N*. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

2.5 Summary and Discussion

Although family relationships are important, parents generally receive little preparation for their parenting role and most of them learn “on the job,” by trial and error (Risley et al., 1976; Sanders et al., 2000). The importance of parenting programs in improving parenting skills with the objective of reducing family risk factors associated with child behavior problems led us to conduct a meta-analysis to summarize the findings for Level 4 interventions of the widely used Triple P parenting program. We will now return to the hypotheses set out at the beginning of this article and highlight some implications for research, policy, and practice.

Did the Parenting Styles of Parents Improve After Participating in a Triple P Level 4 Intervention?

Improving parenting styles can have a positive impact on reducing childhood disorders. We concluded that dysfunctional parenting styles (laxness, overreactivity, and verbosity) decreased significantly immediately after the Triple P Level 4 intervention and that these results were maintained for 3 – 12 months. The lack of extended follow-up research unfortunately meant that less could be concluded about longer term effects.

Did the Parental Competences Improve After Participating in a Triple P Level 4 Intervention?

The educative approach to promoting parental competence in Triple P views the development of a parent's capacity for self-regulation as a central skill. This meta-analysis found positive effects on parental satisfaction with their parenting role and feelings of efficacy as a parent directly after the Triple P Level 4 intervention, and that these effects were maintained for 3 – 12 months. These results indicate that parents had more positive expectations about the possibility of change, and we hypothesized that the more self-sufficient parents become, the more likely they are to be resilient in coping with adversity, seeking appropriate support, and advocating for their children (Sanders et al., 2003). The lack of extended follow-up research again meant that less can be concluded about longer term effects.

Are Some Modalities of the Triple P Level 4 Interventions More Effective on Parenting Styles and Parental Competences Than Others?

The effects of the Triple P Level 4 interventions were independent of whether the intervention was delivered in an Individual, Group, or Self-Help format; self-directed and therapist-assisted intervention were equally effective. Parents may have different needs and preferences regarding the type and mode of assistance they require, denoting a flexibility that enables practitioners to determine the scope of the intervention within their own service priorities and funding (Sanders et al., 2003). Furthermore, self-directed support may lessen the need for many parents to consult with practitioners (Rosen, 1976), thereby reducing social service dependency.

What Is the Impact of Child Variables on the Effects on Parenting Styles and Parental Competences?

The Triple P Level 4 intervention was not found to be more effective on parenting styles and parental competences in parents of children with behavior problems rated in the clinical range as compared with children with problems rated as nonclinical. This meant that the Triple P Level 4 intervention was effective across a diverse set of families with concerns about their child's disruptive behavior. Studies with a higher proportion of boys (68.3%) showed greater long-term effect sizes on parental competences than studies with fewer boys, which means that the intervention was more effective for parents of boys than for parents of girls; this is possibly because of a higher level of problem behavior in boys. More parents of boys than parents of girls were included in the studies selected for this meta-analysis, and the impact of gender on parental competences therefore has to be clarified in future studies by including more parents of girls. In addition, the age of the children had no impact on parenting styles and parental competences. These results indicate that the Triple P Level 4 interventions are appropriate for parents of children of different ages.

Implications

Implications for Research

The present meta-analysis has several limitations. First of all, the number of participants was small in several studies (fewer than 50 respondents were included in 52.6% of the randomized studies). Second, different studies were sometimes used in the long-term analysis than were used in the postintervention analysis; therefore, a longitudinal comparison of those effect sizes must be conducted with caution. Third, we took the child as the unit of analysis in this meta-analysis because mothers and fathers report about the same child; it would be interesting, however, to analyze both parents separately to find out whether they report differently. Fourth, nine effect studies were not included in this meta-analysis because strict methodological criteria for inclusion were applied. This meta-analysis guarantees that the synthesis was based on the best evidence alone, but its results may summarize only a narrow research domain. The limitations explained above mean that further research is necessary. It may be useful to conduct more meta-analyses on all instruments and data in the studies of Triple P to provide us with more insight into the effects of Triple P on differences between mothers and fathers or into the impact of Triple P on parental mental health. We are also interested in the differences in effect sizes for the different delivery formats, and it would be worthwhile to conduct meta-analyses of the other levels of Triple P as well. A second direction for future research is to conduct more in-depth analyses on the influences of the child moderators, such as the age and gender of the children. It would be interesting to analyze studies that included more girls, in order to find out what the effects are on parents of girls. Third, we recommend conducting meta-analyses with parent moderators, such as the parents' age, gender, or education, if the data are available. A fourth recommendation for future research is to focus more on parents with children with

emotional problems rather than behavioral problems. Finally, it would be interesting to examine whether the maintained effects observed up to 12 months postintervention occur over a longer period carrying over into the children's adolescence.

Implications for Policy and Practice

The positive results in the meta-analyses and the need for evidence-based programs worldwide imply that it would be interesting for policymakers in other countries to adopt the Triple P Level 4 interventions. The fact that parents are so vital to the development of children within the family is currently placing increasing emphasis on providing support, guidance, and treatment services to adults who face parenting problems. This study found moderate to large effects for the Self-Help Triple P intervention. Self-Help interventions have become more prevalent in the past two decades (Glasgow & Rosen, 1978), and written materials have several advantages over traditional clinical services—they are convenient, they enable users to repeat lessons, and they can be disseminated to many people (Starker, 1990). With the future in mind, parents might be able to follow the Self-Help program while receiving telephone or e-mail support from a practitioner. Parents are not always content with their contacts with practitioners, and may, therefore, prefer to try a Self-Help course, which provides telephone or e-mail support; however, it is important for parents to be able to continue using services within an agency if they need these after completing Self-Help Triple P. Preconditions for given access to the program are that parents must not be intellectually disabled and must report that they can read fluently.

The analyses involved both universal prevention samples and high-risk samples, and the effect sizes were consequently very large for a public health intervention that is universally offered. This means that the interventions are applicable in the prevention departments of public health institutions or youth care departments, or both, and can be offered by a range of different professionals, such as pediatricians, teachers, social workers, psychologists, and psychiatrists.

2.6 Conclusions

This meta-analysis was conducted to assess the effectiveness of Level 4 of the Triple P multilevel intervention system on parenting styles and parental competences across different target groups and intervention modalities. We were interested in the pooled effect size of the measurements of parenting directly after the intervention and between 3 and 12 months later. Research findings from Triple P Level 4 interventions were summarized in this meta-analysis so that the results could be more readily generalized for a larger population. Statistical tests for homogeneity were carried out to determine whether a grouping of effect sizes from different studies showed more variation than would be expected from sampling error alone; this procedure provided an empirical test of whether or not it is plausible to presume that studies, which showed such disparate results, are comparable. In addition, the systematic coding

of study characteristics, which is a standard feature of a meta-analysis, permitted an analytically precise examination of the relationships between study findings and study features of this kind. Our study examined whether effects were moderated by the age and gender of children, the different modalities, and the initial behavior problem scores of the children, but few significant moderators were found, indicating that Triple P can be used with success in a diverse range of families. The results showed that the Triple P Level 4 interventions improved the parenting styles and the competences of parents, as self-reported by the parents. Improvements were sustained over time and even seem to have increased somewhat in the long term. The positive effects of Triple P as shown in this study seem to support the adoption and implementation of the Triple P Level 4 interventions presently being used in an increasing number of diverse cultural contexts around the world.

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3 Is Triple P effective on behavior problems in children?*

Abstract

The Triple P Positive Parenting Program is a multilevel parenting program to prevent and offer treatment for severe behavioral, emotional, and developmental problems in children. The aim of this meta-analysis is to assess the effectiveness of Triple P Level 4 interventions in the management of behavioral problems in children by pooling the evidence from relevant literature that included Level 4 Triple P interventions. Level 4 intervention is indicated if the child has multiple behavior problems in a variety of settings and there are clear deficits in parenting skills. Results indicate that Level 4 of Triple P interventions reduced disruptive behaviors in children. These improvements were maintained well over time, with further improvements in long-term follow-up. These effects support the widespread adoption and implementation of Triple P that is taking place in an increasing number of countries in quite diverse cultural contexts around the world.

3.1 The Triple P Positive Parenting Program

The Positive Parenting Program (Triple P) is a multilevel program to prevent and offer treatment for severe behavioral, emotional, and developmental problems in children aged 0 to 16 years through enhancing the knowledge, skills, and confidence of parents. Triple P incorporates five levels of interventions on a tiered continuum of increasing intensity. The rationale for this stepped-care strategy is that there are different levels of dysfunction and behavioral disturbance in children and that parents may have different needs and desires regarding the type, intensity, and mode of assistance they require (Sanders, Markie-Dadds, & Turner, 1999). Triple P is designed as a public health strategy, a population system of interventions that incorporates different delivery modalities (group, individual, and self-directed).

Levels of Intervention

Level 1 is a form of universal prevention, and it delivers psycho educational information on parenting skills to interested parents. Level 2 is a brief intervention of one or two sessions, for parents of children with mild behavioral problems. Level 3 is a four-session intervention, targets children with mild to moderate behavioral difficulties, and includes active skills training for parents. Level 4 is an intensive, 8- to 10-session

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parent training program for children with more severe behavioral difficulties or who are at risk of developing such problems, which can be offered either individually or in a group of parents. Parents are taught a variety of child management skills. This intervention is a form of selective or indicated prevention in that the children are at elevated risk levels of developing behavioral problems. Finally, Level 5 is an enhanced behavioral family intervention (BFI) program for families in which parenting difficulties are complicated by other sources of family distress (e.g., marital conflict, parental depression, or high levels of stress; Sanders et al., 1999).

Standard Triple P, Group Triple P, Self-Directed Triple P

This indicated preventive intervention targets high-risk individuals who are identified as having detectable problems but who do not yet meet diagnostic criteria for a behavioral disorder. It should be noted that this level of intervention can target individual children at risk or an entire population to identify individual children at risk. For example, a group version of the program may be offered universally in low-income areas, with the goal of identifying and engaging parents of children with severe disruptive and aggressive behavior. Parents are taught a variety of child management skills including providing brief contingent attention following desirable behavior, how to arrange engaging activities in high-risk situations, and how to use clear, calm instructions, logical consequences for misbehavior, planned ignoring, quiet time (nonexclusionary timeout), and timeout. Parents are trained to apply these skills both at home and in the community. Specific strategies such as planned activities training are used to promote the generalization and maintenance of parenting skills across settings and over time (Sanders & Dadds, 1982). As in Level 3, this level of intervention combines the provision of information with active skills training and support. However, it teaches parents to apply parenting skills to a broad range of target behaviors in both home and community settings with the target child and siblings. Here, it should be noted that there are three delivery formats at Level 4: Standard Triple P, Group Triple P, and Self-Directed Triple P. Standard Triple P is an individual 10-session program for parents. Group Triple P is an 8-session program conducted in groups of 10 to 12 parents with four 15- to 30-min follow-up telephone sessions provided as additional support to the parents. Self-Directed Triple P is a 10-week self-help program for parents and may be augmented by weekly 15- to 30-min telephone consultations.

Level 4 intervention is indicated if the child has multiple behavior problems in a variety of settings and there are clear deficits in parenting skills. If the parent wishes to have individual assistance and can commit to attending a 10-session program, the Standard Triple P program is appropriate. Group Triple P is appropriate as a universal (available to all parents) or selective (available to targeted groups of parents) prevention parenting support strategy; however, it is particularly useful as an early intervention strategy for parents of children with current behavior problems. Self-Directed Triple P is ideal for families who live where access to clinical services is poor (e.g., families in rural or remote areas). It is most likely to be successful with families

who are motivated to work through the program on their own and where literacy or language difficulties are not present.

Theoretical Basis of Triple P

Triple P is based on social learning principles (Patterson, Reid, & Dishion, 1982). This approach to the treatment and prevention of childhood disorders has the strongest empirical support of any intervention with children, particularly those with conduct problems (Kazdin, 1987; Sanders, 1996; Sanders & Dadds, 1993; Taylor & Biglan, 1998; Webster Stratton & Hammond, 1997). Furthermore, the Triple-P program is based on research in child and family behavior therapy, developmental research on parenting every day (Risley, Clark, & Cataldo, 1976; Sanders 1992, 1996), research on social information-processing models (e.g., Bandura, 1977, 1995), research from the field of developmental outcomes in children (e.g., Emery, 1982; Grych & Fincham, 1990; Hart & Risley, 1995; Rutter, 1985), and research on a public health perspective to family intervention (e.g., Biglan, 1995; Mrazek & Haggerty, 1994; National Institute of Mental Health, 1998).

Evaluation

The evaluation of Triple P needs to be viewed in the broader context of evaluations of BFI. There is clear evidence that BFI is beneficial in children with disruptive behavior disorders (Forehand & Long, 1988; Webster Stratton, 1994). Since 1978, the intervention methods of Triple P have been subjected to a series of controlled evaluations (Sanders & Dadds, 1993). Since that time, the intervention methods used in Triple P have been subjected to a series of controlled evaluations using both intrasubject replication designs and traditional randomized control group designs. There is evidence that Triple P is an effective parenting strategy. Several studies have shown that parenting skills training used in Triple P produces predictable decreases in child behavior problems, which have typically been maintained over time. Furthermore, clinically meaningful and statistically reliable outcomes for both children and their parents have been demonstrated for the standard, self-directed, telephone-assisted, group, and enhanced interventions. The population varied in the different studies: parents of children with oppositional behavior, parents of children with oppositional defiant disorder or conduct disorder, or parents reporting concerns about disruptive child behavior. Finally, the program has also been successfully used for several different family types, including two-parent families, single-parent families, stepfamilies, maternally depressed families, maritally discordant families, and families with a child with an intellectual disability (Sanders, Markie-Dadds, & Turner, 2003). In those studies, the following variables were measured: child disruptive behavior, parent-child interaction, parenting style and confidence, parental adjustment (depression, anxiety, stress, self-esteem), parenting conflict, and relationship satisfaction.

3.2 Meta-Analysis

In the current meta-analysis, we examine the effectiveness of Triple P interventions in the management of behavioral problems among children, aged 2 to 12 years old, by pooling the evidence from the pertinent studies. In a meta-analysis, the results of a large and diverse body of studies can be summarized, interpreted, and more readily generalized to an entire population because of the increase in the number of participants (Rosnow & Rosenthal, 2002; Silverman, 2001). Hence, in this meta-analysis, an overall effect size for Level 4 Triple P interventions worldwide is calculated, as is the variability in the set of studies. The systematic coding of study characteristics permits an analytically precise examination of the relationships between study findings and study features such as respondent characteristics, format, design, and nature of intervention (Lipsey & Wilson, 2001). Because most of the relevant Triple P studies that were identified concerned Level 4 of the Triple P system, we decided to restrict the meta-analysis to this level only.

We conducted two meta-analyses. In the first meta-analysis, we assessed the effectiveness of Triple P in behavioral problems of children compared to the control group, as directly measured at the end of the intervention. In the second meta-analysis, we assessed the degree to which post-intervention effects were maintained over time in the intervention group.

In those meta-analyses, we hypothesized that behavior problems of children, aged 2 to 11 years old, decrease after participating in a Level 4 Triple P intervention, both directly after the intervention and after a follow-up of 6 to 12 months. Second, we were also interested in whether the effects of Level 4 of Triple P were moderated by the different delivery formats of the intervention and characteristics of the parents and the children. It was hypothesized that the efficacy of Triple P is independent of whether the intervention was delivered to individual parents, to groups, or in a self-help format. Third, empirical studies have shown that physically aggressive behavior occurs in children 1 year old, increases in the 2nd life year, and then tends to decline from the 3rd birthday onward (Alink et al., 2006; Tremblay et al., 2004). Therefore, we hypothesized that Triple P is more effective when the interventions are given at age 2 to 4 compared with older ages. In addition, it is evident that boys exhibit more externalizing problems than do girls at the age of 2 to 3 years (Alink et al., 2006; Cummings, Davies, & Campbell, 2002; Hudson & Rapee, 2005). Because there is more room for change for boys than for girls, we hypothesized that Triple P is more effective for boys than for girls. Finally, the behavioral problems of the children at the start of the intervention may be of importance. The severity of the problems at the start of the intervention differs across Triple P studies depending on whether they are universal prevention trials, indicated prevention trials, or treatment studies. It was hypothesized that Triple P is more effective for children with higher scores on the Eyberg Child Behaviour Questionnaire (ECBI) because there is more room for change for children with higher ECBI scores.

3.3 Method

We used three different search methods to identify literature for the meta-analysis. First, we searched the literature in two electronic databases, Medline (1975 to February 2006) and PsycINFO (1975 to February 2006). The following keywords were used: *Triple P* and *parent* (and words such as *parenting* or *parental* were also included in the search). Second, we searched all reference lists of studies compiled by the Parenting and Family Support Centre at the University of Queensland in Australia. Third, we asked researchers who had conducted Triple P studies whether they had other relevant unpublished material. We found three Triple P projects in Germany and Switzerland.

Studies had to meet the following inclusion criteria: (a) the study examined the effects of a Level 4 Triple P intervention, an intensive parent training program for children with more severe behavioral difficulties or who are at risk of developing such problems, (b) effectivity of Triple P was assessed using a questionnaire for the parents to evaluate disruptive behavior in their children aged 2 to 11, and (c) sufficient empirical data were reported for the calculation of standardized effect sizes. Because we conducted two meta-analyses, the study had to report posttest data of the intervention and control group (for the first meta-analysis), and preintervention and follow-up data had to be reported separately for the intervention group (for the second meta-analysis). We excluded studies with samples of children older than 11 because Triple P has a separate program for teens.

Measurement

To assess the disruptive behavior of children, the ECBI is often used (Eyberg & Pincus, 1999). The ECBI is a 36-item measure of parental perceptions of disruptive behavior in children aged 2 to 16 years. It provides two measures: frequency of disruptive behaviors (intensity score) rated on 7-point scales and number of disruptive behaviors that parents list as problematic (problem score). The ECBI has a high internal consistency for Intensity Scale ($r = .95$) and for the Problem Scale ($r = .94$) (Robinson, Eyberg, & Ross, 1980). The established cutoff scores (Eyberg & Ross, 1978) of 127 for the Intensity Scale and 11 for the Problem Scale have been validated in clinical studies for both young children (e.g., Webster Stratton, 1984) and adolescents (e.g., Baden & Howe, 1992).

The ECBI is the most frequently used measure in the Triple P interventions to assess behavior problems in children. Other measures used in the studies assessing behavior problems are the Child Behavior Checklist (CBCL) and the Strength and Difficulties Questionnaire (SDQ). The CBCL was used in one study (Heinrichs et al., 2005) and the SDQ in two studies (Leung, Sanders, Leung, Mak, & Lau, 2003; Martin & Sanders, 2003). Because in the last two studies the ECBI was also represented, we decided to include only studies in which behavior problems were assessed with the ECBI.

Selected Studies

We found 48 effect studies in which all levels of Triple P were used and 25 studies that focused on the Level 4 intervention. Of these, 15 studies met the inclusion criteria. In all, 3 studies were excluded from the first meta-analysis because they had no control group, 3 studies were excluded because they were no-effectiveness studies, and 3 studies were eliminated because a questionnaire other than the ECBI was used (CBCL and SDQ).

Selected characteristics of these studies are presented in Table 1. The 15 studies were independently coded by two researchers on design and sample characteristics, delivery format of the Level 4 intervention of Triple P, reliability and validity of the measures, characteristics of the parents and children, initial problems of the children, and duration of follow-up times. Discrepancies between the two researchers were resolved by recalculating and consensus.

Group Triple P was used as the intervention in 9 studies, Standard Triple P in 1 study, and Self-Directed Triple P in 6 studies. In one study (Sanders, Markie-Dadds, Tully, & Bor, 2000), two versions of Triple P, Self-Directed and Standard, were compared with a waitlist control group. In this case, analyses for both interventions were conducted. In one study, the target of the intervention was working parents. In all, 14 studies were randomized clinical trials and 1 study was a nonrandom, two-group, concurrent prospective observation design (Zubrick et al., 2005). In 9 studies, parents reported their child's behavior in the clinically elevated range at preintervention and in 6 studies in the nonclinical range. The percentage of boys was 62.6%, averaged across all studies. We divided the studies into less than 62.6% boys and more than 62.6% boys to have two comparing groups. Boys were overrepresented in all studies, and the studies would have been heterogeneous if we had divided the groups into 50% boys and 50% girls. In 7 studies, more than 62.6% of the children were boys. In 5 studies, the children were younger than 4. A total of 14 studies were selected for the first meta-analysis and also 14 for the second meta-analysis. In 4 studies, follow-up data were presented after 12 months; in 11 studies, the follow-up was conducted at 4 to 6 months; and in 1 study (Bodenman, Cina, Ledenmann, & Sanders, 2007) follow-up measures were taken at both 6 and 12 months.

Meta-Analytic Procedures

For each study, we calculated an effect size: the standardized difference between the means of two groups (Cohen's *d*). A correction of the standardized mean difference was used (Hedges *g*) because studies with samples of fewer than 20 tend to show upward bias in their results (Lipsey & Wilson, 2001). Because studies with a larger sample size provide more reliable estimates of the population mean, effect sizes were weighted by sample size.

In the first meta-analysis, we were interested in the differences between mean scores of the experimental and control groups at postmeasurement. The standardized effect size, *d*, was calculated as $d = (M_E - M_C) / SD_C$, where M_E and M_C are the means of the experimental and control groups, respectively, at postintervention and postmeas-

urement and SDC is the standard deviation of the control group. The standardized effect sizes, d , show by how many standard units (z scores) the experimental group has progressed as compared to the control group at postmeasurement.

In the second meta-analysis, we also calculated the standardized mean difference as $d = (M_p - M_f) / SD$, where M_p and M_f are the means at baseline and follow-up, respectively, and SD_p is the standard deviation at baseline. This within-group effect size thus indicates by how many standard units the recipients of the intervention have improved over time relative to their own baseline score. It can thus be interpreted as a standardized health gain score. An effect size of $d = 0.5$ indicates that the mean of the experimental group is half a standard deviation larger than the mean of the control group. Because the study of Zubrick et al. (2005) was not a randomized clinical trial, we calculated the standardized pre-post change score of the experimental group (d_E) and did the same for the control group (d_C). Then, we calculated their difference using the following formula (d) $\Delta d_E - d_C$.

Basically, meta-analysis amounts to pooling individual d s and obtaining a best overall estimate of the intervention effect, within its 95% confidence interval (95% CI). The meta-analyses were conducted with the computer program Meta-Analysis, Version 5.3 (Schwarzer, 1989). This program is based on the statistical techniques outlined by Hedges and Olkin (1985). We made use of the random effects model. In this model, it is assumed that the variability between the effect sizes is because of sampling error plus variability in the population of effects (Hedges & Olkin, 1985). The meta-analytical outcomes obtained under a random effects model are said to be conservative in that their 95% CIs are usually broad, thus reducing the likelihood of Type II error. The results are shown in Tables 2 and 3 and are corrected for small sample size (transforming Cohen's d into a measure technically known as Hedge's g) and are also corrected for random measurement error in the original scale (i.e., Cronbach's α of the outcome measures as used in the primary studies). From a clinical perspective, an effect size in the range of $d = 0.56$ to 1.2 can be interpreted as a large effect, whereas effect sizes of 0.33 to 0.55 are moderate, and effect sizes of 0.00 to 0.32 are deemed small (Lipsey & Wilson, 1993). In this analysis, it was not possible to calculate the differences between mean scores of the intervention and the control groups because in most cases the control group had no follow-up measurements. We also conducted the homogeneity test, Q , to ascertain whether the various effect sizes that are averaged into the pooled d all estimate the same population effect size (Rosenthal & Rubin, 1982). A rejection of the null hypothesis of homogeneity indicates that there are differences among the effect sizes of the primary studies that cannot be attributed to random sample error and may be related to systematic differences across the original studies—which then need to be further investigated (Schwarzer, 1989). Whenever the Q test for homogeneity was significant, we conducted an outlier analysis. To identify outliers, we conducted cluster analyses with the computer program (Schwarzer, 1989), conducted another meta-analysis without the outlier, and then ascertained whether we had obtained a more homogeneous set of primary studies where the Q test was no longer significant. As the discriminatory power of

Table 1. Selected Characteristics of studies examining the effects of Triple P level 4 on behavioral and emotional problems in children

Study	Conditions	N TP	Target population	
Bodenman, Cina, Ledenmann and Sanders (2007)	1. GR 2. no treatment 3. CCET	GR: 51 No treatment: 41	Couples with children aged between 2-12 years recruited by means of public ads in several newspapers in the rural areas of Switzerland.	
Connell, Sanders, and Markie-Dadds (1997)	1. SD 2. WL	SD: 12 WL: 11	Families in a rural area, reporting concerns about their child's behavior and rate their child's behavior within the clinical range on the intensity scale of the ECBI	
Gallart and Matthey (2005)	1. GR+T 2. GR 3. WL	GR: 33 WL: 16	Parents experiencing difficulties with their children's disruptive behaviors.	
Hoath and Sanders (2002)	1. GR 2. WL	GR: 9 WL: 11	Families with a child with a clinical diagnosis of ADHD.	
Ireland, Sanders, and Markie-Dadds (2003)	1. GR 2. GR (with partner support module)	GR:16 EGR: 16	Couples with concerns about their child's disruptive behavior, exhibit clinically significant levels of marital conflict over parenting	
Leung et al. (2003)	1. GR 2. WL	GR: 33 WL: 36	Parents living in Hong Kong with concerns about their children's behavior	
McTaggart and Sanders (2005)	1. GR (Newsletter) 2. GR 3. WL	GR: 79 WL: 244	All families living in a high-risk region (e.g., health, child abuse).	
Markie-Dadds and Sanders (2006b)	1. SD 2. WL	SD: 21 WL: 22	Mothers had to rate their children's behavior in the elevated range on the ECBI (IS \geq 127 or PS \geq 11)	
Markie-Dadds and Sanders (2006a)	1. SD 2. SD+T 3. WL	SD: 28 WL:12	Mothers had to rate their children's behavior in the elevated range on the ECBI (IS \geq 127 or PS \geq 11)	
Martin and Sanders (2003)	1. GR WPTP 2. WL	GR: 16 WL: 11	Academic and general staff at the University of Queensland, Australia. Rating of the child behavioral problems in the clinical range of intensity as measured by the SDQ.	
Morawska and Sanders (2006)	1. SD 2. WL	SD: 73 WL: 37	Parents with concerns about their child's behavior.	

	Meas.	% DO	Age Child (M)	% gender child is male	Problem and intensity score in E	Problem and intensity score in C	Meta 1/ meta 2
	Pre, post, 6 months, 12 months	12 at FU	6.6 (SD =2.83)	55%	10.52 118.29	- -	Meta 1 and 2
	Pre, 4 months	-	4.27 (SD =1.05)	43%	20.75 155.83	18.55 158.36	Meta 1 and 2
	Pre, post	-	5.4 (SD =1.5)	75%	- 108.3	- 137.1	Meta 1
	Pre, post, 3 months	5 at post 23 at FU	7.7 (SD =1.33)	-	23 164.22	19.55 159.73	Meta 1 and 2
	Pre, 3 months	28 at FU	3.53 (SD =1.12)	58%	11.72 122.16	- -	Meta 2
	Pre, post	24 at post	4.23 (SD =1.06)	64%	13.25 131.38	16.56 137.7	Meta 1
	Pre, post, 6 months	14 at post	-	57%	- 121.6	- 107.1	Meta 1 and 2
	Pre, post, 6 months	-	3.59 (SD = 0.76)	64%	15.71 126.67	15.23 138.5	Meta 1 and 2
	Pre, post, 6 months	0 at post 4 at FU	3.89 (SD =0,96)	64%	19.27 160.2	20.17 145.75	Meta 1 and 2
	Pre, post, 4 months	23 at post	5.8 (SD =0.19)	-	11.89 125.63	17 135.81	Meta 1 and 2
	Pre, post 6 months	11 at post	2.18 (SD = 0.42)	51%	11.16 120.88	10.19 119.9	Meta 1 and 2

Study	Conditions	N TP	Target population	
Sanders, Markie-Dadds, Tully, and Bor (2000)a	1. ST 2. SD 3. Enhanced 4. WL	ST: 65 Enhanced: - SD: 61 WL: 71	Parents in a low-income areas, reporting concerns about their child's behavior	
Turner, Richards, and Sanders (in press)	1. GR 2. WL	36 GR: 18 WL: 18	Indigenous families with concerns about their child's behavior or their own parenting skills, requesting information or advise at community health sites	
Yuki, Matsumoto, Sofronoff, and Sanders (2007)	1. GR 2. WL	TP: 23 WL: 25	Japanese parents in Brisbane (Australia) with reporting behavioral problems in children	
Zubrick et al. (2005)	1. GR 2. control region	GR: 691 Control region: 774	Universal population: all families in a higher risk region	

GR = Group; EGR = Enhanced Group; GR+T = Group with telephone sessions; SD = Self Directed; SD+T = Self Directed with telephone sessions; S = Standard Triple P; WPTP = Work Place Triple P; CCET = Couples Coping Enhancement Training; WL = Waitlist; Age Child (M) = medium age; DO = percentage of drop-out; FU = Follow Up; meta 1 = meta-analysis 1; meta 2 = meta-analysis 2; E = Experimental Group; C = Control Group. Cut-offs are 127 for ECBI intensity and 11 for ECBI problem score; a. analyses for both Standard Triple P as Self Help Triple P in this study were conducted.

the Q test is not very high, we also looked at the percentage of variance across the primary studies that can be accounted by sample error. The latter can be directly estimated from the random effects model that we used. We assumed homogeneity when at least 80% of the variance across studies could be attributed to random sample error. Outcomes of sufficiently homogeneous sets of primary studies are reported in Table 2.

It should be noted that the use of the Q statistic and indices for sample error allow for a data-driven procedure to identify homogeneous subsets of studies. We also took a content-driven approach and formed subgroups based on the characteristics of the intervention. Again, the Q test was performed to test the idea that these content-driven selections had resulted in homogeneous data sets. In this way, contrasting data sets could be compared. This was done to ascertain, for example, whether a self-help version of Triple P was inferior (or superior) to a therapist-assisted version. When the 95% CIs of the respective effect sizes d were not overlapping, we considered the contrast to be statistically significant. Finally, for each meta-analysis, Orwin's fail-safe number was calculated. This number indicates

	Meas.	% DO	Age Child (M)	% gender child is male	Problem and intensity score in E	Problem and intensity score in C	Meta 1/ meta 2
	Pre, post, 1 yr	14 at post	3.40 (SD = 0.30)	68%	(ST): - 137.4 (SD): - 144.24	(ST): - 138.0 (SD): - 144.24	Meta 1 and 2
	Pre, post 6 months	22 at post 26 at FU	5.72 (SD = 3.19)	67%	17.4 144.23	15.79 130.18	Meta 1 and 2
	Pre, post 3 months	0 at post 4 at FU	4.9 (-)	54%	8.35 108.04	8.0 101.72	Meta 1 and 2
	Pre, post, 12 months 24 months	12 at post 13 at 12 mo 21 at 24 mo	3.73 (SD = 1.17)	57%	- 121.6	- -	Meta 1 and 2

how many (hypothetical) studies with an effect size of zero should be found and included in the meta-analysis to reduce the observed effect size to a smaller value of, say, $d = 0.20$.

3.4 Results

The overall mean effect size for the 14 studies of the child behavior observed by parents at postmeasurement was $d = 0.88$, with a 95% CI of 0.50, 1.27 (Table 2). This effect was statistically significant ($Z = 4.49$, $p < .001$). This was a large effect according to Cohen's criteria. The Q test for the hypothesis of homogeneity across effect sizes had to be rejected, indicating that there was a substantial amount of unexplained variance in the total set of studies that might be attributed to the systematic effects of covariates. Of the variance, 20.4% was caused by random sample error, which left room for a remaining 79.6% that may have systematically covaried with (unknown) covariates. The number of studies with a zero effect that should be found to reduce the effect size to $d = 0.20$ was 47.8. The overall mean effect size concerning the long-term measurement of child behavior was $d = 1.00$, with a 95% CI of 0.55, 1.46. This effect was statistically significant ($z = 4.33$, $p = .001$). This was a large effect. The Q test for the hypothesis of homogeneity across effect sizes had to be rejected. Of the variance, 20.54% was caused by random sample error. The number of studies with a zero effect that should be found to reduce the effect size to

0.20 was 56. At 6 months follow-up, an overall mean effect size of $d = 1.07$ was found ($z = 3.49$, $p = .001$). In the meta-analysis of the four studies with 12-month follow-ups, we found an overall mean effect size of $d = 0.84$ ($z = 2.59$, $p = .001$). However, the results were significantly heterogeneous.

Table 2. Results of meta-analyses examining the effects of the Triple-P level 4 on the ECBI: Eyberg Child Behavior Inventory

	N_{ES}	N	D	95% CI	Q (df)	%SE	F/S-K
Effects at post-measurement							
All studies	14	2537	0.88	0.50-1.27	66.71 (13)***	20.34%	47.8
Only group, outliers excluded (no. 2, 6, 8, 9, 10, 14 in Table 1)	8	2182	0.42	0.33-0.51	13.17 (7)	99.53%	8.8
Long-term effects after 6 and 12 months							
All studies	14	2232	1.00	0.55-1.46	86.5 (13)***	20.54%	56
All studies, outliers excluded (no., 2, 4, 14, in Table 1)	11	2156	0.65	0.44-0.86	40.44 (10)***	57.5%	25
Excluded 3 Self-Directed studies (no. 8, 9, 12, in Table 1)	8	1860	0.37	0.28-0.46	4.60 (7)	100%	6.9
6 months	10	610	1.07	0.47-1.67	52.39 (9)***	18.2%	43
6 months, outliers excluded (2, 8, 14, in Table 1)	7	496	0.49	0.31-0.67	3.87 (6)	100%	10
12 months	4	1622	0.83	0.20-1.46	28.07 (3)***	26.6%	12.7

N_{ES} = Number of effect sizes; N = number of subjects in the studies; d = overall effect size; CI = confidence interval; Q = homogeneity Q; % SE = percentage of the variance accounted for by random sample error; F/S-K = Orwin's Fail/Safe N. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

We conducted an outlier analysis for the set of 14 studies in which a pre-post design was adopted. At a 1% confidence level, four separate clusters of studies were found. We conducted an analysis of one cluster with only group interventions (8 studies). An overall mean effect size of 0.42 was found, which is a moderate effect (95% CI = 0.33, 0.51, $z = 9.46$, $p = .000$). The Q test indicated that this was a homogeneous set of studies.

Furthermore, we conducted an outlier analysis of the follow-up meta-analysis. At a 1% confidence level, three clusters were formed. We examined why 4 studies in two clusters differed from the other 10 studies in the third cluster. In 3 studies, very large

effect sizes were found. For the 4th study of a self-directed intervention, no reasons were found to exclude it from the analysis. We conducted an analysis of 11 studies. These results were also significantly heterogeneous, but the amount of explained variance increased to 57.5%. In a next sub analysis, we excluded 3 studies on self-directed variants of Triple P. These studies were outliers because of their very large effect sizes. An overall mean effect size of $d = .37$ was found, which is a moderate effect (95% CI = 0.28, 0.46, $z = 7.95$, $p = .001$). The Q test indicated that this was a homogeneous set of studies.

Because the results of the 6-month follow-ups are significantly heterogeneous, we again excluded three outlier studies. After exclusion of the outliers, an overall effect size of $d = 0.49$ was found, which is a moderate effect (95% CI = 0.31, 0.67, $z = 5.32$, $p = .001$). The Q test indicated that this was a homogeneous set of studies. We conducted several additional meta-analyses to examine whether effects were moderated by age of children (younger than 4 years vs. older), gender of the children (more than 62.6% boys vs. less than 62.6%), self-directed versus practitioner assisted, individual versus other studies, group versus other studies, and behavior problem scores of the children on the ECBI (problems at pre-test in the clinical range vs. nonclinical range). The cut-off scores of the ECBI are ≥ 127 for the Intensity Scale and ≥ 11 for the Problem Scale (Eyberg & Ross, 1978). We again excluded the outliers by cluster analyses with the computer program (Schwarzer, 1989). The results are summarized in Table 3. Studies with less than 62.6% boys were found to have significantly larger long-term effects on behavior problems than those with more than 62.6% boys ($d = 1.08$, 95% CI = 0.62, 1.54 vs. $d = 0.37$, 95% CI = 0.27, 0.46). Furthermore, studies with an initial behavior problem score in the clinical range (initial intensity score ECBI ≥ 127) were found to have significantly larger long-term effects on behavior problems than those with nonclinical behavior problems ($d = 1.08$, 95% CI = 0.62, 1.54 vs. $d = 0.36$, 95% CI = 0.27, 0.46). None of the other moderator variables were significant.

3.5 Discussion

Main Findings

Level 4 of Triple P has moderate to large effects on behavior problems of children that last in follow-up measurements of 6 to 12 months. A large effect size was found at both postintervention ($d = 0.88$) and long-term follow-up assessment of the child behavior ($d = 1.00$). At 6 and 12 months follow-up, overall mean effect sizes of $d = 1.07$ and $d = 0.84$, respectively, were found. Because the results are significantly heterogeneous, subanalyses were conducted. An overall, homogeneous mean effect size of 0.42 was found at postmeasurement (eight studies). At 6 months, an effect size of 0.49 was found (seven studies). These are moderate effects. Few significant moderators were found, indicating that Triple P can be successfully used with a diverse range of families, types of problems, delivery formats, and ages of children. Studies with a higher proportion of girls have larger

Table 3: Results of meta-analyses of Triple P across modalities

	NES	N	D	95% CI	Q	%SE	F/S-K
Effects directly after the intervention							
age < 4 years	4	1.772	0.54	0.30-0.78	5.52	50.43	6.83
age > 4 years	5	520	0.25	0.06-0.44	3.86	100.0	1.31
<62,6% boys	4	1.990	0.39	0.30-0.48	5.30	100.0	3.83
>62,6% boys	5	302	0.63	0.39-0.97	4.51	10.0	10.81
Initial non-clinical behavior problems	6	2.075	0.40	0.31-0.49	8.32	100.0	5.89
Initial clinical behavior problems	3	217	0.68	0.40-0.97	3.01	100.0	7.22
Self Directed	5	348	1.14	0.40-1.89	21.24***	18.71	23.55
Guided	7	2.121	0.44	0.29-0.59	16.10*	86.84	8.38
Long-term effects after 6 and 12 months							
age <4 years	5	1.664	0.65	0.31-0.99	23.45***	32.12	11.24
age >4 years	5	384	0.66	0.15-1.74	6.19	36.72	11.59
<62,6% boys	5	230	1.08	0.62-1.54	4.18	61.19	17.61
>62,6% boys	5	1.786	0.37	0.27-0.46	3.20	100.0	4.13
Initial non-clinical behavior problems	6	1.818	0.36	0.27-0.46	3.22	100.0	4.92
Initial clinical behavior problems	4	230	1.08	0.62-1.54	4.18	61.19	17.61
Self Directed	5	335	1.09	0.55-1.63	13.07*	42.29	22.34
Guided	8	1.831	0.65	0.28-1.01	27.10***	34.98	17.96

N_{ES} = Number of effect sizes; N = number of subjects in the studies; D = overall effect size; CI = confidence interval; Q = Homogeneity Q ; % SE = percentage of the variance accounted for by random sample error; $F/S-K$ = Orwin's Fail/Safe N . Excluded outliers studies are Nos. 2, 6, 8, 9, 10, 14 in Table 1); * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

long-term effect sizes than do studies with fewer girls ($d = 1.08$ vs. $d = 0.37$). In the long term, the effects in the seven studies with scores in the clinical range on behavior problems at the start of the intervention were larger than in the nine studies with lower scores ($d = 0.36$ vs. $d = 1.08$).

Limitations

The present meta-analysis has several limitations. First, the number of participants in several studies was small (in 73% of the randomized studies, 10 to 50 respondents were included). Second, in the long-term analysis, sometimes other studies were used, as in the postintervention analysis. Consequently, a longitudinal comparison of those effect sizes must be conducted with caution. Third, in this meta-analysis, we took the child as the "unit of analysis" because mothers and fathers reported about

the same child. But it would be interesting to analyze both parents separately to see if they report differently. Fourth, because strict methodological criteria for inclusion were conducted, 10 effect studies were not included in this meta-analysis. This meta-analysis has assurance that the synthesis is based on only the best evidence, but its results may summarize only a narrow research domain.

Directions for Future Research

Despite these limitations, this meta-analysis suggests that the Level 4 system of the Triple P intervention is a worthwhile intervention to both prevent and treat behavior problems in children. At the same time, because of the above-cited limitations, further research is necessary. First, it may be useful to conduct more meta-analyses with all other instruments in the studies on Level 4 Triple P, giving us more insight into the effects of Triple P on Parental competences (De Graaf, Speetjens, Smit, & De Wolff, 2008), giving us more insight into differences between mothers and fathers, and enabling the impact of Triple P on parental mental health to be examined. We are also interested in the differences in effect sizes for the different delivery formats, especially in the Self-Help Triple P, because of the promising effects in this meta-analysis. Furthermore, it would be worthwhile to conduct meta-analyses on some other levels of Triple P. A second direction for future research is to conduct more in-depth analyses on the influences of the age and gender of the child on the effects of the Triple P intervention. Because the long-term effects of studies with fewer boys were found to have significantly larger long-term effects on behavior problems than studies with more boys, it would be interesting to conduct more research on the influence of this moderator. Third, it would be interesting to examine whether the observed maintenance effects up to 3 years postintervention occur over a longer period into children adolescence. A fourth suggestion is to tentatively add one or two more randomized trials on Self-Directed Triple P to this meta-analysis. In a cumulative meta-analysis, it can be established whether the Self-Directed Triple P is more effective than the therapist-assisted Triple P interventions.

3.6 Conclusion

This meta-analysis was conducted to assess the effectiveness of Level 4 of the Triple P multilevel intervention system on behavioral and emotional problems of children across different target groups and intervention modalities. This level of intervention is part of a multilevel suite of interventions designed as a public health strategy to promote better parenting. It contains different delivery formats. We were interested in the pooled effect sizes of the measures of disruptive behavior in children directly after the intervention and after 6 and 12 months. The results indicate that the interventions using Level 4 of Triple P improve the behavior of the child, as observed by the parents. Improvements in children's behavior are sustained over time and seem to even improve somewhat in the long term. Because the analyses involved both prevention universal

samples and high-risk samples, the effect sizes are very large for a universally offered public health intervention. The positive effects of Triple P shown in this study seem to support the widespread adoption and implementation of the program in an increasing number of countries in quite diverse cultural contexts around the world.

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4 Is Primary Care Triple P an addition to the primary care parenting support in the Netherlands?*

Abstract

The present study evaluated two primary care parenting interventions. First, we evaluated the most widely used Dutch practices for primary care parenting support. Second, we assessed the applicability of the Primary Care Triple P approach, which is now being utilized in a wide variety of primary care settings. Both interventions target parents of children with mild to moderate behavioral and/or emotional problems, with the aim of improving parenting skills and thereby decreasing child problems. We examined the interventions in pre-, post- and follow-up assessment, and compared results. Both interventions produced significant reductions in reported child emotional and behavior problems, that also remained after three months. For both groups, parenting styles were also found to have improved at both post-test and follow-up measurement. When compared to the regular Dutch parenting consultation practices, however, the Primary Care Triple P approach produced greater reductions in parental laxness and total parenting dysfunction, and greater improvement in total parenting competence at both post-test and follow-up. Primary Care Triple P may even — in light of the greater improvements in parenting skills and total parental competences in the Triple P group than in the regular Dutch parenting consultation group — produce better results in the long run concerning child behavior and emotional problems.

4.1 Introduction

Behavioral and emotional problems are quite common in children and adolescents. Several studies in Australia, Canada, Germany, New Zealand, United Kingdom and the USA, have shown that approximately 18% of all children experience behavioral or emotional problems at some point in their development (Sanders, Markie-Dadds, & Turner, 2003; Zubrick et al., 1995). Comparable research in The Netherlands shows that 15% of Dutch children (6-18 years old) have behavioral and emotional problems (Van der Ploeg, 1997). In another Dutch study, 21% of Dutch elementary and high school students experienced externalizing behavioral problems such as delinquent or aggressive behavior) and 19% of Dutch students have been found to experience internalizing problems such as withdrawn behavior, physical complaints, anxiety,

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or depressive complaints (Ter Bogt, Van Dorsselaer, & Vollebergh, 2003). In more recent studies it is shown that 5% of Dutch children aged 0 – 12 years experience severe emotional and behavioral problems (Zeijl, Crone, Wiefferink, Keuzenkamp & Reijneveld, 2005). While psychological problems appear less frequently in younger children, there is still a reported incidence of about 6% in Dutch babies (0-14 months) and 6% in Dutch toddlers (Zeijl et al., 2005).

The way in which a family interacts has a considerable influence on the psychological, physical, social, and economic welfare of children. Many social, mental health, and economic problems are linked to disturbed family functioning and the breakdown of family relationships (Chamberlain & , 1992, 1995; Patterson, 1982, 1992; Sanders & Duncan, 1995). Epidemiological studies further show such family risk factors as poor parenting, conflict, and marriage breakdown to strongly influence children's development (Cummings & Davies, 1994; Dryfoos, 1990; Robins, 1991). More specifically, the following have been found to increase the risk of the development of major behavioral and/or emotional problems on the part of children, including substance abuse, antisocial behavior, and juvenile crime: lack of a warm positive relationship with parents; insecure attachment; harsh, inflexible, rigid, or inconsistent discipline practices; inadequate supervision of and involvement with children; marital strife and/or breakdown; and parental psychopathology (particularly maternal depression) (Coie, 1996; Loeber & Farrington, 1998; Sanders et al., 2003). In light of the above, it should not come as a surprise that several interventions with a focus on family functioning and parenting have been developed to help children.

The psychological problems of children and adolescents, as well as dysfunctional parenting styles, can vary in severity, which means that the help for such children and their families is organized at different levels. The focus of the present study is on the provision of primary care aimed at the parents of children with mild to moderate behavior and emotional problems. The Dutch primary care system differs from the primary care systems of other countries in that a variety of methods can be used to improve parenting, child behavior problems, and child emotional problems. The effectiveness of most of the methods has yet to be tested, however.

In 2006, a trial implementation to the Triple P – Positive Parenting Program was conducted in The Netherlands. In a one-year period, interventions of different levels of the Triple P program were implemented in two regions in The Netherlands. The objective of the trial implementation was to implement those interventions in two pilot regions and to prepare a scenario for a broad implementation.

Triple P is a behavioral family intervention that is based upon the principles of social learning (e.g., Patterson, 1982). Behavioral family intervention has the strongest empirical support of any intervention for children, and has been found to be particularly effective for children with conduct problems (Kazdin, 1987; Sanders & Markie-Dadds, 1996; Taylor & Biglan, 1998; Webster-Stratton & Hammond, 1997). Triple P aims to enhance family protective factors and reduce those risk factors known to be associated with severe behavioral and emotional problems on the part of preadolescent children. This is achieved by increasing the knowledge, skills, and

confidence of parents. The program was developed by Sanders and colleagues at the Parenting and Family Support Centre of the School of Psychology at the University of Queensland in Australia (Sanders, Markie-Dadds, Tully, & Bor, 2000; Turner, Sanders, & Markie-Dadds, 1999). Triple P incorporates five levels of intervention of increasing intensity for parents of children between the ages of 0 and 16 years. In The Netherlands, Primary Care Triple P (level 3) — which entails a parenting skills training via the primary care system — was implemented. Primary Care Triple P targets children with mild to moderate behavior problems, and includes active skills training for the parents in a four-session format. Although the overall Positive Parenting Program has a substantial empirical foundation, which includes a large number of randomized controlled trials in which the efficacy and effectiveness of the program have been demonstrated (De Graaf, Speetjens, Smit, De Wolff & Tavecchio, 2008a; De Graaf, Speetjens, Smit, De Wolff & Tavecchio, 2008b; Sanders et al., 2003), the effectiveness of Primary Care Triple P has been less well studied (Nowak & Heinrichs, 2008; Turner & Sanders, 2006; Winkler, 2006). Furthermore, Eisner (2008) argued that in Triple P research a bias might be the cause of positive results. Because the evaluator was also the program developer, a conflict of interest between the role of researchers as objective truth finders and their role as enthusiastic advocates of the program appears to possibly be the case. Thus, independent studies are needed to obviate this conflict of interest.

Professionals in youth health care, social work, family care, and parenting centres were asked to participate in the pilot study. They were asked to replace the regular parenting consultation into the Primary Care Triple P intervention, and share their experiences with the research group. No evaluations of those regular primary care consultations have yet been conducted.

In the present study, both the regular Dutch practices of primary care parenting consultation and the Primary Care Triple P approach were evaluated. While randomized controlled designs are the most stringent method of efficacy evaluation, there was no opportunity for randomization in this effectiveness evaluation of service delivery in different settings, and the introduction of a new approach in some sites. The main aim of the implementation trial was to determine whether Triple P was a valuable addition to the Regular Dutch primary care consultations. However, part of the implementation process is to evaluate the effects of the innovation. To know whether one intervention is preferable over the other, we examined both interventions in a quasi-experimental research design. We examined the effects of the different approaches on parenting skills and child behavior and emotional problems. The objective of this study was thus twofold: First, to evaluate the most widely used Dutch practices for primary care parenting support for, as far as we know, the first time. Second, to assess the applicability and efficacy of the Primary Care Triple P approach, which is already being used in a wide variety of primary care settings.

4.2 Method

Participants

Table 1 presents an overview of the socio-demographic characteristics and baseline scores for the two groups of parents. The mean age of the children was 6.2 years. Mostly mothers completed the questionnaires (95.6% of the parents). Of the children, 65% were male. Of the parents, 79.5% were either married or cohabiting; 20.2% were single. The parents in the Primary Care Triple P group reported significantly lower levels of education. Completers of the interventions did not differ from non-completers on any of the baseline variables, which showed loss to follow-up to be completely at random in each group. However, the rates of attrition differed significantly between the groups at post-assessment ($\chi^2 = 6.39$ (df = 1); $p < 0.05$). No significant differences were found at follow-up assessment.

Table 1. Baseline Information on the Participants

Socio-demographic background characteristics and questionnaire results	Regular Dutch parenting consultation ^a	Primary Care Triple P ^b
Age of target child (M, SD)	6.8 (3.8)	5.5 (3.8)
Target child is male (N, %)	28 (66.7)	55 (63.2)
Parent is female (N, %)	39 (95.1)	83 (95.4)
Low level of education (N, %)	2 (4.8) *	18 (20.7) *
Marital status (N, %)		
Married/cohabiting	31 (75.6)	73 (83.9)
Single	10 (24.4)	15 (16.0)
Disability child (N, %)	6 (14.3)	16 (18.4)
Social security benefit (N, %)	6 (14.6)	18 (20.7)
Paid employment (1 or 2 parents) (N, %)	42 (100)	81 (93.1)
Number of children (M, SD)	2.07 (0.9)	2.01 (0.7)

^a Number of respondents varies from 40 to 42. * = $p < 0.05$.

^b Number of respondents varies from 81 to 87 because not all respondents answered all questions.

Design overview

Primary Care Triple P was implemented and evaluated in two regions in The Netherlands in 2006. Parents were asked to participate in this research project by practitioners who were trained to apply Primary Care Triple P. The regular Dutch primary care parenting consultations were monitored in comparable regions and in the same type of institutions. Parents who received regular Dutch primary care from institutions whose employees were not trained to apply Triple P were asked to complete the same questionnaires as the parents who received Triple P.

First, to be sure that the selected locations for both groups were comparable, they were matched with the following factors: income of the parents, mean age of the

parents, percentage of one-person households, number of inhabitants, and urbanization grade. Matching by income was the most important factor, as low income is considered one of the greatest risk factors for many family problems (Mayer, 1997; Zeijl et al., 2005). Secondly, to ensure that the parents who received either regular Dutch primary care consultations or Primary Care Triple P were comparable, we instructed the professionals who offered Dutch primary care consultations to select families that received advice, information or parenting training because of behavioral or emotional problems of their child. Furthermore we instructed these institutions to select families for the regular primary care consultations if the child has only a mild behavior or emotional problem.

Several institutions participated in this study. Participating institutions in both the Triple P and the care-as-usual group were institutions in youth health care, social work, school social work (school counselors), parenting centers, youth care, and day care. In the care-as-usual group, an extra institution participated: the Parenting Shop. In the Parenting Shop employees of social, youth health and family care institutions give advice, information and help to parents in cases of mild child behavior problems. Therefore this 'shop' was selected as a care-as-usual institution.

In the Triple P group, parents came from the following institutions: 15 (17.2%) from social work and school social work, 67 (77%) from youth health care, and 5 parents (5.8%) from other organizations (e.g., day care, a youth care institute or a parenting centre). The parents in the regular primary care group came from: 3 (7.1%) (school) social work, 12 (28.6%) from youth health care, and 27 (64.3%) from the Parenting Shop. In total, 26 practitioners were trained in Triple P, and 100% of the participants were female.

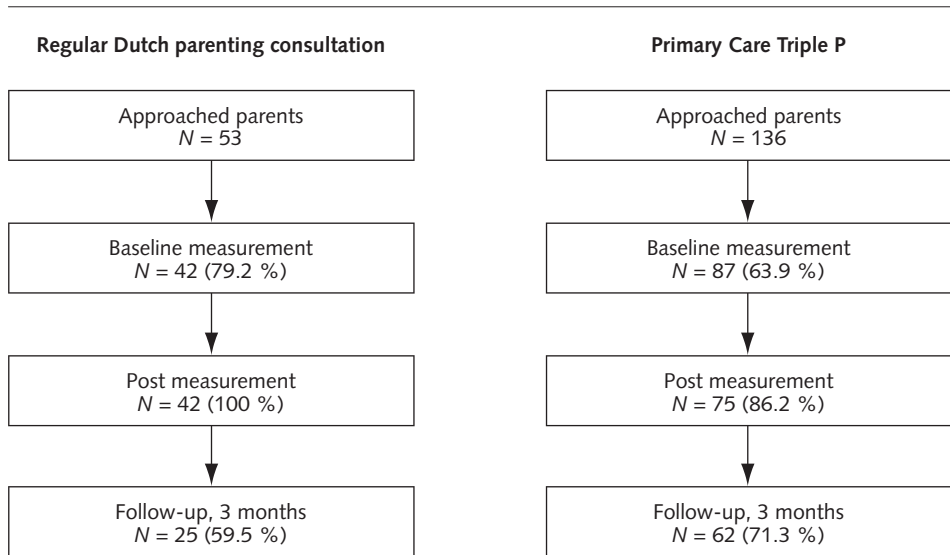
In Figure 1, the various steps in the study are outlined. During the one-year period of recruitment, a total of 189 participants were approached and 129 parents agreed to participate; 42 families (32.6%) participated in regular Dutch parenting (i.e., care as usual), while 87 families (67.4%) participated in Primary Care Triple P.

Although either mothers as well as fathers could complete the questionnaires administered as part of the study, in most cases the mothers did this (95.4% of the Triple P group and 95.1% of the regular Dutch parenting consultation group). The questionnaires were administered immediately prior to intervention at t0 (i.e., pre-test), immediately after completion of the intervention at t1 (i.e., post-test), and three months following completion of the intervention at t2 (i.e., follow-up). After completion of the intervention (i.e., at post-test), 117 (90.7%) of the original 129 participants also completed the questionnaire: 42 (100%) of the care-as-usual group and 75 (86.2%) of the Triple P group. At follow-up 87 (67.4%) of the original 129 participants completed the questionnaire: 25 (59.5%) of the care-as-usual group and 63 (71.3%) of the Triple P group. At post- and follow-up assessment, respectively 13.8% and 28.7% of the parents in the Triple P group and 0% and 40.5% of the parents in the care-as-usual group dropped out.

The effects of regular Dutch parenting consultations and Primary Care Triple P consultations were examined. In order to perform this, parenting behavior and parenting

competence/satisfaction and child emotional and behavioral problems were assessed prior to intervention (t0), at the end of the intervention (t1), and three months following completion of the intervention (t2). The results for the two conditions were then compared.

Figure 1. Flow of Participants through the Study



Interventions

Both regular primary care Dutch parenting consultations and the Primary Care Triple P approach target those parents who report mild or relatively discrete concerns about their child's behavior and/or development (e.g., toilet training, tantrums, problems sleeping, disobedience). The children generally do not meet the diagnostic criteria for such clinical disorders as an oppositional defiant disorder, conduct disorder, or ADHD. There may, however, be clearly sub-clinical levels of problematic behavior.

Regular Dutch parenting consultation

The regular Dutch parenting consultations examined as part of the present study involved a variety of methods and associated theories. The methods largely drew upon the principles of social learning theory (Bandura, 1969; Bandura & Walters, 1963), humanistic psychology (Gordon, 1970), or Video Home Training (Janssens & Kemper, 1996). In social learning models of behavior, the focus is on how social interactions in the family influence the development of children and how they learn new behaviors by imitation and reinforcement. Both desirable and problem behavior is reinforced by positive or negative consequences. From this concept, practitioners advise parents to pay more positive attention to the behavior they want to encourage

and to be more consistent in setting limits to behavior of which they do not approve. The focus of approaches that draw upon the principles of humanistic psychology is on communication between parents and children (Gordon, 1970). The aim of such approaches was originally to improve the relations between parents and children, and this later developed into a general method of communication for the improvement of relationships. Such an approach emphasises effective communication and conflict resolution, using 'win-win strategies'. The key skills in which parents are educated in this type of parent support is the use of 'active listening' and 'I messages' as opposed to 'you' messages. In the video home training approach (Janssens & Kemper, 1996), the interactions between parents and their children are videotaped in the home and then analysed with the parents. The focus in this form of video feedback is exclusively on selecting and reinforcing positive parent child interactions and promoting a more sensitive way of responding to children's initiatives. Besides theories on child development and family interactions, most services recognise the importance of an early detection of risk factors and the promoting of protective factors. There is consensus concerning the fact that family support and strengthening of parenting skills can increase the wellbeing of children.

In practice, the above mentioned approaches and different theoretical concepts are often mixed in the consultation to parents. The content of advice to parents can vary from one practitioner to another, and often is based more on popular knowledge concerning child-raising. Another characteristic is that there is no fixed number of sessions. The intensity and length of an advisory trajectory can vary between 1 and 5 sessions.

The consultations are conducted by different professionals, such as social workers, school counsellors, public health nurses, family counsellors, or educational psychologists working in a specific parenting centre. Most of these practitioners have had some training in parent consultation and issues concerning child development. In a regular parenting consultation, the parents are generally provided with information about the developmental phases and some practical tips concerning how to handle difficult behavior. When the consultation is more than one session, support is given on how to bring a parenting plan into practice. The enhancement of self-confidence and feelings of competence on the part of the parent(s) is one of the main goals of short term parent consultation in The Netherlands. All professionals share agreement on the importance of empowerment of parents and positive parenting practices for the wellbeing of children. The support is flexible and not greatly standardised. There can be great differences between practitioners in the way they support parents, and the knowledge, experience, and personal insights of the particular professional are of obvious importance.

In the Parenting Shop, much attention is given to the relationship between a practitioner and a parent and the quality of the interaction and support. Standardised criteria are formulated to examine a successful advisory consultation. Generally the intervention consists of 1 to 3 contacts. The method is called 'Dialogue Focused Working', based on the principles of empowerment. The focus is more on the process of supporting parents and fine-tuning of the expectations of parents rather than on the content of the consultation itself.

Primary Care Triple P

Primary Care Triple P involves three to four 20-minute sessions that incorporate active skills training and the selective use of parenting tip sheets for common developmental and behavioral problems. In the first session, the history and nature of the presented problem is clarified via interview and direct observation; the goals of intervention are negotiated, and a baseline monitoring system to track the occurrence of problem behaviors is set up. In the second session, the initial problem is reviewed with the parent to determine whether it is still current; baseline monitoring results are discussed together with parental perceptions of the child's behavior, and information on the nature of the problem and the possible etiology of the problem is shared with the parent (i.e., the diagnostic formulation). In addition, a parenting plan using a tip sheet is drawn up. The formulation of the parenting plan may entail the introduction of specific positive parenting strategies via discussion, modeling and behavioral rehearsal, and/or the viewing of video fragments. The second session also involves identification and countering of any obstacles to implementation of a new routine with the development of a personal coping plan for each of the parents. The parents then implement the program. In the third session, the family's progress is monitored, any implementation problems are discussed, and additional parenting strategies may be introduced. The aim of the session is to refine implementation of the agreed routine and to encourage ongoing efforts. In the fourth and final session, progress is reviewed, trouble-shooting is conducted for any difficulties the parent may still be experiencing, positive feedback and encouragement are provided, and the contact is terminated. If no positive results have been achieved within the course of several weeks, the family may then be referred to a higher level intervention (Sanders et al., 2003).

Besides the social learning theory of Patterson (1982), information from the following sources has been incorporated into the program: research on child/family behavior therapy, developmental research on parenting in everyday social information-processing models of behavior (e.g., Bandura, 1977), research from the field of developmental outcomes in children (e.g., Emery, 1982; Grych & Fincham, 1990; Hart & Risley, 1995; Rutter, 2008), and public health perspectives on family intervention (e.g., Biglan, 1995; Mrazek & Haggerty, 1994; National Institute of Mental Health, 1998). Central to Triple P care is enhancement of the parent's capacity for self-regulation, which involves the teaching of parenting skills that enable parents to become independent problem solvers (Sanders et al., 2003).

When Turner and Sanders (2006) compared Primary Care Triple P used with the parents of pre-school aged children in Australia with a waiting list control condition as part of a randomized control trial, those parents who received Triple P care reported significantly lower levels of disruptive child behavior, dysfunctional parenting, and anxiety and stress when compared to the waiting list parents. These short-term effects were largely still present at six month follow-up. The sample size of 30 parents was not large and the children were quite young (i.e., 0-4 years), but the results of this study nevertheless show Primary Care Triple P to effectively improve parenting skills and reduce problematic child behavior. In Germany, three studies have been

conducted to date on combined level 2/3 Triple P interventions, and consistently showed positive effects on parenting and child behavior (Neumann, 2004; Nowak & Heinrichs, 2008; Winkler, 2006).

Integrity

Regular Dutch parenting consultation

For the regular Dutch parenting consultations, the relevant methods were learned during professional education prior to entering this line of work. Everyone has minimally a bachelor's degree in youth health care, social work or educational work, which means that they have completed four years of education. Some practitioners working in the Parenting Centers have a university degree in pedagogic, which means they completed six years of university education. Parenting support consists of one module during their education. The bachelors in pedagogy followed mostly an apprenticeship in parenting support. The age of the practitioners participating in this trial-implementation was between 30 and 40 years. The experiences of the practitioners in giving parenting support differed very much, from 2 years to 20 years. The parenting support was not only focused on behavioral and emotional problems in children, but more on developmental problems in children. The time spent on parenting support in preventing problem behavior in children varied between 2 to 16 hours per week for professionals in the youth health care, and full time for the practitioners in the parenting centers. Here it should be noted that the practitioners in youth health care, social work and parenting centers have different tasks. In the youth health care, parenting consultation is a part of their job. Besides giving parenting consultation they provide for example periodical medical screening of children and vaccinations, or participate in public mental health interventions. Social workers also give support with regard to financial problems, relationship problems, coping with stress, and participating in care-networks. The main task for pedagogic practitioners is in giving parenting support or participating in care-networks. The average number of sessions of parenting consultation in youth health care and social work ranged between three and five sessions; no exact number is available. The average sessions of parenting consultation in the Parenting Shop was around two, and the average minutes per session of parenting consultation in the Parenting Shop was 54.3 minutes ($SD = 7.5$ minutes).

Primary Care Triple P

All Triple P professionals must attend a two-day training program and meet the competency-based accreditation criteria before certification. Supervision sessions are also held among Triple P professionals in The Netherlands for the discussion of specific cases, review of session content, and to help with process issues. In total, 26 practitioners were trained in Primary Care Triple P, and had on average 10.25 years' experience and on average 7.91 hours spent per week in parent consultation relating to child behavior. These participants reported a significant overall increase in

adequacy of training to conduct parent consultations concerning child behavior from pre- to post- and follow-up assessment, and significant increases in self reported confidence in conducting parent consultations concerning child behavior. Participants also reported significant improvements in proficiency in parent consultation skills after completing Triple P training. In total, 20 practitioners (76.9%) completed the accreditation, and all indicated satisfaction through to extreme satisfaction with the accreditation process. The number of Primary Care Triple P sessions ranged from 1 to 5, with a mean of 3.4 ($SD = 1.6$) sessions, and the average time per session was 47 minutes.

Measures

Family Background Questionnaire: Family demographic data was collected using the Family Background Questionnaire (FBQ). The FBQ has been used in several Triple P studies to date (Zubrick et al., 1995). Information is collected on: the child's age and gender, parental marital status, exact relation of the questionnaire respondent to the child, educational background and current employment status of the parent, family composition, and parental level of income and government support.

Strengths and Difficulties Questionnaire: The 25-item *Strengths and Difficulties Questionnaire* (SDQ; Goodman, 1997) is a behavioral screening questionnaire that measures parental perceptions of prosocial and difficult behaviors in children aged 3 to 16 years. Scores are computed for five scales by summing the five items constituting each scale (emotional problems ($\alpha = .68$), conduct problems ($\alpha = .62$), inattention/hyperactivity problems ($\alpha = .84$), peer problems ($\alpha = .57$), and prosocial behavior ($\alpha = .57$)). A total difficulties score ($\alpha = .81$) is also calculated by summing the scores for all of the scales with the exception of the prosocial behavior scale. SDQ scores have been found to discriminate between low- and high-risk samples (Goodman & Scott, 1999). SDQ scores indicative of child behavior problems fall into the clinical range as follows: 5-10 for emotional problems, 4-10 for behavior problems, 7-10 for hyperactivity, 4-10 for problems with peers, 0-4 for prosocial behavior, and 17-40 for total difficulties (Goodman, 1997; Goodman & Scott, 1999).

Parenting Scale: The original 30-item Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993) measures three dysfunctional styles of disciplining: laxness (i.e., permissive discipline), over-reactivity (i.e., authoritarian discipline, displays of anger, meanness, irritability), and verbosity (i.e., overly long reprimands or over-reliance on talking). Adequate internal consistency has been found for the total PS score ($\alpha = .84$) in addition to the subscale of laxness ($\alpha = .83$) and the subscale of over-reactivity ($\alpha = .82$). Modest internal consistency has been found for the verbosity scale ($\alpha = .63$). Prinzie, Onghena and Hellinck (2007) could not replicate the verbosity factor found by Arnold et al. (1993), nor did we in our study. Therefore this subscale was omitted in the analyses in this study. We conducted factor analyses and reliability analyses in order to test whether the alternative subscales of Rhoades and O'Leary (2007) were more appropriate for our sample, however, this was not the case. In addition, the PS has been found to discriminate between the parents of

children referred to clinical settings and parents of children in the general population (Arnold et al., 1993).

Being a Parent Scale: The 16-item Being a Parent Scale (BPS; Johnston & Mash, 1989) is a questionnaire that has been used to stipulate the extent to which parents feel competent about the parenting of their own children. Parents are asked to indicate the degree to which particular propositions apply to them. The response possibilities range from 1 (=strongly disagree) to 6 (=strongly agree). The BPS is divided into two subscales that measure satisfaction with one's own efficacy (i.e., satisfaction, $\alpha = .75$) and judged problem-solving effectiveness (i.e., efficacy, $\alpha = .76$). A total BPS score can also be calculated and is shown to have adequate internal consistency ($\alpha = .79$).

Analyses

Not all respondents returned the post-test and follow-up questionnaires. In order to compensate for the accompanying loss of power, most of the missing values were imputed using the regression imputation procedure as implemented in Stata 9.1 (StataCorp, 2005). The missing values were replaced when at least one of the follow-up assessments was completed, otherwise the respondent was omitted from any further analysis.

Since both primary care parenting strategies were being evaluated for the first time in The Netherlands, we first examined the changes in parenting skills and child behavior for both groups separately. Repeated measures ANOVAs were used to analyse whether the assessed child behaviors and parenting skills significantly improved over time. When significant time effects were observed, we conducted paired t-tests in order to identify whether significant change was obtained between pre-test and post-test, between pre-test and follow-up or both. Furthermore, we calculated the individual standardised effect sizes (Cohen's $d = (M_{\text{pre-test}} - M_{\text{post-test}}) / SD_{\text{pre-test}}$) for all significant changes in order to gain an impression of the magnitude of change. An effect size of 0.50 shows the mean of the post-test to be half a standard deviation larger than the mean of the pre-test. According to Lipsey and Wilson (1993), an effect size of .56 to 1.2 can be interpreted as a large effect; an effect size of .33 to .55 as moderate; and an effect size below .32 as small.

In addition, we were interested in any differences in progress resulting from the different primary care parenting strategies. Therefore, we also conducted 2 (condition: regular Dutch parenting consultation, Primary Care Triple P) x 2 (education: low, other) x 3 (time: pre-test, post-test, follow-up) repeated measures ANOVAs to test for significant condition x time interactions. The between-subjects factor education was included in the analyses because of a significant difference in educational level between both samples. Type IV sums of squares were selected to take the unbalanced design into account. When significant time effects were observed we conducted independent samples t-tests in order to identify whether significant change was obtained between pre-test and post-test, between pre-test and follow-up or both. Furthermore, we calculated incremental standardized effect sizes (Cohen's $d = (M_{\text{regular}} - M_{\text{Triple P}}) / SD_{\text{regular}}$) in order to gain an impression of the magnitude of the effect.

Table 2. Descriptive Statistics and Repeated Measurements ANOVAs for Time Effects in both Primary Care Parenting Strategies separately and the Interaction of Treatment Condition and Time

	Regular Dutch Parenting Consultation				
	Pre-test	Post-test	Follow-up	Time	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>F (p)</i>	
SDQ					
Emotional*	4.23 (2.90)	3.43 (2.48)	3.15 (2.24)	10.52(.000)	
Behavior	3.05 (2.17)	2.45 (1.65)	2.25 (1.47)	6.54 (.004)	
Hyperactive	5.13 (2.73)	4.77 (2.33)	4.97 (2.25)	1.14 (.319)	
Peers	3.00 (2.27)	2.23 (0.82)	2.35 (1.69)	7.65 (.003)	
Total	15.4 (6.46)	12.9 (5.48)	12.7 (5.22)	14.80(.000)	
Pro-social*	6.30 (2.55)	6.58 (2.09)	6.76 (2.06)	1.54 (.220)	
PS					
Laxness	2.58 (0.52)	2.58 (0.62)	2.48 (0.53)	1.85 (.170)	
Over-reactive	3.41 (1.19)	3.08 (0.94)	3.11 (0.90)	7.15 (.001)	
Total	3.21 (0.63)	3.06 (0.58)	2.99 (0.52)	7.37 (.001)	
BPS					
Satisfaction*	38.8 (6.48)	39.3 (6.51)	39.4 (6.53)	0.33 (.690)	
Efficacy*	27.4 (3.39)	27.3 (3.32)	28.5 (2.98)	3.07 (.061)	
Total*	66.3 (7.89)	66.6 (8.47)	67.8 (8.53)	1.42 (.249)	

* $p < 0.05$: differences between conditions at baseline-measurement.

4.3 Results

Table 2 presents the effects in both Regular Dutch Parenting Consultation and Primary Care Triple P separately and the differences between conditions.

Regular Dutch Parenting Consultation

Child Behavior: Respondents reported a significant reduction of emotional problems in their children, $F(2,68) = 10.52$, $p < 0.001$, both from pre-test to post-test ($t = 3.12$; $p < 0.05$; $d = 0.29$) and from pre-test to follow-up ($t = 3.82$; $p < 0.001$; $d = 0.39$). Behavioral problems also decreased over time, $F(2,68) = 6.54$, $p < 0.05$. Again there was a significant reduction from pre-test to post-test ($t = 2.34$, $p < 0.05$; $d = 0.31$) and from pre-test to follow-up ($t = 3.12$, $p < 0.05$; $d = 0.42$). Furthermore, respondents reported a significant reduction of problems with peers, $F(2,61) = 7.65$, $p < 0.01$, both from pre-test to post-test ($t = 3.073$, $p < .01$; $d = 0.34$) and from pre-test and follow-up ($t = 2.84$, $p < 0.01$; $d = 0.29$); and total problems, $F(2,63) = 14.80$, $p < 0.001$, again both from pre-test to post-test ($t = 4.141$, $p < 0.001$; $d = 0.40$) and from pre-test and follow-up ($t = 4.21$, $p < 0.001$; $d = 0.42$). No significant time

Primary Care Triple P					Condition x Time
	Pre-test	Post-test	Follow-up	Time	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>F (p)</i>	<i>F (p)</i>
	2.90 (2.70)	2.44 (2.29)	2.31 (2.09)	5.75 (.008)	0.97 (.381)
	3.11 (1.82)	2.44 (1.46)	2.26 (1.51)	16.54(.000)	0.07 (.935)
	5.38 (2.71)	5.29 (2.55)	5.06 (2.57)	1.23 (.294)	1.12 (.331)
	2.25 (1.89)	2.03 (1.79)	2.04 (1.81)	2.02 (.147)	2.06 (.132)
	13.6 (5.80)	12.3 (5.77)	11.8 (5.69)	11.24(.000)	1.21 (.303)
	7.03 (1.96)	7.62 (1.73)	7.51 (1.85)	6.60 (.002)	0.70 (.500)
	2.75 (0.87)	2.49 (0.84)	2.43 (0.85)	16.37(.000)	5.16 (.010)
	3.26 (0.87)	2.79 (0.73)	2.73 (0.85)	31.48(.000)	2.10 (.134)
	3.18 (0.65)	2.82 (0.63)	2.77 (0.68)	34.18(.000)	3.80 (.029)
	40.0 (6.65)	42.1 (5.56)	42.4 (6.10)	14.31(.000)	1.97 (.142)
	27.8 (3.72)	28.7 (3.56)	29.8 (3.14)	18.23(.000)	2.12 (.123)
	67.7 (8.25)	70.7 (6.95)	72.2 (7.51)	26.59(.000)	3.48 (.038)

effects were found for hyperactivity, $F(2,71) = 1.14$, $p = 0.32$ and pro-social behavior, $F(2,82) = 1.54$, $p = 0.22$.

Parenting Styles: Respondents demonstrated a significant reduction in over-reactive parenting, $F(2,82) = 7.15$, $p < 0.001$, both from pre-test to post-test ($t = 3.78$, $p < 0.001$; $d = 0.36$) and from pre-test to follow-up ($t = 2.66$; $p < 0.05$; $d = 0.33$), and in overall inadequate parenting (total score Parenting Scale), $F(2,82) = 7.37$, $p < .001$, also from pre-test to post-test ($t = 2.68$, $p < 0.05$; $d = 0.24$) and from pre-test tot follow-up ($t = 3.37$, $p < 0.01$; $d = 0.35$). There was no significant change in laxness over time, $F(2,82) = 1.85$, $p = 0.170$.

Parental Sense of Competence: There was no significant improvement in parental satisfaction, $F(2,71) = 0.33$, $p = 0.690$, parental efficacy, $F(2,69) = 3.07$, $p = 0.061$ or overall parental sense of competence, $F(2,69) = 1.42$, $p = 0.249$.

Primary Care Triple P

Child Behavior: Respondents reported a significant reduction of emotional problems, $F(2,133) = 5.75$, $p < 0.01$, both from pre-test to post-test ($t = 2.22$, $p < 0.05$; $d = 0.17$) and from pre-test to follow-up ($t = 2.9$, $p < 0.01$; $d = 0.21$). Behavioral problems also decreased over time, $F(2,158) = 16.54$, $p < 0.001$. Again there was a significant

reduction from pre-test to post-test ($t = 4.22$, $p < 0.001$; $d = 0.35$) and from pre-test to follow-up ($t = 4.92$, $p < 0.001$; $d = 0.44$). Furthermore, respondents reported a significant reduction of total problems, $F(2,172) = 11.24$, $p < 0.001$, both from pre-test to post-test ($t = 3.09$, $p < 0.01$; $d = 0.22$) and from pre-test to follow-up ($t = 4.08$, $p < 0.001$; $d = 0.29$); and pro-social behavior, $F(2,159) = 6.60$, $p < 0.01$, from pre-test to post-test ($t = -3.32$, $p < 0.001$; $d = 0.26$) and from pre-test to follow-up ($t = -2.52$, $p < 0.05$; $d = 0.29$). No significant time effects were found for hyperactivity, $F(2,161) = 1.23$, $p = 0.29$ and problems with peers, $F(2,137) = 2.02$, $p = 0.15$.

Parenting Styles: Respondents demonstrated a significant reduction in lax parenting, $F(2,142) = 16.37$, $p < 0.001$, both from pre-test to post-test ($t = 3.98$, $p < 0.001$; $d = 0.30$) and from pre-test to follow-up ($t = 4.80$, $p < 0.001$; $d = 0.37$), in over-reactive parenting, $F(2,130) = 31.48$, $p < 0.001$, again both from pre-test to post-test ($t = 5.52$, $p < 0.001$; $d = 0.52$) and from pre-test to follow-up ($t = 6.59$, $p < 0.001$; $d = 0.59$), and overall inadequate parenting, $F(2,145) = 34.18$, $p < 0.001$, also from pre-test to post-test ($t = 5.87$, $p < 0.001$; $d = 0.59$) and from pre-test to follow-up ($t = 7.09$; $p < 0.001$; $d = 0.68$).

Parental Sense of Competence: Respondents reported a significant improvement in parental satisfaction, $F(2,149) = 14.31$, $p < 0.001$, both from pre-test to post-test ($t = -4.07$, $p < 0.001$; $d = 0.31$) and from pre-test to follow-up ($t = -4.36$, $p < 0.001$; $d = 0.35$), in parental efficacy, $F(2,170) = 18.23$, $p < 0.001$, also from pre-test to post-test ($t = -2.28$, $p < 0.05$; $d = 0.22$) and from pre-test to follow-up ($t = -6.16$, $p < 0.001$; $d = 0.53$), and in overall parental sense of competence, $F(2,153) = 26.59$, $p < 0.001$, also from pre-test to post-test ($t = -4.37$, $p < 0.001$; $d = 0.32$) and from pre-test to follow-up ($t = -6.59$, $p < 0.001$; $d = 0.49$).

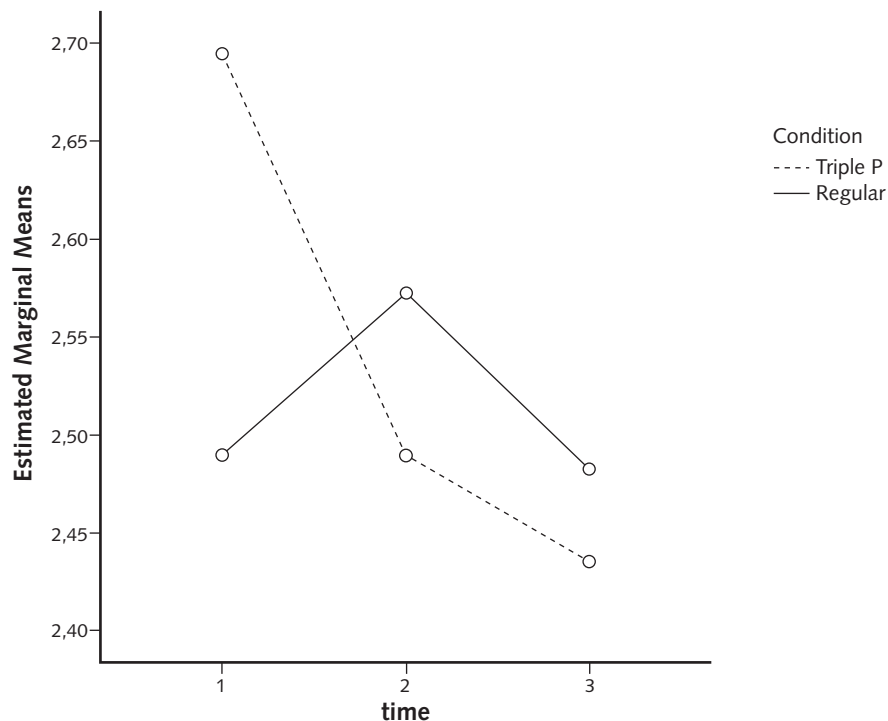
Differences between Effects of Regular Dutch Parenting Consultation and Primary Care Triple P

Child Behavior: As could be expected from the results of the analyses of both primary care parenting strategies separately, most of the repeated measures ANOVAs on child behavior demonstrated a significant main effect over time, indicating that both samples reported a reduction of child problem behavior (with the exception of hyperactivity). The analyses also revealed a significant main effect for condition in emotional problems, $F(1,126) = 6.55$, $p < 0.05$, and pro-social behavior of the children, $F(1,126) = 7.09$, $p < 0.01$, which indicated that the respondents in the regular parenting consultation group experienced more emotional problems and less pro-social behavior in children than in the Primary Care Triple P group at baseline measurement. We did not find a significant main effect for condition on the other measures of child behavior, nor did we find a significant main effect for education. The condition x time interactions were never significant, indicating that both interventions yielded a similar course of problem behavior.

Parenting Styles: The repeated measures ANOVAs on parenting styles demonstrated a significant main effect for time in the reduction of over-reactive parenting and overall inadequate parenting. Main effects for both condition and education were

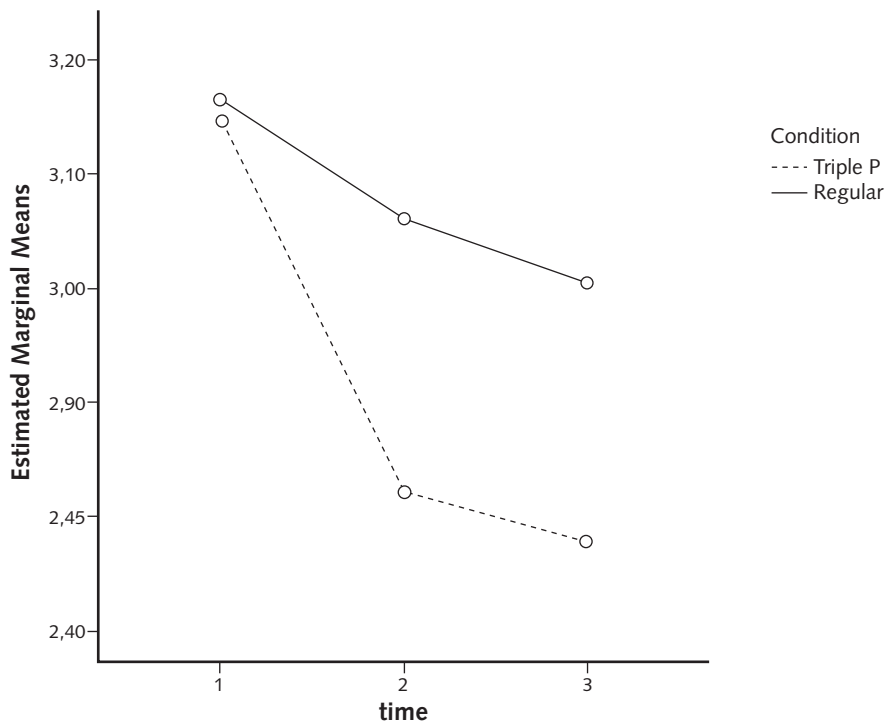
not significant. We did find significant condition x time interactions for both laxness, $F(2,212) = 5.16$, $p = 0.01$, and overall inadequate parenting, $F(2,221) = 3.80$, $p < 0.05$, indicating that Primary Care Triple P resulted in more improvement in parenting styles. Parenting styles were significantly more improved from pre-test to post-test (laxness: $t = 2.42$, $p < 0.05$; $d = 0.30$; total score: $t = 2.09$, $p < 0.05$; $d = 0.32$) and this effect was maintained at follow-up (laxness: $t = 2.39$, $p < 0.05$; $d = 0.25$; total score: $t = 1.99$, $p = 0.05$; $d = 0.39$). The observed difference in effects was in a small to moderate range (Lipsey & Wilson, 1993). This difference in effects is also shown in Figure 2 and Figure 3.

Figure 2. Changes in Laxness in both the Regular Dutch Parenting Consultation and the Primary Care Triple P Condition*



* Controlled for baseline level of education.

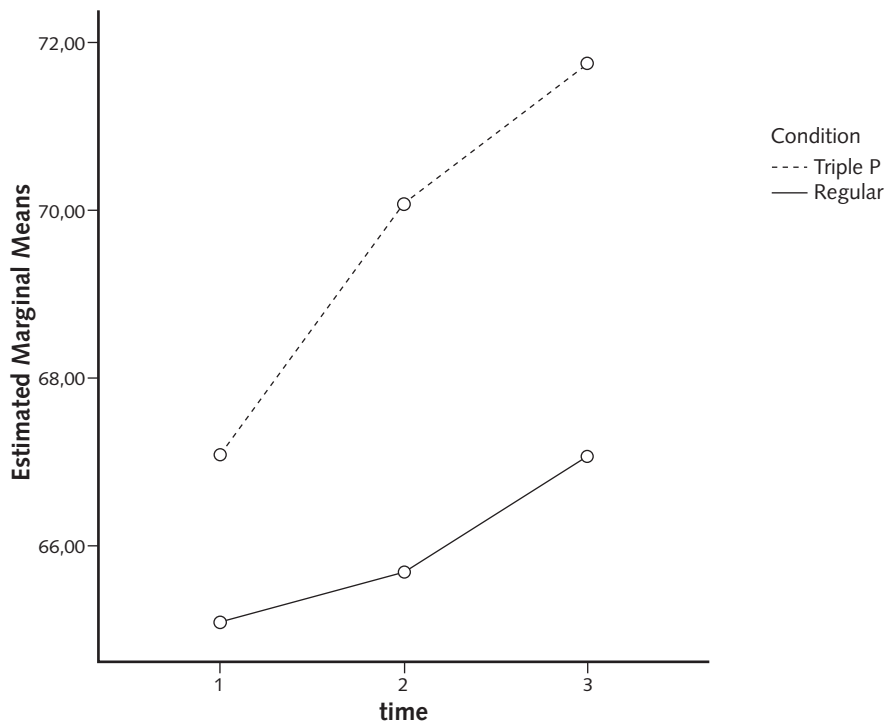
Figure 3. Changes in inadequate parenting in both the Regular Dutch Parenting Consultation and the Primary Care Triple P condition*



* Controlled for baseline level of education.

Parental Sense of Competence: All repeated measures ANOVAs on parental sense of competence demonstrated a significant main effect for time in improving parenting sense of competence. In addition, all main effects for condition were significant, indicating that respondents in Primary Care triple P condition experienced more parental competence on all measurements at baseline. Main effects for education were not significant. Neither were the condition x time interactions for both subscales: satisfaction and efficacy. The condition x time interaction for the total score was, however, significant $F(2,220) = 3.48, p < 0.05$, indicating that respondents reported more improvement in parental competence when they were offered Triple P. This effect was significant from pre-test to post-test ($t = 2.10, p < 0.05; d = 0.28$) and from pre-test to follow-up ($t = 2.37, p < 0.05; d = 0.32$), which is considered small (Lipsey & Wilson, 1993). This result is also presented in Figure 4.

Figure 4. Changes in Parental Sense of Competence in both the Regular Dutch Parenting Consultation and the Primary Care Triple P Condition*



* Controlled for baseline level of education.

Changes in Clinical Child Problems

For both the regular Dutch parenting consultations and Primary Care Triple P, the number of child problems qualifying as clinical at baseline, post-test, and follow-up was assessed using the SDQ. Results are presented in Table 3. At baseline measurement the percentages of prosocial behavior in children and problems with peers were significantly higher in the regular Dutch parenting consultation than in the Primary Care Triple P group (respectively $\chi^2 = 4.42$ ($df = 1$), $p < 0.05$ and $\chi^2 = 8.12$ ($df = 1$); $p < 0.01$). No significant differences were found in emotional and behavioral problems, and hyperactivity at baseline measurement. The percentage of the total problems for the children at baseline was 41% in the regular Dutch parenting consultation group and 24% in the Primary Care Triple P group (not significant, $\chi^2 = 3.64$ ($df = 1$); $p = 0.06$). For both groups, significant reductions in not only the total number of child problems falling within the clinical range but also the number of child problems falling within the clinical ranges for most of the subscales were found. Higher levels of child behavior problems are associated with larger effect sizes due to the greater responsiveness of severely distressed parents coping with difficult to manage children (Chamberlain et al., 2008; Nowak & Heinrichs, 2008).

Table 3. Participants with Clinical Problems in the Regular Dutch Parenting Consultation and Primary Care Triple P Groups at Pre-test, Post-test, and Follow-up

	Regular Dutch Parenting Consultation SDQ (N = 42)			Primary Care Triple P SDQ (N = 87)		
	t0 N (%)	t1 N (%) Diff. t0-t1	t2 N (%) Diff. t0-t2	t0 N (%)	t1 N (%) Diff. t0-t1	t2 N (%) Diff. t0-t2
Emotional problems	15 (36%)	13 (31%)	12 (29%)	21 (24%)	16 (18%)	12 (14%)*
Behavioral problems	15 (36%)	9 (21%)*	6 (14%)*	28 (32%)	18 (21%)*	15 (17%)**
Hyperactivity	14 (33%)	8 (19%)	9 (21%)	33 (38%)	26 (30%)	25 (29%)*
Problems with peers	16 (38%)	10 (24%)*	11 (26%)	18 (21%)	14 (16%)	17 (20%)
Prosocial behavior	12 (29%)	7 (17%)	6 (14%)*	8 (9%)	5 (6%)	8 (9%)
Total difficulties	17 (41%)	10 (24%)*	7 (17%)**	21 (24%)	18 (21%)	17 (20%)**

* = $p < .05$; ** = $p < .01$; diff. = difference between t0-t1 and t0-t2.

4.4 Discussion

In this evaluation study, significant reductions in reported emotional and behavioral problems of children were found to occur and remain over time for both a regular Dutch parenting consultation group and a Primary Care Triple P group. For both groups, parenting styles were also found to have improved significantly at both post-test and follow-up, except for laxness in the regular Dutch parenting consultation group. The main goals of both the regular Dutch parenting consultation and the Primary Care Triple P groups were to produce reductions in the emotional and behavioral problems of children via improved parenting and these goals appear to have been reached. In both groups, substantial numbers of child problems that qualified as clinical were present at baseline but found to decrease significantly at post-test and follow-up. These results show parenting support provided in a primary care setting to be sufficient to diminish child problems that are normally treated in youth care or mental health settings. For the regular Dutch parenting consultation group, medium effects sizes were detected for parental over-reactivity and overall inadequate parenting. For the Triple P group, a large effect size was found for overall inadequate parenting, with medium to large effect sized for over-reactivity and a medium effect size for laxness. In addition, a medium effect size was found for overall parental sense of competence, and small to medium effect sizes for the subscales of parental satisfaction and efficacy.

When compared to the regular Dutch parenting consultation group, the Triple P group showed significantly less dysfunctional parenting styles (in laxness and overall inadequate parenting) and a higher total BPS score at both post-test and follow-up.

Parenting style and parenting skills clearly relate to child behavior (Baumrind, 1971; Janssens, 1994; Olson, Bates, Sandy, & Lanthier, 2000; Prinzie et al., 2003; Wolfradt, Hempel, & Miles, 2003). Lack of support, an authoritarian parenting style, and negative communication all correlate with higher child behavior problem scores. Similarly, parents with low self-efficacy tend to simply assume that they will not be successful at parenting, and therefore do not make the investment of time and energy in competent parenting that parents with higher levels of self-efficacy have been found to make. The result is parents who use more shouting and smacking (Donovan, Leavitt, & Walsh, 1990), and more problematic child behavior as a consequence of such parenting (e.g., Coie, 1996; Loeber & Farrington, 1998). Parents have also been found to feel less competent to the extent that their children have greater behavior problems (Coleman & Karraker, 2003), which emphasizes the importance of improved parenting skills and improved self-efficacy as part of any parenting program. Given the importance not only of improved parenting skills but also of improved parental self-efficacy, our expectation is that the behavior problems of the children in particularly the Primary Care Triple P group will further improve over time. Of course, new research is needed to confirm this possibility and the capacity of parents receiving Triple P care to become independent problem solvers (i.e., improve their capacity for self-regulation), which is one of the main tenets of the program.

Implications for future research

The results of the present study are promising for both regular Dutch primary care parenting programs and Triple P care. Further research is nevertheless necessary, including randomized controlled trials. Studies with longer follow-up times are also needed to investigate the associations between improved parenting styles and self-efficacy, and long-term reductions in child behavioral problems.

The regular Dutch parenting consultation programs should be studied more extensively. Effectiveness and efficacy studies have rarely been conducted, and integrity checks have yet to be integrated into the programs.

The parents of children with problems that qualify as clinical were clearly helped in both of the primary care groups studied here. Additional research should nevertheless be undertaken to develop more detailed selection criteria for inclusion in primary care parenting programs and the parenting/child problems that are best targeted by such programs.

Implications for policy and practice

The results of the present study show both regular Dutch primary care parenting programs and Primary Care Triple P to reduce the mild to moderate emotional and behavioral problems of the children studied here. The most important reason for implementation of the Triple P approach in the primary care setting in The Netherlands was for the provision of a more integrated, highly structured, well-documented, evidence-based parenting program across all Dutch primary care settings. While Primary Care Triple P is just one level of a multilevel program, and the other levels of

the Triple P program are currently being implemented in parts of The Netherlands, the regular Dutch primary care parenting programs were also found to produce clearly positive results, to improve parenting styles, and to reduce reported child emotional and behavior problems. Given that the Primary Care Triple P approach produced *better* results for parenting skills and parental feelings of self-efficacy, however, it is possible that the emotional and behavioral problems of the children may decrease even more in the long term and thereby make at least Primary Care Triple P the preferred program. Only time — and additional research — will tell.

In the present study, those child problems classified as clinical also clearly decreased as a result of parental involvement in one or the other of the primary care programs. Given that primary care provides less intense, less expensive, shorter and easier access youth care, the referral system for the parents of children with clinical-level emotional or behavioral problems should probably be inspected. It is possible, for example, that the help provided in a primary care setting is sufficient for at least some parents and at least some children.

In the present study, the regular Dutch parenting consultations were conducted mainly by professionals who are specialized in the provision of parenting support (i.e., the support of parents is their core occupation). In the Triple P group, the training was conducted by mostly nurses and social workers for whom parenting support is only *part* of their daily work (i.e., the support of parents is *not* their core occupation). Having said this, it can thus be concluded that a two-day training program such as the Primary Care Triple P for nurses and social workers, who were not specialized in parenting consultation, appears to be sufficient for the provision of effective and careful parental support that may even — in light of the more improved parenting skills in the Triple P group than in the regular Dutch parenting consultation group — produce better results in the long run.

Limitations

The present study has several limitations that should be noted. First, the results are based on self-report measures. Questionnaires were administered only to the parents of the children, and self-reports of parents can be biased. Second, the number of respondents at three month follow-up in particularly the regular Dutch parenting consultation group was quite small ($n = 26$). This makes it particularly difficult to draw conclusions concerning the maintenance of the effects for this group. Third, diverse methods and associated theories were used in the regular Dutch parenting consultation group, which makes it difficult to pinpoint the exact variables responsible for the effects that were found or — for that matter — not found. Fourth, the results of the comparisons for the two primary care parenting interventions must be treated as tentative due to the absence of a randomization of the respondents, objective inclusion/exclusion criteria for participation in the study, and also the extent of the pre-test differences in the background characteristics and baseline scores of the children in the two primary care interventions. The final limitation is the lack of precision in the exact number of contact occasions in the regular primary care Dutch parenting consultations.

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5 What are the results of Group and Standard Triple P for parents and children in the Dutch mental health care and youth care?*

Abstract

This study was part of an implementation trial of the Standard and Group Triple P (Positive Parenting Program) in the Netherlands. The study examined whether the Standard and Group Triple P interventions were effective in Dutch practice. In total, 298 parents were included in this study. Results indicate that the Triple P interventions are effective in reducing behavioral and emotional problems in children, dysfunctional parenting styles, improving parental competency, reducing depression, anxiety and stress in parents. Treatment effects are maintained after three and six months. Furthermore this study focused on the mediating effects of the interventions on parental depression, anxiety and stress. An increase in the feeling of parental competence, caused by the improvement in parenting behavior, turned out to be the mediating factor. It is important to stress this working mechanism in offering the intervention. This study supports the broader implementation of the Triple P intervention in the Netherlands.

5.1 Introduction

Several studies worldwide have shown that approximately 18% of all children experience behavioral or emotional problems at some point in their development (Sanders, Markie-Dadds, & Turner, 2003; Zubrick et al., 1995). Psychosocial problems in children are often divided in two parts: behavior problems (externalizing problems), such as aggressive or delinquent behavior, and emotional problems (internalizing problems, such as withdrawn behavior, physical complaints, anxiety, or depressive complaints. Other international studies have shown that 11–15% of children under 13 years of age experience significant mental health problems (Sawyer et al., 2000; Silburn et al., 1996; Zubrick et al., 1995). Those findings are in accordance with the findings in Dutch samples. For Dutch preschool and schoolchildren taken together (aged 0 to 12 years), research has shown that 5% of them experience severe emotional and behavioral problems (Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005).

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It is widely accepted that dysfunctional parenting practices are powerful predictors of children's mental health problems in general (Loeber, Green, Lahey, Frick, & McBurnett, 2000; Sanders et al., 2003). Coercive parent-child interactions are causally related to the development of conduct problems (Patterson, 1982; Patterson, Reid, & Dishion, 1992; Reid, Eddy, Fetrow, & Stoolmiller, 1999). Lack of support and authoritarian and negative communication correlate with higher scores of problem behavior in children. Specifically, a lack of warm positive relationship with parents, insecure attachment, harsh, inflexible, rigid or inconsistent discipline practices, inadequate supervision of and involvement with children, marital conflict and breakdown, and parental psychopathology increase the risk that children will develop major behavioral and emotional problems (e.g., Coie, 1996; Loeber & Farrington, 1998). Parenting programs have been developed to prepare parents for undertaking their role in raising children so that problem behavior can be prevented (Leung, Sanders, Leung, Mak, & Lau, 2003). Behavioral Family Interventions (BFI) based on Patterson's (1982) social learning theory have the strongest empirical evidence in reaching this aim. In a meta-analysis, BFI programs have been shown to be effective by creating large effect sizes in modifying children's behavior (Serketich & Dumas, 1996). One widely used parenting program is Triple P (Positive Parenting Program). Triple P is a form of behavioral family intervention based on social learning principles (e.g., Patterson, 1982). The program was developed by Sanders and colleagues at the Parenting and Family Support Center in the School of Psychology at the University of Queensland in Australia (Sanders et al., 2000). This evidence-based program was designed to prevent and offer treatment for mild and severe behavioral, emotional and developmental problems in children from birth to the age of 16 years, by means of enhancing the knowledge, skills and confidence of their parents. Triple P incorporates five levels of intervention of increasing strength for parents of children from birth to age 16. This tiered multi-level strategy recognizes that parents have different needs and desires regarding the type, intensity and mode of assistance they may require (Sanders et al., 2003). A central element in the program is the development of parents' capacity for self-regulation, which involves teaching skills to parents that enable them to become independent problem solvers. Self-regulation is a process whereby individuals are taught skills to modify their own behavior (Sanders et al., 2003).

In 2006 an implementation trial of the Triple P Positive Parenting Program was conducted in the Netherlands. The implementation was seen as important for two reasons. First, there was a need for a tiered continuum of interventions of increasing intensity, from universal prevention to intensive care for parents and their children. Second, there was a need for an evidence-based parenting intervention in the Netherlands. Although several parenting programs are available, little research has been conducted on the effect of those interventions. In a one-year period interventions of different levels of the Triple P program were implemented in two regions in the Netherlands. The objective of the implementation trial was to implement those interventions in two pilot regions and to prepare a scenario for a broad implementation. In this study, we focus on Level 4 from the Triple P program – an intensive individual

or group intervention. Level 4 intervention is indicated if the child has multiple behavioral problems in a variety of settings and there are clear deficits in parenting skills. This indicated preventive intervention targets high-risk individuals who are identified as having detectable problems, but who do not yet meet diagnostic criteria for a behavioral disorder.

If the parent want to have individual assistance and can commit to attending a ten-session program, the Standard Triple P program is appropriate. Group Triple P is appropriate as a universal (available to all parents) or selective (available to targeted groups of parents) prevention parenting support strategy; however, it is particularly useful as an early intervention strategy for parents of children with current behavioral problems. Standard Triple P is an individual ten-session program for parents. Group Triple P is an eight-session program conducted in groups of 10–12 parents with four 15- to 30-minute follow-up telephone sessions provided as additional support to the parents. Parents are taught a variety of child management skills, including; providing brief contingent attention following desirable behavior, how to arrange engaging activities in high-risk situations, how to use clear, calm instructions, logical consequences for misbehavior, planned ignoring, quiet time (non- exclusionary time-out), and time out. Parents are trained to apply these skills both at home and in the community. Specific strategies, such as planned activities training, are used to promote the generalization and maintenance of parenting skills across settings and over time (Sanders et al., 2003). This plan may involve the introduction of specific positive parenting strategies through discussion, modelling or presentation of segments from Every Parent's Survival Guide video. The professional can be a psychologist or a social worker.

5.2 Purposes of this study

Implementing an evidence-based intervention into real-world practice does not automatically mean that the intervention will also be effective in the adopting country. Cultural differences may exist. Another reason to evaluate the intervention in terms of outcomes is to convince practitioners to implement the intervention in the long term. Innovation is always difficult because of resistance to using a new program. When the intervention is shown to be effective, it will be a recommendation for other agencies. Evaluation on patient-level outcomes should be chosen based on which outcomes the intervention was designed to achieve: improving parenting skills and competences of the parents and decrease of behavior problems in children (Kilbourne, Neumann, Pincus, Bauer & Stall, 2007). Therefore we monitored parents in several Dutch mental health institutions and youth care institutions.

Externalizing child problems have an impact on the mental health of parents (Mash & Johnston, 1990; Prior, Smart, Sanson, & Pedlow, 1992). Parents are more stressed and have more feelings of incompetence in relation to a child with externalizing problems (Pelham et al., 1997), for example the demanding and obtrusive behavior

of children with ADHD (Byrne, DeWolfe, & Bawden, 1998; DuPaul, McGoey, Eckert, & VanBrakle, 2001). DeGarmo & colleagues (DeGarmo, Patterson, & Forgatch, 2004) developed a theoretical model concerning reciprocal causality in parent-child relations. In this model, changes in parenting may change the child behavior, and this may change parental depression, which will bring a change in parenting. In addition, several studies showed the positive relation between improving the parental feelings of competence and the reduction of mental health problems of parents (Odom, 1996; Silver, Heneghan, Bauman, & Stein, 2006). In this study the following research questions will be answered. First, we wanted to know whether the Standard and Group Triple P interventions were effective in practice, in Dutch mental health care agencies and youth care agencies. Second, we wanted to know what the effects were of the intervention on the mental health of parents and whether the reduction in child behavioral problems is a mediating factor in the reduction of parental psychopathology. Third, we examined whether feelings of competence were a mediating factor in the reduction of parental psychopathology.

5.3. Method

Participants

In 2006 and 2007, the Triple P Level 4 interventions were implemented in five agencies in the Netherlands. In total 298 parents were included in four samples. To be included in the samples, parents had to consider their child's behavior as (severe) problem behavior. In addition, parents had to be insecure or dissatisfied concerning their parenting skills regarding the target child. The age of the target children was between 7 and 8 years and more boys than girls were included. Virtually all the parents who completed the questionnaires were mothers. In Table 1 a description of the participants is presented.

Data collection

Parents were asked to participate in an evaluation study by staff of several youth and family care institutions who were trained to apply the Standard or Group Triple P. During a one-year period of recruitment, mothers as well as fathers could complete the questionnaires administered as part of the study. Because several agencies were involved and four different samples were taken, the designs of the samples differed in pre-test, post-test or/and follow-up test. In Figure 1, the various steps in the recruitment of the four samples are outlined. In one sample the Triple P intervention was compared with a control group. For the control group, parents at ten primary schools were asked to participate in this study. To be eligible for the study, all respondents had to have a clinical score (≥ 3.2) on the Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993). The assessments took place prior to the intervention (pre-test), and six months later (follow-up).

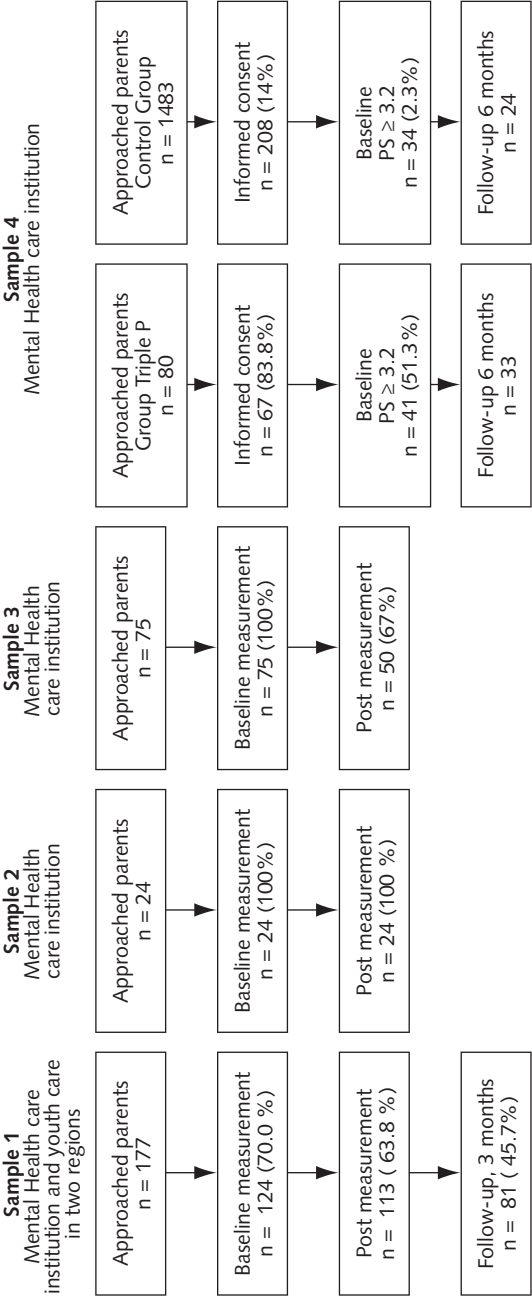
Sample 1. In this sample, parents were asked to participate in an evaluation study by staff of several youth and family care institutions who were trained to apply the Standard or Group Triple P. During a one-year period of recruitment, a total of 177 participants were approached and 124 (70%) parents agreed to participate. The parents were recruited in two regions in the Netherlands, in five institutions; two mental health institutions, two youth care institutions, and one special education school. Mothers as well as fathers could complete the questionnaires administered as part of the study. The questionnaires were administered immediately prior to intervention at T0 (pre-test), immediately after completion of the intervention at T1 (post-test), and three months following completion of the intervention at T2 (follow-up). After completion of the intervention (at post-test), 113 (or 63.8%) of the original 124 participants also completed the questionnaire. At the follow-up assessment, 81 (or 45.7%) of the original 124 participants completed the questionnaire.

Sample 2. In the second sample, data were collected during a one-year period in one mental health institution and 24 families were asked to participate in the study. Parents participated in Standard or Group Triple P. The assessments took place prior to the intervention (at pre-test) and immediately after completion of the intervention (post-test). At post-test, 24 (100%) of the original 24 parents also completed the questionnaires.

Sample 3. In the third sample, the effects on parenting and child problems were monitored at a regional mental health institute for children, named *Mental Health Care Children and Youth*, in a single-group, pre-test/post-test/ follow-up test. Parents who received the Group Triple P intervention were asked to complete a set of questionnaires. In a one-year period, 75 parents were asked to complete the questionnaires and 50 (67%) parents filled in the questionnaires at baseline and post-assessment.

Sample 4. In the fourth sample, a quasi-experimental study was conducted in the same mental health care institution for children as the third sample. In a five-month period in 2007 parents in two conditions were asked to participate in the study. In the experimental group parents followed the Group Triple P intervention. In the control group, parents at ten primary schools were asked to participate in this study. Three (33%) participating schools received an information meeting about parenting and child behavior problems, and were told to participate in the Group Triple P intervention after the six months follow-up assessment had taken place. To be eligible for the study, respondents had to have a clinical score (≥ 3.2) on the Parenting Scale (Arnold et al., 1993). The assessments took place prior to the intervention (pre-test), and six months later (follow-up). In the experimental group, 41 (51.3%) parents (of a total of 67) completed the questionnaires at pre-test and 33 (41.3%) parents at six months follow-up assessment. In the control group which consisted of 208 parents, 34 (2.3%) parents completed the set of questionnaires at pre-test, and 24 (1.6%) parents at six-month follow-up assessment.

Figure 1. Flow of Participants through the Study.



Measures

Family demographic data was collected using the *Family Background Questionnaire* (FBQ). The FBQ is used in several Triple P studies (Zubrick et al., 1995). It includes the child's age and gender; the parents' marital status, relationship to the child, educational background and current employment status, family composition, and the parents' income and level of government support.

The *Strengths and Difficulties Questionnaire* (SDQ; Goodman, 1997) is a 25-item behavioral screening questionnaire measuring parents' perceptions of pro-social and difficult behaviors in children aged 3 to 16 years. Five scales are computed by summing the five items for each scale (emotional problems, conduct problems, inattention/hyperactivity problems, peer problems and pro-social behavior), and a total difficulties score can be calculated by summing the scores on the scales, except for the pro-social behavior scale. Scores from the SDQ have been found to discriminate well between low- and high-risk samples (Goodman, 1997). In this study, the Dutch validated parent version is used (Muris, Meesters & van den Berg, 2003). The internal consistency on the total difficulties is good (.80), but on the subscales rather low (ranging from .55 to .70).

The *Parenting Scale* (PS; Arnold et al., 1993) is a 30-item questionnaire that measures three dysfunctional discipline styles in parents: laxness (permissive discipline), over-reactivity (authoritarian discipline, displays of anger, meanness, and irritability), and verbosity (overly long reprimands or reliance on talking). The scale has adequate internal consistency for the total score ($\alpha = .84$), laxness ($\alpha = .83$) and over-reactivity scales ($\alpha = .82$), and modest internal consistency for the verbosity scale ($\alpha = .63$). It has good test-retest reliability (across a two-week interval, $r = .84, .83, .82$ and $.79$ respectively); and has been found to discriminate between parents of children referred to clinical settings and children in the general population.

The *Depression Anxiety Stress Scales* (DASS; Lovibond & Lovibond, 1995) is a 42-item questionnaire that assesses symptoms of depression, anxiety, and stress in adults. The scale has high reliability for the Depression ($\alpha = .91$), Anxiety ($\alpha = .81$) and Stress ($\alpha = .89$) scales, together with good discriminant and concurrent validity. The internal consistency of the DASS subscales was high, with Cronbach's alphas of 0.94, 0.88, and 0.93 for depression, anxiety, and stress respectively.

The *Parenting Sense of Competence* (PSOC; Gibaud-Wallston & Wandersman, 1978) was only administered in Samples 1 and 4. The PSOC is a 16-item questionnaire and has been used to determine to what extent parents feel themselves competent in parenting their children. Parents indicate to what degree propositions concerning parenthood apply to them. The answer possibilities vary from 1 (strongly disagree) to 6 (strongly agree). The questionnaire has been subdivided into two subscales, which are: satisfaction concerning own efficacy (satisfaction) ($\alpha = .75$) and effectiveness at solving problems (efficacy) ($\alpha = .76$). The Satisfaction Scale refers to the degree to which the parent likes the parenting role. The Efficacy Scale refers to the degree to which the parent feels competent in the parenting role. A total score can be calculated which has an adequate internal consistency ($\alpha = .79$) (Johnston & Mash, 1989).

Data analysis

For the samples, paired t-tests were used to analyze the differences at pre-, post- and follow-up assessment in parenting and behavioral problems in children. In addition, we calculated individual standardized effect sizes to obtain an indication of the magnitude of the effects. Standardized effect sizes d are commonly calculated as: $d = (M1 - M0) / Sd0$; where, $M1$ and $M0$ are the means at post- and pre-test, and $Sd0$ is the pre-test standard deviation of measures of parenting and behavioral problems in children. In Sample 4, the only study that included a control condition, we also calculated incremental standardized effect sizes, i.e. $\Delta d = dE - dC$. These incremental standardized effect sizes show by how many standard units the experimental group has been removed from the control group. An effect size of 0.50 shows the mean of the post-test to be half a standard deviation larger than the mean of the pre-test. According to Lipsey and Wilson (1993), moreover, an effect size of .56 to 1.2 can be interpreted as a large effect, an effect size of .33 to .55 as moderate, and an effect size of 0 to .32 as small. In Sample 1, all missing values were imputed. In order to replace the missing values, we used the regression imputation procedure as implemented in Stata version 9.1 (StataCorp, 2005).

Linear regression analyses according to the model of Baron and Kenny (1986) were conducted to test the mediating factors. To test a mediating hypothesis, three conditions must hold: first, the independent variable must affect the mediator; second, the independent variable must be shown to affect the dependent variable; and third, the mediator must affect the dependent variable. When, after the introduction of the mediator, the independent variable has no or little effect on the dependent variable the mediator is held to be in the predicted direction.

5.4 Results

Effects of the intervention on behavior problems in children and parenting

The effect sizes of the four samples on the SDQ, PS and PSOC of the Standard and Group Triple P at pre-test, post-test, and follow-up are presented in Table 2.

Table 2. Effects on Child's Behavior Problems, Parenting styles and parental feelings of competency

	Sample 1 (n = 124)		Sample 2 (n = 24)	Sample 3 (n = 50)	Sample 4 (n=57)		
	Effect size Pre-post	Effect size Pre-follow-up	Effect size Pre-post	Effect size Pre-post	Effect size Pre-post Triple P	Effect size Pre-post control group	Differences between Triple P and control group pre-post
SDQ							
Emotional problems	0.24**	0.35**	0.53**	0.33***	0.34*	-0.25	.59*
Behavioral problems	0.48**	0.49**	0.88**	0.62***	0.46*	-0.31	.77*
Hyperactivity	0.27**	0.18**	0.47**	0.26**	0.17	0.07	.10
Peers	0.20**	0.19**	0.19	0.25*	0.33	-0.50*	.83**
Total difficulties	0.45**	0.45**	0.91**	0.51***	0.46*	-0.28	.74**
Prosocial behavior	0.26**	0.24**	0.21	0.44***	0.11	-0.02	.13
PS							
Laxness	0.45**	0.60**	0.69**	0.46***	1.01*	0.24	.78**
Over-reactivity	0.58**	0.62**	0.78**	0.82***	0.89*	0.14	.75*
Verbosity	0.69**	0.64**	0.99**	1.17***	1.12*	0.27	.85*
Total score	0.71**	0.79**	1.09**	0.97***	1.45*	0.55	.90**
PSOC							
Satisfaction	0.43**	0.59**	-	0.61***	0.46*	-0.21	.67*
Efficacy	0.38**	0.68**	-	0.47***	1.13*	-0.9	1.22***
Total score	0.50**	0.75**	-	0.60***	0.84*	-0.18	1.02**

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

Sample 1. In the first sample (n=124) the Standard and Group Triple P interventions demonstrated small to medium effect sizes on all scores of the SDQ at post and follow-up assessment. The Triple P group showed medium-size to large reductions in the dysfunctional parenting styles, and medium to large effect sizes in the sense of competency scale at post assessment. At three-months follow-up assessment, further reductions in dysfunctional parenting styles and improvement of the competency scale were found.

Sample 2. In the second sample (n=24) we found medium to large effect sizes on emotional and behavioral problems, on hyperactivity and on the total difficulties score

of the SDQ. Furthermore we found large effect sizes in dysfunctional parenting styles. *Sample 3.* In the third sample (n=50) we found medium to large effect sizes on emotional and behavioral problems, hyperactivity, pro-social behavior and total difficulties of the SDQ. On the parenting styles we found medium to large effect sizes. On the Parenting Scale of Competence we found medium to large effect sizes. *Sample 4.* The Triple P group (n=33) demonstrated medium effect sizes on emotional and behavioral problems in children, and on total difficulties of the SDQ at post-assessment six months after the intervention. Large effect sizes were found on all scales of the Parenting Scale. On the Parenting Sense of Competence Scale, a robust, large effect size was found on the Efficacy scale ($d = 1.13$), and large effect sizes were also found on satisfaction and the total score of the PSOC. In the control group (n = 33), one significant reduction was found, which was in problems with peers. There were significant differences between the Triple P group and the Control group on emotional and behavioral problems in children, the problems with peers and the total difficulties on the SDQ in favor of the Triple P group. Furthermore, the results showed a difference between conditions in all scales of the Parenting Scale in favor of the Triple P group. There were also differences between the conditions on parent's satisfaction and feelings of own efficacy after six months, in favor of the Triple P group.

Effects on Mental Health of Parents

In sample 1 the interventions demonstrated small to medium effect sizes in reductions in depression, anxiety and stress of parents at post and follow-up assessment. In sample 2 we found medium to large effect sizes on the parenting styles, and medium effect sizes in depression, anxiety and stress. In sample 3 we found medium effect sizes on parental depression and stress. The results are presented in Table 3.

Table 3. Effects on Mental Health of Parents

	Sample 1 (n = 124)		Sample 2 (n = 24)	Sample 3 (n = 50)
	Effect size Pre-post	Effect-size pre-FU	Effect size Pre-post	Effect size Pre-post
DASS				
Depression	0.24**	0.42**	0.32**	0.39**
Anxiety	0.17*	0.25**	0.25*	0.23
Stress	0.44**	0.50**	0.62**	0.39***

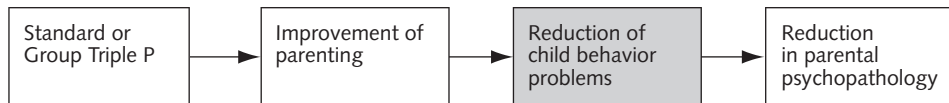
* $p < .05$; ** $p < .01$; *** $p < .001$.

Is the reduction in child behavior problems a mediating factor in the reduction of parental psychopathology?

For sample 1 only, we analyzed the mediating factors according to the procedure described by Baron and Kenny (1986). Three conditions must be confirmed according to this procedure. The first condition is that the improvement of parenting must affect

the reduction of child behavior problems. The second condition is that the improvement of parenting must be shown to affect parental psychopathology. Finally, the third condition is that the mediator 'Reduction of child behavior problems' must affect the reduction in parental psychopathology. This results in the following model (Figure 2):

Figure 2. Model of Mediating Factor: Reduction of Child Behavior Problems



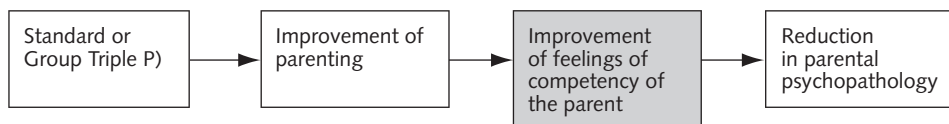
Standard or Group Triple P
Improvement of parenting
Reduction of child behavior problems
Reduction in parental psychopathology.

The first condition was confirmed. We found that the improvement in parenting styles effects improvement in child behavior ($\beta = .33$; $p < 0.01$, in Table 4). The second condition was also confirmed. The results show that improvement in parenting styles effects a reduction in depression ($\beta = .51$; $p < 0.01$), anxiety ($\beta = .35$; $p < 0.01$) and stress ($\beta = .46$; $p < 0.01$). The third condition, that the mediator must affect the dependent variable, was not confirmed in this study. After including the mediator 'child behavior' in the analysis, we found roughly the same effects of the parenting styles on parental psychopathology ($\beta = .51$; $\beta = .34$, $\beta = .42$ for depression, anxiety and stress, respectively). The effect of the improvement in parenting styles on parental psychopathology was not mediated by the improvement of child behavioral problems.

Is the improvement of feelings of competency of parents a mediating factor in the reduction of parental psychopathology?

The first condition is that the improvement of parenting must affect the improvement of feelings of competency of the parent. The second condition is that the improvement of parenting must be shown to affect parental psychopathology. Finally, the third condition is that the mediator 'Improvement of feelings of competency of the parent' must affect the reduction in parental psychopathology. This results in the following model:

Figure 3. Model of Mediating Factor: Improvement of Feelings of Competency of the Parent



The first condition was confirmed. We found that the improvement in parenting styles effects improvement in feelings of competency of the parent ($\beta = .58$; $p < 0.01$). The second condition was also met as described above. The effect of the second

mediator 'feelings of competency' showed a significant effect on depression ($\beta = .32$; $p < 0.01$), anxiety ($\beta = .19$; $p = 0.61$) and stress ($\beta = .21$; $p < 0.01$). This means that the third condition was also confirmed. This result means that improvement of the feelings of competency of the parent plays a mediating role between the improvement of parenting styles and the reduction of parental psychopathology. The effects of the mediators on parental psychopathology are presented in table 4.

Table 4. Effects of Mediator's Child Behavior and Parental Feelings of Competence on Parental Psychopathology (conditions 1, 2 and 3).

Independent variable Condition 1		Mediator	β		R^2	
Parenting styles		Child behavior	.33**		.11	
		Competency of parents	.58**		.33	
Dependent variable	Independent variable	Before addition of the mediators	After addition of mediator child behavior problems condition 2		After addition of mediator feelings of competence condition 3	
Reduction in parental psychopathology	Improvement of parenting styles	β	β	R^2	β	$R^2 =$
Depression	Improvement of parenting styles	.51**	.51**	.26	.32**	.34
			.003 (improvement of mediator)		.33** (improvement of mediator)	
Anxiety	Improvement of parenting styles	.35**	.34**	.12	.19	.17
			.03 (improvement of mediator)		.27** (improvement of mediator)	
Stress	Improvement of parenting styles	.46**	.42**	.23	.21*	.34
			.13 (improvement of mediator)		.44** (improvement of mediator)	

* $p < .05$; ** $p < .01$.

5.5 Discussion

Main findings

Are the Standard and Group Triple P interventions effective in Dutch mental health care agencies and youth care agencies?

The first aim of this study was to investigate the effects of the Standard and Group Triple P interventions (Level 4) on children's behavior problems and parenting in the Netherlands. Our data suggest that the Standard and Group Triple P interventions are effective in reducing problems in children and dysfunctional parenting styles, and in improving parental efficacy. We have evidence that the treatment effects are maintained after three and six months. These conclusions are tentative under the condition that evaluations with a pre-, post-, follow-up test design were used. However, the results in this study are similar to the results of international studies on the Triple P Level 4 interventions.

Do parental depression, anxiety and stress decrease after the Triple P intervention?

This study shows improvements in parental psychopathology (depression, anxiety and stress), which means that the second hypothesis can be affirmed. In this study we find a significant reduction in depression, anxiety and stress in parents in the Triple P group.

Are the 'reductions in child behavioral problems' and the 'improvement in parental psychopathology' mediating factors in the reduction of parental psychopathology?

Although international studies indicate that reduction in emotional and behavioral problems in children is a mediating factor in reducing parental psychopathology, the results of this study can not affirm this. The assumption that parental feelings of competence are a mediating factor in the reduction of parental psychopathology is affirmed in this study. An increase in the feeling of parental competence, caused by the improvement in parenting behavior, turned out to be the mediating factor.

Implications for Practice

In Dutch mental health and youth care institutions, few parenting interventions were available for parents of children with severe behavioral and emotional problems. Parenting support was often integrated into the therapy for families, such as the system-therapy approach or psycho-education. The Standard and Group Triple P is indicated for parents of children with severe behavioral and emotional problems. With the Triple P (Positive Parenting Program) a structured, time-limited, theory- and evidence-based program was introduced in the Netherlands. The results in the samples indicate that the intervention is also effective for Dutch parents and is an important additional intervention for those institutions.

Because of the positive outcomes on depression, anxiety and stress in parents in the samples and in international studies of Triple P, it can be worthwhile to apply the Standard and Group Triple P intervention specifically for parents with those

complaints. At the present time the interventions are used for parents of children with severe problems. Consequently, parents with complaints of depression, anxiety and stress can be recruited specifically for using the Triple P intervention. Educating those depressed, anxious or stressed parents with specific information about the relation between their feelings and parenting problems may possibly be able to reduce parental psychopathology. In turn, this can diminish psychological problems in children, because children of parents with a mental illness are at risk of developing (severe) psycho-social problems themselves. Research indicates a positive relation between parental psychopathology and psycho-social problems in children (Rutter, Silberg, O'Connor, & Siminoff, 1999). National and international studies have confirmed that children of parents with a mental illness, such as depression and anxiety, are at risk of developing behavioral and psychiatric problems (Bijl, Cuijpers, & Smit, 2002; van Doesum, Hosman, Riksen-Walraven, & Hoefnagels, 2007). In the Netherlands, 38.5% of all children are at risk, which means 1.6 million children (Boel, Smit, Bohlmeijer, & van Sambeek, 2001). Maternal depression are at risk to have a negative influence on the early mother-child interaction (Mäntymaa, Puura, Luoma, Salmelin, & Tamminen, 2004). Depressed mothers may be more demanding and non-responsive, and are at risk in not meeting the needs of the child (Esser et al., 1993; Schaffer, 1996). Research indicates that this possible neglect can result in social-emotional problems in children. Several studies have shown a positive relation between the degree of anxiety of the mother and the degree of anxious behavior in her child (Muris, Steerneman, Merckelbach, & Meesters, 1996; Turner, Beidel, Roberson-Nay, & Tervo, 2003).

The result of one sample in this study indicates that feelings of competency can be a mediating factor in preventing parental psychopathology. In Triple P, parental competence is a central skill. It is recommended that practitioners and trainers give special attention to this skill when offering parents the intervention, and it is important to stress this working mechanism in the training courses for professionals.

Study Limitations and Future Directions

These studies have several limitations. First, no control group was used in three of the samples, and in all four samples the participants were not randomly allocated to the intervention, so the possibility that the results are caused by something other than the Triple P intervention cannot be ruled out. However, because of the similarity of results to international studies on Triple P in which control groups were used, it is plausible that the effects in these samples result from the Triple P intervention.

Second, because both parenting styles and parental psychopathology were measured in the same period, no causal relation can be given, only a correlation. Longitudinal research is needed to assess the causality of the assumed relation between the variables (Brown, 1993; Brown & Liao, 1999; West, Aiken, & Todd, 1993).

Future studies should preferably be conducted as a randomized controlled trial in the Netherlands, over longer follow-up times. It is a well-known phenomenon that the

duration and costs are high for studies with long follow-up times, but their advantage is that they also raise knowledge of the efficacy and effectiveness of parenting programs.

The theoretical model used in this study assumed causality between the variables and the mediating factors. However, because the assessments took place in the same period we cannot be confident of this assumption. To examine the causality of the relation between parenting styles and parental psychopathology, longitudinal research is needed.

It would be interesting to conduct more research into the effects of parenting programs on parental psychopathology, because the impact of parental mental illnesses on the psychological wellbeing of children is enormous. More research on this topic is needed to discover whether there are differences between mental disorders and depending on the severity of the disorder, and what the impact of the mediators is. As has been said, longitudinal research is needed to achieve this aim. In summary, this study offers preliminary evidence that Standard and Group Triple P is an effective intervention in the Netherlands. The fact that the intervention works very well for parents with depression, anxiety and stress makes it an important additional intervention for improving the wellbeing of parents and their children. This study was part of an implementation trial in the Netherlands, and supports the broader implementation and the positive experiences of the professionals concerning the program.

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6 How to implement a multilevel program in another country?*

Abstract

In this article, we describe the successful implementation process of the multilevel Triple P-program using the REP framework (Kilbourne et al., 2007). We then present the adaptations we made in this framework. In doing this, a practical framework for implementing evidence-based *multilevel* programs in another country was developed, which may be of interest for other countries that want to implement a multilevel intervention program. Furthermore, we also evaluated the implementation trial by a process evaluation. Finally, we discuss the adaptation of the REP framework for a multilevel program, the main success factors of the implementation trial to the Triple P program, and future research.

6.1 Introduction

Internationally effective interventions are often implemented in other countries. A reason to implement foreign evidence-based interventions is that no such intervention is available in the adopting country. Another reason is that implementing extensively evaluated foreign interventions is relatively inexpensive, easily accessible, and convenient.

In 2006 and 2007, an implementation trial of the multilevel Triple-Positive Parenting Program was executed in The Netherlands, for the following reasons. First, there was a need for an evidence-based parenting intervention. Although several parenting programs were available, most of them were not evidence based. Second, there was a need for a tiered continuum of interventions of increasing intensity, from universal prevention to intensively care for parents and their children.

The Triple P-Positive Parenting Program is a behavioral family intervention (Sanders, Markie-Dadds, Tully & Bor, 2000; Sanders, Turner & Markie-Dadds, 2002; Sanders, Markie-Dadds & Turner 2003). Specific for the program is the multilevel approach of five intervention levels. The implementation trial in the Netherlands was executed successfully. In this trial, 79 professionals followed a training course on level 2/3 or 4 of Triple P. Both parents and professionals were satisfied with the quality and the content of the Triple P program. The multilevel approach of the program improved the collaboration between the participating institutions. Two years later, in January 2009, the program was implemented in 17 municipals, and 1840 professionals have been trained in Triple P. In 18 other municipals, preparations are being made to implement the program in 2009

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onwards, and 6 other municipals and 4 provinces are interested in the program. Since July 1996, Triple P has been widely disseminated in many countries: Australia, New Zealand, England, Scotland, Germany, Switzerland, Hong Kong, Singapore, Japan, the United States, Canada, Iran, and Turkey. Since 2006, the Netherlands and Belgium have joined in. Evidence supporting the effectiveness and efficacy of the Triple P program is available from studies conducted in most of those countries. The results of meta-analyses (De Graaf, Speetjens, Smit, de Wolff, & Tavecchio, 2008a, 2008b; Nowak & Heinrichs, 2008) indicated that the Triple P interventions reduced disruptive behaviors in children, reduced dysfunctional parenting styles in parents, and improved parental competency. These effects were maintained well through time. Although much is known about the efficacy and effectiveness of the multilevel program, much less is known about the implementation of the program in those countries. Implementing a multilevel program is a very complex process. The different interventions need to be embedded in the different organizations in youth health care, social work, education, youth care and mental health care, implying different cultures and financial structures. From (inter)national research concerning dissemination and implementation, knowledge is available of the steps that should be taken in implementing an innovation and of possible promoting factors and barriers of implementation (Glaser, Abelson & Garrison, 1983; Grol & Wensing, 1991; Rogers, 1995). A structured implementation of an innovation increases the prospects for a successful implementation. No effective strategy for adopting and implementing an evidence-based multilevel program from one country to another was available. So, in the implementation trial of the Triple P program, we applied the effective "Replicating Effective Programs" (REP) framework of Kilbourne, Neumann, Pincus, Bauer, and Stall (2007). REP provides a roadmap for implementing evidence-based interventions into community-based settings. The effectiveness of this framework has been empirically studied in a randomized controlled trial (Kelly et al., 2000; Richardson et al., 2004). According to this framework, the implementation process is divided into four phases: preconditions, preimplementation, implementation, and maintenance and evolution. The attraction of this framework is that it presents a practical guideline for the implementation and the four phases are described in detail.

We applied the REP framework in the implementation trial of the multilevel Triple P-program. We adapted the framework by adding or deleting elements in it to make it suitable for a multilevel intervention program. In this article, we describe the implementation process of the multilevel Triple P-program using the REP framework. We then present the adaptations we made in this framework. In doing this, a practical framework for implementing evidence-based *multilevel* programs in another country was developed, which may be of interest for other countries that want to implement a multilevel intervention program. Furthermore, we also evaluated the implementation trial by a process evaluation. We shortly present the process evaluation studies and the results. Finally, we will discuss the adaptation of the REP-framework for a multilevel program, the main success factors of the implementation trial to the Triple P program, and future research.

6.2 The multilevel Triple P-Positive Parenting Program

Triple P aims to enhance family protective factors and to reduce risk factors associated with severe behavioral and emotional problems in children 0 – 16 years old. The intervention system aims to help parents to develop a safe, nurturing environment, and to promote positive, caring relationships with their children, and to develop effective, nonviolent management strategies for dealing with a variety of childhood and adolescent behavioral and developmental issues (Sanders et al., 2000; Sanders & Turner, 2005). The Triple P system is based on the principle of sufficiency. There are differences in the severity of problems experienced, breadth of knowledge, motivation, access to support, and additional family stress (Sanders & Turner, 2005). Specific for the program is the multilevel approach of five intervention levels. Thereby, a chain of parenting support is created to advise parents with different problems. The Triple P program has existed for 30 years and was developed by Matthew R. Sanders, professor of clinical psychology and director of the The Parenting and Family Support Centre at the University of Queensland. In this 30-year period, the program has been further developed and extended with extra modules for parents of children with specific problems. Level 1, a universal parent information strategy, provides all interested parents with access to useful information about parenting through a coordinated promotional campaign, using print and electronic media, which demonstrates specific parenting strategies. Level 2 is a brief, one to two sessions of primary health care intervention, providing early anticipatory developmental guidance to parents of children with mild behavior difficulties or developmental issues. Level 3, a four-session intervention, targets children with mild-to-moderate behavior difficulties, and includes active skills training for parents. Level 4 is an intensive eight- to ten-session individual, group or self-directed parent training program for children with more severe behavioral difficulties. Level 5 is an enhanced behavioral family intervention program for families where child behavior problems persist or where parenting difficulties are complicated by other sources of family distress. For the implementation trial in The Netherlands, the interventions on levels 1, 2, 3, and 4 were selected.

6.3 Situation before implementation

Before the implementation of the Triple P-program, in 2005, several programs had been developed in the Netherlands in the field of parenting support. There were, however, a number of problems with these programs. First, although the demand for parenting programs is high and various initiatives were undertaken, no (prevention) programs — apart from Families First — were as yet developed for parents of children with emotional and behavioral problems. The available programs were primarily aimed at either the parental skills for supporting the normal development of children, or — in the case of severe problems — at the clinical treatment. But precisely in the area in between, i.e., the prevention of (severe) emotional and behavioral problems, few developments had been made. Second, in most regions, an integrated approach

often did not exist. Although parenting support programs are being offered by some local organizations, there is ample room for improvement in terms of overall guidance of and connectivity between the services. The need for an integrated approach of effective parenting support services was great at that time (Berger and Menger, 2002; Bakker et al, 2001). The multilevel Triple P-program fitted in well with the increasing collaboration between child health care and the basic services and the projects of the Union of Dutch Cities (VNG) in the framework of an integrated child policy strategy. A great deal of attention was devoted on regional and local levels to a more integrated parenting support offer. This issue was high on the agenda of the organizations involved: the municipal health services, consultation agencies, education authorities, mental health services (prevention units), and welfare services for children. The fact that other more generic preventive programs had already been developed in the Netherlands was considered in the implementation, as it builds on the results of the program Parenting Support & Development Stimulation in the community (O&O), Communities that Care (CtC), and other programs. O&O targets parenting problems in general and CtC is aimed at community-oriented strategies for addressing general problem behavior in (high-risk) teenagers aged 12+ (e.g., drug-related public nuisance, aggressive behavior, etc.). Triple P differs from O&O and CtC in that it aims specifically to provide parenting support in order to prevent emotional and behavioral problems in children and offers support on individual (family) level.

6.4 The REP framework

The REP framework was developed by the U.S. Centers for Disease Control and Prevention (CDC) to package and disseminate HIV behavioral and treatment interventions for implementation in community-based service settings, notably AIDS service organizations (2006). The aim of the REP framework is to close the gap between research and practice. It offers a framework that tries to “achieve a balance between adequate fidelity to the intervention and accommodating differences across organizations to maximize the effectiveness of the intervention” (Kilbourne et al., 2007). Because few interventions were successfully disseminated into nonacademic-affiliated organizations, an effective strategy for implementing clinical and health services interventions was developed. The concept underlying the REP packaging process derives from action anthropology (Tax, 1958) and principles of health promotion (Green & Kreuter, 1991). The underlying theories of the REP framework are Diffusion of Innovation (Rogers, 1995) and Social Learning Theory (Bandura, 1977). The framework is divided into four phases (Kraft, 2000): preconditions, preimplementation, implementation, and maintenance & evolution. These are well-known steps in the implementation-process. For a full description of the framework and the underlying theories, we refer to Kilbourne and colleagues (2007). They described “the use of the REP framework and implementation protocol to prepare effective health services interventions for implementation in community-based settings.”

6.5 Description of the implementation trial in the Netherlands

In table 1, an overview is given of the implementation steps according to the REP model (Kilbourne et al., 2007) and activities in implementing the multilevel Triple P program.

Table 1. The application of the REP model to implement a multilevel program in another country.

Phases	Main steps in original REP model	Application of REP- model for a multilevel program	Activities in implementing the multilevel program	Responsibility
Preconditions	Identify need		- identify at-risk population	Researchers, experts, policy makers
	Identify effectiveness of the program		- identify program tested in completed randomized controlled studies	Researchers
	Identify barriers		- organizational needs' assessment, care as usual, collaboration between organizations - determinants – analyze	Researchers, experts, staff members
		Identify cultural transferability	- identify cultural differences in delivery services, target population, health care system	Researchers, experts
		Organize national team to lead the implementation	- make a national steering team of experts, researchers, policymakers, managers from institutes	Researchers, experts
		Seek collaboration with the international owners	- make agreements for implementation trial	International owners and national team
Preimplementation	Draft package		- translation of resources for clients - make a toolkit	International owners and national team
	Community working group	Organize local project group for implementation trial	- appoint local coordinator to stimulate collaboration between organization - make a local implementation plan - analyze the pros and cons of innovation	National team and local project group
	Pilot test package			

Phases	Main steps in original REP model	Application of REP- model for a multilevel program	Activities in implementing the multilevel program	Responsibility
	Orientation		<ul style="list-style-type: none"> - identify eligible organizations - approach strategies on local level - logistics of dissemination - kick-off meeting, package dissemination 	Local project group, local coordinator, national team
		Stimulate collaboration with local institutes	<ul style="list-style-type: none"> - make juridical agreements with participating organizations - make agreements for continuation after implementation trial 	national team, local coordinator, local coordinator, local stakeholders
Implementation trial	Training	Training and accreditation	<ul style="list-style-type: none"> - organization training professionals, including supervisors/ managers within organization 	Trainers, national implementation team
	Technical assistance			
	Evaluation		<ul style="list-style-type: none"> - process evaluation - program fidelity - collaboration between organizations - patient outcomes - return on investment 	Independent researchers
	Ongoing support		<ul style="list-style-type: none"> - continue national team - site visits - peer support and supervision 	National team, local coordinator
	Feedback and refinement		<ul style="list-style-type: none"> - Analyze data, inform sustainability - Refine package 	Researchers, national team
Maintenance and Evolution	Organizational, financial changes		<ul style="list-style-type: none"> - National team advises on sustainability strategies - Develop business case for intervention and REP process 	Researchers, national team
	National dissemination		<ul style="list-style-type: none"> - refine business case: return on investment - make a national plan - make a format for <i>local</i> implementation 	Researchers, national team
	Recustomize delivery as need arises		<ul style="list-style-type: none"> - Continue refine package 	Researchers, national team

Preconditions

Identify need

Before the actual implementation of the Triple P interventions, we identified the need for a new program for an at-risk population. Scientists, policy makers, and experts in the field of parenting collaborated and combined their knowledge of behavior and emotional problems in children and the value of the addition of a new parenting program in the Netherlands compared to care as usual. It is important to weigh the pros and cons against each other before adopting a new program. It was concluded that an evidence-based integrated parenting program was needed in the Netherlands.

Identify effectiveness of the program

The next step was to assess the level of evidence and grade of recommendation for adoption. The recommendation to adopt a new intervention is strongest when the intervention has been proven to be more effective than the existing interventions or when the costs of the new intervention are lower than the existing intervention (Laupacis et al., 1992; Cuijpers, De Graaf & Bolhmeijer, 2006). Worldwide, many studies have been conducted on Triple P. In 2007, 55 efficacy and effectiveness studies had been conducted on a form of Triple P. In general, it was concluded that the Triple P program showed that parenting skills training used in Triple P produce predictable decreases in child behavior problems, which have typically been maintained over time (Sanders, 2003).

Identify barriers

Before starting an implementation trial, information should be collected to know whether the program is feasible in local settings, whether it is an addition to the care as usual and gather information about the potential barriers. The implementation process can be influenced by many factors and cannot be discussed in one theory (Fleuren, Wiefferink & Paulussen, 2002; Fleuren & Paulussen, 2004). We assessed the characteristics of the five following determinants that may influence the implementation: the social-political environment, the organization, the professional, and the innovation, and implementation strategies (Fleuren et al., 2002). We interviewed experts, managers, and professionals, and assessed the implementation factors by questionnaires among managers and professionals.

Determinants that influenced the implementation trial of the Triple P program

- Social-political environment: degree of collaboration between organizations, involvement of policymakers at the start, national policy in parenting.
- Organization: commitment in the organization, attitude of the manager, time to work with the new program, fit between organization and innovation.
- Professional: self-efficacy, enthusiasm, experiences in parenting.
- Innovation: quality and content of the innovation: training courses, resources, structure of the program, evidence-based character, multilevel approach
- Implementation strategies: communication, availability resources, involvement in research, coordination of the implementation.

Source: questionnaires and interviews

In general, it was found that most determinants were judged positive at the start of the program, and we decided to conduct an implementation trial.

Identify cultural transferability

Identification of cultural transferability is necessary because fundamental differences can arise. We consulted a national expert group, in which experts from practice, scientists, and policymakers were represented. The contrast between the professional delivery services (expertise, training, resources, etc.), the target population (demographic characteristics, risk status), and the health care system (financing system, the costs for patients or care receivers, alternative interventions available) needs to be examined (Cuijpers et al., 2006). Because Triple P had already successfully been implemented in other comparable European countries, e.g., Germany, England, and Switzerland, and no great contrast was found, we concluded that the Triple P program was transferable to the Dutch situation.

Organize national team to lead the implementation trial

In the REP model, this team is called the Community Working Group (CWG), in which the comprehensive definition of stakeholders based on the Pincus multilevel 6-P framework was made (Pincus, Hough, Houtsinger, Rollman & Frank, 2003). We installed a national project team that consisted of representatives from research, practice, and experts in the field.

Seek collaboration with the international owners

We decided to seek contact with the Australian owner. The owner of the program is the University of Queensland. They developed the core program and are still continuing with developing and researching additional modules for the program. The organization *Triple P International* (TPI) is responsible for the international dissemination of the program (e.g., organization of training courses, distribution of manuals for

practitioners, and workbooks for parents). An official agreement needed to be written and signed. Collaboration with other countries needs time, because of language and culture differences, and long-distance communication.

Draft package

The final precondition step is to translate the resources and create an implementation toolkit. In this toolkit are specific details regarding the intervention, as well as operationalized options for adapting delivery of intervention core elements to local organizations in a way that does not compromise the intervention's core elements (Kilbourne et al., 2007). In the Triple P implementation trial, the toolkit consisted of a fact sheet with the core elements described, the translated resources for professionals, and a flow chart for implementation.

Closure

This phase is closed with a final choice of a program, an official juridical agreement with the international owners of the program, and the identification of a national team to lead the implementation.

Preimplementation

Local project groups were arranged with representatives of the local organizations (managers and professionals), researchers, local policy makers, and parenting experts functioning at a national level. A local coordinator to stimulate and support the collaboration between organizations turned out to be crucial for the success of the implementation. The members of this project group met regularly with the aim of organizing the local implementation. Again, a discussion of the addition of a new parenting program was held (the pros and cons). Local implementation plans were made with a description of the role and tasks of each organization.

Coordination

Because the Triple P program is multileveled and many organizations are involved in delivering the different interventions, it became crucial that a regional coordinator is selected as “puller” of the local implementation of the program. A local coordinator is essential for the success of the implementation. It is necessary to appoint a coordinator in the institution in order to support the professionals in the execution of the program. The tasks of such coordinator are, e.g., organization of the peer support, being a contact person between managers and professionals, and giving support in registration and research tasks. Managers and policy makers need to be involved in the implementation so as to enlarge the prospects for structural continuation of the program. The presence of a local coordinator was assessed as a critical success factor by most involved professionals.

Source: questionnaire and interviews with professionals

Stimulate collaboration with local institutes

To improve the success of the implementation trial and participate in the evaluation, official agreements were made with participating organizations. If policy makers are involved from the beginning, it will improve the prospects that the program will be structurally implemented after the pilot period.

Collaboration

45 practitioners who had experienced an intervention of level 2, 3, or 4 of Triple P completed the questionnaire called Wizzdiz (Raak et al., 2005). This instrument was developed in the Netherlands and measures whether the conditions for collaborating in a multilevel program are present. The practitioners worked in several primary care institutions and Mental Health institutions or Youth Care. Although the participating institutions had already worked together with each other, 50% (n = 22) mentioned that a new collaboration had taken place through executing the Triple P program. First, the practitioners judged the local context as positive: the willingness of working together and the harmonious relations between the local institutions. Obstacles for collaboration are the fusion processes that are taking place in several institutions. Second, the commitment of the practitioners is also judged positive. The participants have faith in each other, and think that the aims of Triple P fit in with their interests. Third, the respondents judged positive concerning the management, especially on negotiating and reaching compromises. Less positive are the responses concerning the organization of the project: they do not feel that there is much room for change, which can limit flexibility. Fourth, the respondents indicated that the external circumstances were positive. All the respondents think that Triple P fits in the governmental policy of parenting support and that the program is a value addition in the Dutch society. Furthermore, all the respondents were positive about the results on the formulated aims: better equipped to handle questions of parenting, better answering the needs of parents, more flexible parenting support, more contact between institutions, and more aware of each other's expertise.

The interviews (n=16) indicated that an important reason for participating organizations to choose Triple P was its multilevel approach. Many professionals (n=14) reported that through implementing the different levels of the Triple P program collaboration grows between the organizations. They had more knowledge concerning everyone's expertise and they could locate each other more easily. Furthermore, the professionals of the mental health institutions and the youth care, who are both responsible for the execution of the Level 4 –interventions, indicated that they work more together than they used to do. The managers experienced that a “warm transfer” of parents took place between different professionals and institutions. Parents are more prepared in terms of what is going to happen, and as a result the more intensive care is less threatening. Moreover, the uniformity in the manner of working is valuable for parents.

Source: Questionnaire Wiz/Diz (Raak & Mur-Veeman, 2006), questionnaire

Orientation

The implementation trial followed both a “top-down” and a “bottom-up” strategy. Taking time for discussion about the additional value of the new program to the “care as usual” is important, and preparing them for, and involving them in the next steps of implementation. Because the implementation trial covered four intervention levels of the Triple P-program, much time was spent in embedding the interventions into the right institutions. From the beginning, most of the participants were enthusiastic. It was difficult for some institutions to participate, such as educational institutions and social work institutions, in which parenting is not their core business. The next step is to arrange the implementation within the organizations. The importance of program *champions* has been documented in the implementation literature (Rogers, 1995). A *program champion*, or *program advocate*, can play a role because such a person advocates the program and can plead from a strategic place in the organization in an informal way for adopting the program. Thus, for selecting coordinators within the organization to be responsible for the implementation and involving staff members for support, the coordinator and practitioners need to be organized (e.g., have time to participate). Finally, the practitioners have to be informed very carefully. Because the decision was made for them to execute the program, they have a lack of information that needs to be filled.

Closure

This phase was closed with establishment of an official collaboration agreement on the local level, final local project groups, and a kick-off meeting for participants.

Implementation trial

Training and accreditation

The implementation trial began with the training courses for the practitioners and staff managers of the participating organizations. The training program and the accreditation were delivered by experienced Australian trainers. To improve the implementation in the organization on the longer term, supervisors and managers in the organization were trained too.

Evaluation of the training courses

The training program was delivered by experienced Australian trainers. A total of 79 professionals followed a training course on Level 2, 3, or 4 of Triple P: 97% were female and 3% were male. The mean years of experience in parenting support was 10.4 years. The participants were satisfied with the trainer and reported that their competences improved by following the course. These participants reported a significant overall increase in adequacy of training to conduct parenting consultations about child behavior from pre to post and follow-up assessment, and significant increase in self reported confidence in conducting parenting consultations about child behavior. Participants also reported significant improvements in proficiency in parenting consultation skills after completing training. The English language was an obstacle for many practitioners, especially to feel free and confident to discuss the program and share experiences. Not only was the spoken language a problem, but also all resources in this trial were in English. Another obstacle was that professionals with different levels of experiences in giving parenting support were combined in the same group.

Source: registration forms, questionnaire

Evaluation

According to Kilbourne and colleagues (2007), four types of evaluation ought to be considered: a) a process evaluation of the program implementation process via qualitative interviews; b) measurement of intervention fidelity at the organization and parent level; c) parent-level outcomes; d) return on investment (e.g., costs). In the implementation of the multilevel program Triple P, we added a fifth type: the assessment of the collaboration between organizations. A thorough evaluation should be conducted by independent researchers.

Here, we give a summary of the evaluation methods we used in the implementation trial of the multilevel Triple P program. An overview of the methods can be found in table 2. First, we conducted a process evaluation to determine how the intervention was actually implemented, and to determine to what extent the users (managers, professionals, parent) were satisfied with the interventions, and to get

insights in how the implementation can be improved. The training program was evaluated by means of questionnaires assessing the satisfaction (at post-training), competences and confidence of the professionals (at pre- and post training). Moreover, parents and professionals completed a satisfaction questionnaire. We also collected information concerning the intervention (e.g., which Triple P intervention, number and duration of sessions), and concerning the number of the reach of the parents. Furthermore, a questionnaire was sent to the professionals with questions about their working routines and experiences in applying Triple P. And we developed a questionnaire to investigate the promoting and hindering factors in implementing the program by professionals and managers. Finally, interviews were held with managers and professionals about their experiences with the implementation.

Second, the program fidelity was measured by taking a sample of video tapes of practitioners working with their parents. Intervention fidelity measures should be developed to determine whether core elements were successfully implemented (Kilbourne, et al., 2007). In the assessment of the video tapes, we used a list with the most important competences, based on the Triple P manuals.

Third, parent-level outcomes were measured by two evaluation studies on the interventions concerning levels 3 and 4 of Triple P (De Graaf, Onrust, Haverman, Janssens, in press; De Graaf, Haverman, Onrust, Breukelen, Overgaag, & Tavecchio, submitted). We measured the effects on parenting behavior and problem child behavior.

Fourth, the return on investment is important in making the business case for the program to stakeholders. In our study, we collected information about the duration of the innovation compared to the care as usual.

Fifth, we measured the collaboration between all participating organizations by a questionnaire and interviews among managers and professionals.

Satisfaction

A total of 79 professionals followed a training course on Level 2, 3, or 4 of Triple P: 97% were female and 3% were male. The mean years of experience in parenting support was 10.4 years. In general, the professionals were satisfied about the intervention, with the resources and the multilevel approach of Triple P, especially the standardized approach. The majority (89%) will recommend the program to colleagues. The satisfaction of the work of social nurses has been improved, and they feel more competent to support parents with the psychosocial problems in the children.

Sources: questionnaire and interviews

Outcomes' Effect Studies

Level 3 Primary Care Triple P (n = 87):

Both regular Dutch parenting consultations and the Triple P approach were found to produce reductions that also remained after three months in child emotional and behavior problems. For both groups, parenting styles were also found to have improved at both post-test and follow-up measurement. When compared to the regular Dutch parenting consultation practices, however, the Primary Care Triple P approach produced greater improvement in parental laxness, total parenting dysfunction, and total parenting competence at both post-test and follow up (De Graaf, Onrust, Haverman, & Janssens, *in press*).

Level 4 Standard and Group Triple P (n = 298):

A total of 298 parents were included in this study. Data indicate that the Standard and Group Triple P interventions are effective in reducing behavioral and emotional problems in children, dysfunctional parenting styles, improving parental competences reducing depression, anxiety, and stress in parents. Treatment effects are maintained after three and six months

(De Graaf, Haverman, Onrust, Breukelen, Overgaag, & Tavecchio, *submitted*).

Table 2. Overview evaluation methods

Factor	Example question	Instrument
Execution and reach	How often was the intervention applied? How often was it made use of?	Registration forms
Program-integrity	To what degree was the program executed as intended? Have the competences and knowledge in Triple P been improved in the professionals after the training course and accreditation?	<ul style="list-style-type: none">• Video-tapes• Questionnaires, pre, post, follow-up assessments by training courses and accreditation
Opinion of managers and directors of participating institutes	Do the managers experience advantages for their organizations in the primary process? What are the promoting and obstructing factors in implementing the program?	Semistructured interviews
Opinion of parent	To what degree are the parents satisfied with the intervention?	Satisfaction questionnaire

Opinion of professionals	To what degree do the professionals experience the innovation as an improvement? What are the promoting and obstructing factors in implementing the program?	<ul style="list-style-type: none"> • Questionnaires • Semistructured interviews
Opinion of local and national project leaders	What are the promoting and obstructing factors in implementing the program?	Semistructured interviews
Effectiveness	What are the effects on relevant outcomes (child behavior problems, parenting styles)?	Effect studies <ul style="list-style-type: none"> - Level 3 Triple P: quasi-experimental design - Level 4 Triple P: four samples pre, post, and follow-up assessments
Collaboration in the multilevel approach	Does the multilevel approach result in a better collaboration? What are the promoting and obstructing factors in achieving a good collaboration?	<ul style="list-style-type: none"> • Semistructured interviews • WIZ/DIZ, a validated questionnaire

Ongoing support

After being trained and accredited, the practitioners started with the intervention in which they were trained. During the implementation, proactive support needs to be given by an expert for several reasons. First, small and larger implementation problems will occur (e.g., ranging from missing documents to nonparticipation by institutions). Second, the challenge is to ensure that core elements are maintained (fidelity) while its implementation can be adapted to local needs and infrastructure (flexibility) (Kilbourne et al., 2007). Program integrity is a main issue in implementing evidence-based interventions. In Triple P, the quality of the Triple P program is controlled by a system of professional training and workplace support. Peer support and supervision should be organized to control the quality and improve the participation in the implementation.

Program fidelity

Four families were videotaped while receiving the Triple P intervention and twelve professionals completed the questionnaire about the program fidelity. The videotapes indicated that the session topics were all executed, and most of the competences were executed as intended. However, the interventions to stimulate self-regulation in parents were less well executed. The majority (n=10) sometimes deviated from the program. Often, this concerned leaving out some parts of the session. Sometimes, they included subjects from another method, or psycho education was given. The written resources in English influenced the execution of the program in a positive way because they made it easier to keep to the original program. Conditions that improved the program integrity were, e.g., the presence of an approachable person within the organization and a positive attitude of the professional toward the innovation.

Resource: videotapes and questionnaire

Feedback and refinement

The results of the evaluation give input and suggestions to improve the implementation of the program in the participating organizations and give insights how to conduct a broader dissemination of the program.

Closure

This phase is closed with trained professionals with experiences in the application of the Triple P-program. Furthermore, data are gathered with the objective of evaluating the implementation, and the outcomes give information how to continue.

Maintenance and evolution

Organizational, financial changes

This phase is often the most challenging and least studied, in part because sustaining interventions involves concerted multilevel efforts to change the current practice and the organizational and financial incentives necessary for long-term national adoption (Kilbourne et al., 2007). There is always a risk that further dissemination of the program will collapse after the pilot period and the professionals return to their earlier experiences. Therefore, stakeholders (financial and organizational) were involved in the implementation process from the beginning, to enlarge the prospects for further dissemination. Following a successful implementation trial, a plan was made for a national implementation. The experiences and learned lessons of the implementation trial are described in this national plan, e.g., the pros and cons for implementing a multilevel program or one intervention of the program, the importance of a national coordination, a local coordinator, workplace support, and supervision.

A discussion needs to be held concerning the responsibilities of (inter)national and

local organizations. To guarantee the quality of an implemented program, it is important that the ownership of the program and the responsibilities of the implementation, as well as the quality in executing the program and the maintenance of the program, are well organized and provided for. A national institute in the adopting country needs to be responsible for setting up and guaranteeing the quality system in collaboration with the Australian owners of the program. A number of questions need to be answered in this. Who exactly is responsible for the national enrolment and guaranteeing the quality of the execution? How will the organization of the national enrolment be financial supported? After how long can a national organization withdraw and the implementation of the program be left to the local institutions?

Closure

This phase can be closed with a national plan for the implementation of the Triple P program and a plan for structural implementation on the local level.

6.6 Discussion

Adaptation of the REP framework to implement a multilevel program

The REP model was very usable for the implementation of the multilevel program Triple P. The framework was a structured approach to implement this program. Because the main steps in the four implementation-phases were described in detail, it was very helpful to organize the implementation trial and in developing a model for multilevel programs.

There are three main adaptations made in implementing an evidence-based multilevel program in another country. The adaptations in the framework are presented in figure 1. First, a cultural transferability is indispensable to determine potential fundamental differences. Furthermore, the resources have to be translated in other speaking countries. This job should be executed carefully, because no changes should be made in the core elements of the program. Second, the organization of the implementation differs. The organization of implementing a multilevel program in another country is more complex as it is for a standalone intervention. In the original REP model, one group organizes and leads the implementation, the so-called Community working group (CWG). This is a group of stakeholders from organizations serving the target populations and consists of representatives of the following levels: populations, purchasers, plans, practices, providers, and patients (Kilbourne et al., 2007). To implement an evidence-based intervention in another country, we made an organization structure on four levels: on international, national, local, and institutional level. A national team was formed, including stakeholders, to conform the CWG in the REP model. The project leader communicated with the international owners of the program. Because in a multilevel program more than one (sometimes more than ten) local organization is involved, a local project team was formed with stakeholders from the local organizations and local policy. Our findings of the process evaluation showed that a local coordinator is

crucial for a successful implementation. Moreover, a coordinator in the institution self is also important, because workplace support is an important condition for a successful implementation. This is a well-known topic and described in the (inter)national literature (Rogers, 1995; Sanders & Turner, 2005). If professionals are supported by managers and colleagues in their institutions, the innovation will be implemented more easily. The study by Turner (2003) shows that workplace support is directly connected with the implementation of a Triple P- intervention at Level 2. Supervision can play a role in the implementation of innovations. The presence of supervision in an organization results in more productive employees, who are more able to reach their aims (Latham, 2000). Furthermore, a multilevel approach is not achievable for all municipalities. In such cases, all interventions separately should be effective so that they can be implemented separately. This needs to be considered in the preimplementation phase. The third adaptation concerns the collaboration. In the implementation of the multilevel program, it is important that the conditions necessary for collaboration are present to guarantee or improve the collaboration in the long term. This can be examined in the preconditional phase of the implementation process. The attraction of the multilevel Triple P program is in the fact that it offers possibilities to realize a tailored system. However, collaboration between organizations with all different cultures is not automatically done; it needs to be organized and stimulated by the national team and the local coordinator.

Figure 1 Adaptation of the REP- framework (Replicating Effective Programs) for implementation of multilevel health care program to another country (adaptations are written in bold).

Preconditions	Preimplementation	Implementation	Maintenance and evolution
<p>Identification of need for new intervention</p> <p>Identification of effective intervention that fits local settings</p> <p>Identify cultural transferability</p> <p>Organize national team</p> <p>Seek collaboration with international owners</p> <p>Packaging intervention for training and assessment</p>	<p>Orientation</p> <ul style="list-style-type: none"> - Explain core elements - Customize delivery <p>Logistics planning</p> <p>Technical assistance</p> <p>Stimulate collaboration between local institutes</p>	<p>Staff training</p> <p>Ongoing support of and partnership with community organizations</p> <p>Booster training</p> <p>Process evaluation including collaboration</p> <p>Feedback and refinement of intervention package and training</p>	<p>Organizational and financial changes to sustain intervention</p> <p>Prepare package for national dissemination</p> <p>Recustomize delivery as need arises</p>

Main success factors in the implementation of a multilevel program

Overall, we can conclude that the implementation trial was successful. In both local regions, the interventions were embedded structurally into the care system and the program is now implemented in 17 other municipalities and new ones are interested. Here, we will discuss the main success factors in implementing the multilevel Triple P program in the Netherlands.

First, the systematic approach of the REP-model has supported a successful implementation. Following all the steps in the four different phases of the implementation process allows careful planning of the implementation and makes one alert in not missing one essential step. Second, the high quality of the triple-P program itself was a success factor. The evidence of its effectiveness had been established in many studies; high-quality training courses, training materials, practitioner manuals, and parent resources were available. Overall, the program is standardized, easy to follow, accessible, and culturally sensitive (Sanders & Turner, 2005). Third, the results in this study show that workplace support is an important condition for a successful implementation. This is a well-known topic and described in the (inter)national literature (Rogers, 1995; Sanders & Turner, 2005). If professionals are supported by managers and colleagues in their institutions, the innovation will be implemented more easily. Support of the organization can be seen as one of the factors that can diminish or limit resistance to change in an organization (Beer, 2000; Martin, 2001; Robbins, 1994). Workplace support can diminish the feelings of stress that can result from working with an innovation. The study by Turner (2003) shows that workplace support is directly connected with the implementation of the brief one- to two-session primary health care intervention at Level 2. Supervision can play a role in the implementation of innovations. The presence of supervision in an organization results in more productive employees, who are more able to reach their aims (Latham, 2000). Positive forms of supervision, e.g., convincing a person of his or her own competences, will improve the personal efficacy of the employees. A high level of personal efficacy influences the tendency to change (Bandura, 2000). The study by Turner (2003) shows that a lack of supervision is an important obstacle for implementing the brief one- to two-session primary health care interventions. In implementing an innovation, it can be crucial whether an innovation is connected to the task interpretation of the professional (Fleuren et al., 2002). Finally, it can be important that specific conditions are met, such as sufficient time to execute the innovation (Wensing, Splunteren & Grol, 2000; Fleuren et al., 2002). In our study all the organizations were willing to invest in the implementation of Triple-P by making time available for coordination and supervision. The fourth success factor is the fact that it is a multilevel program, which offers possibilities to realize a tailored system. Working with the same pedagogic vision connects the different organizations. Triple P offered the possibility to develop a stepped care program. Here it should be noted that Primary Care institutions and Youth Care / Mental Health institutions are divided by the Dutch system. The local institutions and the provincial operating institutions are divided in terms of financial support, but more importantly, by the referral of the families.

The two divided sectors were not accustomed to working together. However, in executing the Triple P program they had to work together. The Level 3 interventions were implemented in the local Primary Care institutions, and the Level 4 interventions in the Youth Care / Mental Health institutions. Implementing level 1 through level 5 of the Triple P-program at once is preferable above implementing one intervention level of the Triple P program, because of the impact on population level. In a 3-year period, from 2008 to 2010, the whole Triple P program will be implemented in the Dutch capital, Amsterdam. A total of 800 professionals will be trained in level 2 through level 5 of Triple P. Also a universal media and communication strategy (level 1) is organized in the Netherlands. In the United States, a randomized trial to the entire Triple P program was conducted (Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009). Large effect sizes were found for three independently derived population indicators: substantiated child maltreatment, child out-of-home placements, and child maltreatment injuries. The study found that making Triple P available to all parents led to significantly lower rates of confirmed child abuse, fewer out- of-home placements, and fewer hospitalizations from child abuse injuries, when compared to communities without access to Triple P. However, a multilevel approach is not achievable for all municipalities. It is possible that little connection in tasks is available, or that the tasks in parenting support can be conducted within one organization. In such cases, Triple P can also be an improvement compared to the present situation, because all interventions are separately effective and can be implemented separately.

Future research

The original REP model was assessed in a randomized controlled trial by Kelly and colleagues (2000). The study among 70 AIDS service organizations focused on the outcome on intervention fidelity and using the intervention, and delivery in different formats, type of population. In this study, we adapted the REP model for the implementation of a multilevel program. It is recommended to assess this adapted model, preferably in a randomized controlled trial. Besides outcome measures such as "likeliness to use the program, program fidelity, outcomes on parent and child level, cost effectiveness," we recommend to assess also the surplus of a multilevel approach for parents and professionals, on both outcome effects on client level or implementation effects (e.g., likeliness to use the intervention, program fidelity) and the collaboration between organizations. Furthermore, it is recommended to develop and test the model for the time beyond the implementation phase. There is always the risk that the program fidelity will not sustain some years after the implementation phase. A thorough quality system needs to be developed in the adopting country to guarantee the sustainability of the program in the future. Guidelines for municipals, organizations, and professionals should be made to know what steps they have to make.

6.7 Conclusions

Developing evidence-based stepped care programs (consisting of campaigns, self-help, consultation, training, and therapy) is a major challenge in mental health care. If such programs are available in other countries, it may be efficient to implement these programs if conditions for intercultural transfer are met. In this article, we presented an example of a successful implementation of a multilevel program. Careful planning and creating the right conditions for implementation are the key factors for success. With a few additions, it was found that the REP framework is an excellent framework to guide this process.

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7 Summary of preceding chapters

7.1 General introduction

Behavioral and emotional problems are quite common in children and adolescents. Because parenting is associated with the well-being of children, parenting programs are developed to address the child problems. Among all developed parenting programs, the Behavioral Family Interventions (BFI) have the strongest empirical evidence.

The Triple P- Positive Parenting Program is a behavioral family intervention and aims to enhance family protective factors and reduce those risk factors known to be associated with severe behavioral and emotional problems on the part of preadolescent children. This is done by increasing the knowledge, skills, and confidence of the parents. The program was developed by Sanders and colleagues at the Parenting and Family Support Center of the School of Psychology at the University of Queensland. Triple P incorporates five levels of intervention of increasing intensity for parents of children between the ages of 0 and 16.

In 2006 and 2007 an implementation trial on the Triple P – Positive Parenting Program was conducted in the Netherlands. In a one-year period interventions of different levels of the Triple P program for parents of children between the ages of 0 and 12 were implemented in two regions in the Netherlands: universal Triple P, concerning a small local campaign (level 1), selected Triple P (level 2), Primary Care Triple P (level 3), and Standard and Group Triple P (level 4).

The aim of this thesis was to evaluate the implementation trial of the Triple P program in the Netherlands by answering five questions:

1. What are the effects of Triple P on parenting?
2. Is Triple P effective on behavior problems in children?
3. Is Primary Care Triple P an addition to the primary care parenting support in the Netherlands?
4. How to implement a multilevel program in another country?

In this Summary we will return to these questions.

7.2 What are the effects of Triple P on parenting?

Chapter 1 presents the results of the meta-analyses that were conducted to assess the effectiveness of Triple P level 4 interventions on parenting styles and parental competency across different target groups and to assess the impact on the effects of different child variables (age and gender), intervention modalities, and the initial behavior problem scores of the children. We conducted two meta-analyses: one to assess the effectiveness of Triple P on parenting styles and competences of parents in the Triple P group compared with a control group, and the second one assessed

the degree to which postintervention effects were maintained over time in the intervention group. Nineteen studies were selected in these analyses. Large effect sizes were found on parenting styles at post-measurement ($d = 0.68$) and follow-up measurement 3 to 12 months ($d = 0.80$). Large effect sizes were found on parenting competences at post measurement ($d = 0.65$) and at follow-up measurement 3 to 12 months ($d = 0.67$). Studies with a higher percentage of boys ($\geq 68.3\%$) were found to show significantly greater long-term effects on parental competency than studies with a lower percentage ($d = 0.50$ vs. $d = 1.20$). None of the other moderator variables were significant. The positive results indicated that the interventions can be used in a diverse range of families.

7.3 Is Triple P effective on behavior problems in children?

Chapter 2 gives a report of the results of the meta-analyses that were conducted to assess the effectiveness of Triple P level 4 interventions in the management of behavioral problems in children and to assess whether the effects were moderated by the age or gender of children, and the intervention modalities. We conducted two meta-analyses. In the first meta-analysis, we assessed the effectiveness of Triple P on behavioral problems of children compared to the control group, as directly measured at the end of the intervention. In the second meta-analysis, we assessed the degree to which post intervention effects were maintained over time in the intervention group. We found 25 studies that focused on the Level 4 intervention, and of these, 15 were selected for the meta-analyses. For each study a standardized effect size, d , was calculated and a random-effects meta-analysis was conducted. Moderate to large effects on behavior problems of children were found that lasted for 6 to 12 months in follow-up measurements. A large effect size was found at both post intervention ($d = 0.88$), and at 6 months and 12 months follow-up, with overall mean effect sizes of $d = 1.07$ and $d = 0.84$, respectively. Few significant moderators were found, indicating that Triple P can be successfully used with a diverse range of families, types of problems, delivery formats, and ages of the children. Studies with a higher proportion of girls have larger long-term effect sizes than studies with fewer girls ($d = 1.08$ vs. $d = 0.37$). More analyses are needed to examine the meaning of this result, because boys were overrepresented in all studies. In the long term, the effects in the seven studies with initial scores in the clinical range on behavior problems were larger than in the nine studies with lower scores ($d = 0.36$ vs. $d = 1.08$). It was concluded that the level 4 interventions of the Triple P program improve the problem behavior of the children.

Conclusion chapter 1 and 2

The analyses in both meta-analyses on parenting behavior (chapter 1) and on child behavior problems (chapter 2) involved both universal prevention samples and high-risk samples. This means that the interventions are applicable both in prevention

departments of mental health institutions and youth care departments. The positive results seem to support the widespread adoption and implementation of the program in an increasing number of countries around the world.

7.4 Is Primary Care Triple P an addition to the primary care parenting support in the Netherlands?

Chapter 3 presents the results of an evaluation study on both the regular Dutch parenting consultations and Primary Care Triple P. The Dutch primary care system includes a variety of intervention approaches. Both interventions target parents of children with mild to moderate behavioral and/or emotional problems. The interventions were examined in pre-, post and follow-up assessments, and final results were compared. Both groups were matched by income of the parents, percentage one-person households, number of inhabitants, and urbanization grade. During a one-year period of recruitment, a total of 189 participants were approached and 129 parents agreed to participate: 42 families were helped with regular Dutch parenting consultations and 87 families were supported with Primary Care Triple P. Significant decreases in the emotional and behavioral problems of children were found that lasted for over 3 months for both groups. For both groups, parenting styles were also found to have improved significantly at both post-test and follow-up, except laxness in the regular Dutch parenting consultation group. Only for the Triple P group significant effects on parental satisfaction, parental efficacy and overall parental sense of competence were found. When compared to the regular Dutch parenting consultation group, the Triple P group showed significantly less dysfunctional parenting styles and a higher score on parental competency at both post-test and follow-up. These results are promising for both regular Dutch primary care parenting programs and Primary Care Triple P. Given that Primary Care Triple P produced better results for parenting styles and parental competency, however, it is possible that the emotional and behavioral problems of the children may decrease even more in the long term, and thereby make at least Primary Care Triple P the preferred program. More research is needed to confirm those promising results, preferably conducted as randomized controlled trials.

7.5 What is the impact of Group and Standard Triple P on children's behavior, parenting and parental psychopathology in the Dutch practice?

In chapter 4 the results of four evaluations of Triple P level 4 interventions are presented. Three evaluations used a 'single-group design' and one a 'quasi-experimental design'. Before, after and three to six months later assessments were taken. In total 298 parents were included in this four samples. The first aim was to examine the effects of the Standard and Group Triple P interventions on children's behavior and emotional problems and parenting. Second, the study focused on parental distress and

psychological health of parents. Third, the relation between parenting and parental psychopathology was studied. Results indicated that the interventions are effective in reducing problems in children, dysfunctional parenting styles, in improving parental efficacy and in reducing depression, anxiety and stress in parents. We have evidence that the treatment effects are maintained after three and six months. This results concur with the international studies on the Triple P level 4 interventions. Although international studies indicated that reduction in emotional and behavioral problems in children is a mediating factor in reducing parental psychopathology, the results of this study could not affirm this. In our study, we found that parental feelings of competence mediated the reduction of parental psychopathology. An increase in the feeling of parental competence, caused by the improvement in parenting behavior, turned out to be the mediating factor. It was concluded that the standard and group Triple P interventions can be an important addition for the mental health institutions in the Netherlands, especially for parents with depression, anxiety or stress. Further research is recommended, preferably to be conducted as randomized controlled trials.

7.6 How to implement a multilevel program in another country?

In chapter 5, the implementation process of the multilevel Triple P Program is described using the effective 'Replicating Effective Programs' (REP) framework. According to this framework, the implementation process is divided into four phases: precondition, preimplementation, implementation, and maintenance and evolution. We adapted the framework by adding or deleting elements to make it suitable for a multilevel intervention program. In doing this, a practical framework for implementing evidence-based multilevel programs in another country was developed. In addition, we evaluated the implementation trial. For this aim, semi-structured interviews among professionals, managers and experts were undertaken, and we measured the collaboration with a questionnaire.

The REP model was highly usable for the implementation of the multilevel program Triple P. The framework was a structured approach to implement this program. Because the main steps in the four implementation-phases were described in detail, it was very helpful to organize the implementation trial, and in developing a model for multilevel programs. There were three main adaptations made for implementing an evidence-based multilevel program in another country. First, cross-cultural transferability is indispensable to determine potential fundamental differences. Furthermore, the resources have to be translated in non-English speaking countries. Second, the organization of the implementation differs. The organization of implementing a multilevel program in another country is more complex than a stand-alone intervention. To implement an evidence-based intervention in another country, we made an organization structure on four levels: international, national, local, and institutional level. The third adaptation concerns the collaboration. In the implementation of the multilevel

program, it is important that the conditions necessary for collaboration are present to guarantee or improve the collaboration in the long term.

Overall, we can conclude that the implementation trial was successful. In both local regions, the interventions were embedded structurally into the care system and the program is now implemented in 17 other municipalities and new ones are interested. Four main success factors in implementing the multilevel Triple P program in the Netherlands were discussed. First, the systematic approach of the REP-model has supported a successful implementation. Second, the high quality of the triple-P program itself was a success factor. Third, the results in this study show that workplace support is an important condition for a successful implementation. The fourth success factor is the fact that it is a multilevel program, which offers possibilities to realize a tailored system. Working with the same pedagogic vision connects the different organizations. Triple P offered the possibility to develop a stepped care program.

8 General Discussion

8.1 Introduction

In this thesis we examined the implementation of the evidence-based Triple P – Positive Parenting Program. Internationally effective interventions are often adopted and implemented in other countries. However, the procedures by which effective interventions are chosen for adoption and the implementation are often not conducted systematically (Cuijpers, de Graaf, & Bolhmeijer, 2005). We took the following systematic approach in implementing the evidence-based Triple P – Positive Parenting Program in the Netherlands.

First, we made an overview of the (inter)national base rates of behavioral and emotional problems in Dutch children, aged 0 to 12 years to judge whether there is a problem. We found that, in general, the prevalence of behavior- and emotional problems in children, aged 2 to 12 is about 15%, 10% of which are mild problems and approximately 5% severe, clinical problems (Van der Ploeg, 1997; Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005; Ter Bogt, Van Dorsselaer, & Vollebergh, 2003).

Second, we reviewed the rationale for the implementation of a parent intervention. We found that it is widely accepted that dysfunctional parenting practices are powerful predictors of children's mental health problems in general (e.g., Loeber, Green, Lahey, Frick, & McBurnett, 2000; Sanders, Markie-Dadds, & Turner, 2003). Several reviews have documented the efficacy of behavioral family interventions as an approach to prevent and treat problems in children, particularly those with conduct problems (Kazdin, 1987; Sanders & Markie-Dadds, 1996; Taylor & Biglan, 1998; Webster-Stratton & Hammond, 1997).

Third, in a national expert team it was discussed whether there was a need for a new parenting program in the Netherlands. Triple P is a form of behavioral family intervention. This team concluded that there was a need for a tiered continuum of interventions of increasing intensity and for an evidence-based parenting intervention. The literature showed us that the Triple P – Positive Parenting Program was a possible program to implement in the Netherlands to fill the needs.

Those three steps were described in the general introduction. Before starting a broad-scale implementation, the following topics need to be discussed: the international evidence-based status of the program, the effectiveness of the program in the Netherlands, and the conditions to implement the program in the Netherlands. The results of this thesis will be discussed in reference to those three topics. Consequently, this will lead to implications for a broad-scale implementation. In addition, we will address the limitations of this thesis and formulate recommendations for future research.

8.2 The international evidence-based status of the program

Effectiveness and efficacy of the Triple P- Positive Parenting Program

The last update of the research in Triple P dates from November 2007. At that time, 55 efficacy and effectiveness studies had been conducted on a form of Triple P, of which 29 randomized controlled trials, 11 effectiveness studies with a quasi-experimental design, and 15 uncontrolled pretest-posttest-follow-up test designs (Nowak & Heinrichs, 2008). Among the studies, several effectiveness trials have been conducted under conditions of usual service delivery. All studies demonstrate positive outcomes for children and parents. This extensive number of trials is still growing with new trials being conducted worldwide: 61% studies were conducted in Australia, 16% of which concerned level 1 to 3 interventions, 66% level 4 interventions, and 18% level 5 interventions.

The evidence that the effects of the Triple P program is demonstrated by means of high qualitative research can be illustrated by the following criteria. First, reliable designs are used. Randomized controlled trials are the most reliable designs. By taking an aselect sample of the respondents and assign them to the experimental- or control group, possible differences between groups occur accidentally. Furthermore, it will prevent the presence of systematic differences between the groups (Landsheer et al., 2003). Because 29 RCT's were conducted on a form of Triple P, this criterion is well supported. Second, reliable and valid used measures are used. Measures on behavior and emotional problems in children, and on parenting with high psychometric quality were used in most of the studies. In assessing behavior and emotional problems in children, both parent self report measures and more independent measures, such as observation measures or teacher's reports, were used. In most of the studies, parent self report measures are used. Third, the fact that the effects on child and family functioning have been replicated several times in different studies involving different research teams, corroborates the evidence. This can be confirmed by the fact that a number of these studies have been conducted in other, Western and non-Western, countries producing similar positive effects (e.g., Bodenman et al., 2007; Foster et al., 2008; Heinrichs et al., 2005; Yuki Matsumoto et al., 2007).

The evidence that Triple P is an effective parenting strategy for several different groups of parents and their children, is based on the following criteria. First, several studies have shown that parenting skills training used in Triple P produces predictable decreases in child behavior problems, which have been maintained over time. In addition, the results indicated that Triple P interventions reduced dysfunctional parenting styles in parents, improved parental competency, and decreased parental depression, anxiety and stress (e.g., Sanders, 2003). Second, the population varied in the different studies; parents of children with mild or more severe behavior problems were included. Clinically relevant outcomes for both children and their parents have been demonstrated for the standard, self-directed, telephone-assisted, group and enhanced interventions (e.g., Sanders et al., 2000; Sanders, 2003). Third, the program has also been successfully used for several different family types, including two-parent families,

single-parent families, stepfamilies, maternally depressed families, martially discordant families, divorced families, families with a child with an intellectual disability or an overweight and obese child (e.g., Sanders, Markie-Dadds, & Turner, 2003, Roberts, et al., 2006; West, 2007). Fourth, the effectiveness of different levels of Triple P interventions can be supported. On all levels, reliable outcomes for both children and their parents have been demonstrated (e.g., Sanders, 2003).

The meta-analyses conducted in this thesis underpin these international findings. The aim of the meta-analyses was to assess the effectiveness of Triple P level 4 interventions in the management of behavioral problems in children, and the effectiveness on dysfunctional parenting styles in parental competency by pooling the evidence from relevant studies that included level 4 interventions. The meta-analyses in this thesis included 15 studies on level 4 interventions: Standard, Group and Self-directed Triple P. This intervention level can target individual children at risk or an entire population to identify individual children at risk. To prevent the meta-analyses from comparing 'apples and oranges', we have statistically tested homogeneity to determine whether a grouping of effect sizes from different studies shows more variation than would be expected from sampling error alone. This provides an empirical test of whether studies show such disparate results that it may not be plausible to presume that they are comparable. As strict methodological criteria for inclusion were applied, ten effect studies were not included in this meta-analysis. One can be assured that the synthesis is based on only the best evidence, but its results may summarize only a narrow research domain. As long as this rationale is explicit, each person can judge for him or herself whether they are meaningful.

The meta-analyses on child behavior problems showed homogeneous mean effect sizes of 0.88 at post-measurement, an effect size of 1.07 at 6 months, and 0.84 at 12 months. These are large effects. The overall mean homogeneous effect size on dysfunctional parenting styles of 0.54 was found at post-measurement, and 0.51 at follow-up measurement (4 to 6 months), which are considered moderate effects. An overall homogeneous effect size of 0.57 on parental competences was found at post-measurement. At follow-up at 6 months, an overall homogeneous effect size of 0.74 was found. Those are moderate to large effects. These results concurred with the meta-analytic results reported by two other meta-analyses. Thomas and Zimmer-Gembeck (2007) employed a fixed-effects approach and found effect sizes for parenting and child behavior ranging between 0.38 - 0.70 and 0.31 - 0.73, respectively. Nowak & Heinrichs (2008), using a mixed-effects hierarchical model conducting a meta-analysis on all levels of the Triple P – program, estimated overall effect sizes for parenting and behavior problems in children in the range 0.35 – 0.48 for between-groups, and 0.45 and 0.57 for within-groups post-intervention comparisons. Those are moderate effects.

The systematic coding of study characteristics typical in a meta-analysis permits an analytically precise examination of the relationships between study findings and such study features as respondent characteristics, delivery modalities, age and gender,

etc. In our studies, we examined whether effects were moderated by the age and gender of children, the different modalities, and the initial behavior problem scores of the children (scoring problems at pretest in clinical range vs. nonclinical range). Few significant moderators were found in the effects on child behavior problems in our meta-analysis.

We found that studies with an initial behavior problem score in the clinical range (initial intensity score ECBI \geq 127) have significantly larger long-term effects on behavior problems than those with nonclinical behavior problems. This can be due to the fact that higher problem scores provide a larger potential for positive change. Another reason might be that the level 4 interventions of Triple P are more beneficial to parents of more deviant children. Furthermore, in our meta-analysis we found that gender can influence the result, but studies including more girls are necessary to find out what this influence means, because the mean number of boys in the studies was 62.6% to 68.3%. Furthermore, the studies found promising effects for the Self-Help Triple P intervention, which is interesting because of the advantages of this type of intervention compared to face-to-face interventions: they are convenient, they enable users to repeat lessons, and they can be disseminated to many people (Starker, 1990). This effect was not found in the meta-analysis of Nowak & Heinrichs (2008), probably caused by the fact that in this meta-analysis a mixed set of measures and also more studies were included, because the study was not restricted to RCT's only.

Conclusion

Triple P may be considered a well-researched parenting program that is based on high quality studies. Significant effects are reached at each level of the program, with most studies on level 4 interventions. Positive results are found on behavioral problems in children, parenting dysfunctional styles, parental competences, depression, anxiety, and stress in parents. Triple P can successfully be used with a diverse range of families (e.g., types of problems, delivery formats, age of the children). The results may be generalized from Australia to other countries. However, less is known about the effects on emotional problems in children, and this topic warrants more study in the future.

8.3 Implementation trial in the Netherlands

Then, after establishing the evidence-based status of the Triple P program, we decided to conduct an implementation trial of interventions on level 1 to 4 of Triple P, to examine whether and under what conditions the program can be adopted and implemented in the Netherlands.

Effectiveness of the program in the Netherlands

Because of the many effectiveness and efficacy trials on the program, we expected the program to be effective in the Netherlands too. However, to really know whether the program is effective in another country, it is important to test the effectiveness of the interventions in the adopting country. In this thesis we presented the results of two evaluation studies on Triple P: an evaluation of Primary Care Triple P, and several evaluations on Standard and Group Triple P.

Effectiveness of Primary Care Triple P

The effects of Primary Care Triple P were studied in a one-group pretest-posttest-follow-up test design. The results showed significant decrease in emotional and behavioral problems, and improvement in social behavior. Furthermore, respondents demonstrated a reduction in the parenting styles laxness, overreactivity and overall inadequate parenting. In addition, improvement in parental satisfaction, in parental efficacy, and in overall parental sense of competence was found. These results indicate that Primary Care Triple P is effective for Dutch parents and their children with emotional and behavioral problems. The same study was conducted for the regular Dutch parenting consultations. Here we found also a significant reduction of emotional and behavioral problems, problems with peers and total problems in children. Respondents demonstrated a reduction in overreactivity and in overall inadequate parenting, but not in laxness. No significant improvement was found in parental satisfaction, parental efficacy or overall parental sense of competence. Those results indicate that the regular Dutch parenting consultations are effective for Dutch parents and their children. Finally, we compared the Primary Care Triple P and the regular Dutch parenting consultations with each other. We found no differences in behavioral and emotional problems. The results indicated that Primary Care Triple P resulted in more improvement in laxness and overall inadequate parenting. Furthermore, no differences were shown in satisfaction and efficacy. However, the results indicated that Triple P Primary Care reported more improvement in parental competency. What do these results mean? Both interventions turned out to be effective in child problems and no differences were shown between the conditions. As child problems are the main outcomes, we asked ourselves, based on those results: why implement a new intervention if care-as-usual is effective on child problems too? We will try to answer this question. First, the regular Dutch parenting consultations include a variety of intervention approaches. Most of those consultations are not standardized and not studied very well. The descriptions of the consultations are somewhat vague and mostly no resources (e.g., workbooks for parents or practitioner's manuals) are available. In addition, the underlying theories are not very well described, so no strong foundational theoretical evidence is available. This means that we still do not know what the effective ingredients in those consultations are, or what type of intervention is effective: all or just one of them? Second, the results showed that Primary Care Triple P improved more in parenting styles and parental competency than the regular Dutch primary care consultations. This indicates that Primary Care Triple P

is to be preferred above Dutch care-as-usual. Because parenting styles and parental competency are related to child behavior (e.g., Janssens, 1994; Olson, Bates, Sandy, & Lanthier, 2000; Prinzie et al., 2003; Wolfradt, Hempel, & Miles, 2003), we can expect that child problems may decrease more in the long term.

Effectiveness of Standard and Group Triple P

We studied the effects of Standard and Group Triple P in four evaluations, conducted in mental health institutions. Three evaluations included a 'single-group design' and one a 'quasi-experimental design'. Before, after and three to six months follow-up assessments were taken. The results suggest that the interventions are effective in reducing problems in children, dysfunctional parenting styles, in improving efficacy and in reducing depression, anxiety and stress in parents. These effects were maintained after three and six months. These results concur with the results of international studies. The meta-analysis on the level four interventions (chapter 2 and 3) showed moderate effects on behavior problems in children, parenting styles and parental competency. In addition, the Triple P level 4 interventions have been successfully used for stressed and depressed parents (Sanders, 1999; Sanders & McFarland, 2000). In this last study it was shown that both standard and enhanced interventions of Triple P produced significant clinically reliable reductions in both maternal depression and child disruptive behavior.

This level of intervention can target individual children at risk or an entire population to identify individual children at risk. Group Triple P is appropriate as a universal (available for all parents) or selective (available to targeted groups of parents, e.g. high risk groups, children with diagnoses), or as an early intervention strategy for parents of children with current behavior problems. Therefore, results should be interpreted carefully. Smaller effect sizes would be expected in prevention studies than in treatment studies. In the four samples used in this thesis, parents were recruited in mental health institutions for children, youth care institutions, and a school for special education. In three samples no selection criteria were formulated, and parents were recruited by open registration or referred to parenting support because of severe child problems and parenting problems. In one sample, respondents had to have a clinical score on the Parenting Scale (≥ 3.2). We found higher initial scores on parenting styles in this fourth sample ($d = 3.70$), although the initial scores in two other samples were also just above the cut-off score ($d = 3.26$ in sample 1, $d = 3.37$ in sample 3). The data show that in all four samples the dysfunctional parenting styles significantly decreased at post and follow-up assessment (if available). These data suggest that Standard and Group interventions are effective for both prevention and treatment studies. Here it should be noted that in two of the four samples a mix of Standard and Group interventions was used. It would be better to distinguish those formats in further studies.

Our data suggest that the parenting management training Triple P improved parenting behavior, which leads to a reduction in the child behavior problems. Consequently, this is expected to contribute to the decrease of parental depression,

stress and anxiety. It is well-known that children of mothers with depression, anxiety and stress are at risk to develop social-emotional problems (Mäntymaa et al., 2004; Muris, et al., 1996; Turner, et al, 2003; Smith & Carlson, 1997). The data in our study confirmed the positive results of improved parenting on complaints of depression, anxiety and stress in parents, which can thus be expected to have impact on children's behavior and emotional problems. However, the initial scores on the measurement in our study were in the normal range, so it could not be concluded whether this also will reduce (sub)clinical psychological problems in parents. The data suggest that parental competency is a mediating factor. The data could, however, not confirm that the presence of behavior problems in children is a mediating factor in changing the parental depression, stress or anxiety.

Conclusion

First, conclusions of the studies on Primary Care Triple P and Standard/Group Triple P have to be drawn cautiously. Respondents were not randomly assigned to the two conditions in the study on Primary Care Triple P, and no control group was used in three of the evaluations on Standard/ Group Triple P. Because randomized studies are difficult to combine with the implementation of an innovation, we decided to keep the research as simple as possible, which enhanced the participation of the practitioners. However, the results give us the first indication that the Triple P interventions are effective in the Netherlands too, in the reduction of behavior and emotional problems in children, and the improvement of parenting styles, parental competency and parental adjustment.

Given the fact that the regular Dutch parenting consultations were offered for many years by experienced professionals, and that the effects on child problems were similar in the Primary Care Triple P and care-as-usual group, it is difficult to exchange the Triple P for the regular consultations. However, given that Primary Care Triple P showed better effects in parenting styles and parental competency and efficacy, it is recommended to adopt the Primary Care Triple P, instead of improving the regular Dutch parenting programs.

Because of the relation between psychological problems in parents and psychological problems in children, and the positive influence of parenting management training to reduce both, the data suggest that the level four Triple P interventions can especially be applied to depressed, anxious or stressed parents, with the aim to diminish the parent problems, and the child behavior and emotional problems as well. In addition, the results show that the Triple P interventions are effective on behavioral problems and emotional problems in children. Most of the international research only focuses on children's behavioral problems. Our hypothesis is that Triple P offers support for those children too, partly caused by reductions in psychological problems in parents. Comparing the data of the study on Primary Care Triple P and on Standard/Group Triple shows that the last interventions focus more on clinical child problems and parenting problems than the first. This means that the target group of both interventions was reached. However, we found that 24% of the children in the Primary Care

study experienced clinical problems on the total score of the SDQ at baseline, and significant decreases were found on most of the subscales of the SDQ at post and follow-up assessment. Since the Triple P-program aims to provide the minimally sufficient level of support parents require, our data suggest that Primary Care Triple P can be given to some parents and their children who have clinically elevated problems. As Primary Care provides less intense, less expensive, shorter and easier access than youth care, it is worthwhile to study this topic further.

A central element in the program is the development of parents' capacity for self-regulation, which involves teaching skills to parents that enable them to become independent problem solvers. This self-regulatory framework is operationalized by Sanders et al. (2003) in four concepts: self-sufficiency, parental self-efficacy, self-management, and personal agency. In our study on Primary Care Triple P we found small to moderate effect sizes on parental efficacy, and moderate effect sizes on parental sense of competence, which were not found in regular Dutch parenting consultations. In the study on Standard/ Group Triple P we found that parental competency was a mediating factor in reducing parental psychopathology. Our data concur with this central element of the Triple P program.

One way to measure the maintenance of program integrity is to examine the effects of the interventions. The results of the studies in this thesis emphasize the maintenance fidelity of the Primary Care and Standard/Group interventions. Besides assessing the results, it is obvious that a high quality of training courses, resources for parents, and manuals for practitioners contribute to program integrity.

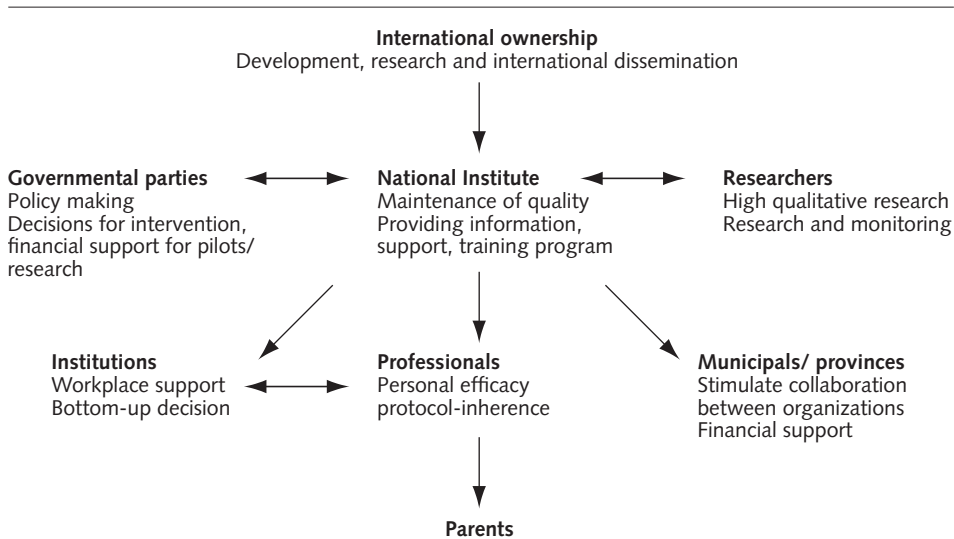
8.4 Implications for a large-scale implementation

In chapter 5 we concluded that the implementation trial in the Netherlands was successful. In this trial 79 professionals followed a training course on level 2/3 or 4 of Triple P. Both parents and professionals were satisfied with the quality and content of the Triple P program. The multilevel approach of the program improved the collaboration among the participating institutions. In addition, more uniformity in approach to parents existed.

Main conditions for a successful implementation are: a) a good organization structure with a local coordinator; b) a national quality system at national level in addition to the high quality training materials, practitioner manuals, and parent resources of the international organization; c) collaboration between participating organizations to ensure the stepped care approach; d) a national institute in the adopting country to enroll the program at a national level and to guarantee the quality; e) practical guidelines to support agencies in implementing the program. Because many parties play a role in the implementation process, it is important that they are aware of their roles and tasks, so that they can take their own responsibility and know who to address in the case of uncertainties or questions. We assume here that the better the implementation is organized - in terms of responsibilities and tasks of the participating

parties - the better the implementation and maintenance of quality will be guaranteed. We present an overview of responsibilities and tasks of all participating parties, in which the implementation theories and the learned lessons of the implementation trial of Triple P in the Netherlands are included. These results are presented in Figure 1 which can be used as input for a discussion when implementing the Triple P –program in the Netherlands.

Figure 1. A model of responsibilities and tasks in implementing Triple P in other countries



International level

The Australian University of Queensland is the owner of the Triple P – Positive Parenting Program. The University is responsible for further development and research in the Triple P program. The dissemination and implementation of the program is in hands of the Australian organization 'Triple P International' (TPI). The quality of the Triple P program is controlled by a system of professional training and workplace support, collaboration between researchers and practitioners, and by an ongoing refinement of interve0has now been implemented in sixteen other countries, the international owner is responsible for the dissemination and implementation in those countries. The international owners organize the education and supervision of native speaking trainers in other countries. To guarantee the program-fidelity at long-distance is more difficult and should be delegated to persons or institutes in the adopting country.

National level

National government and national institutes

Policy makers, e.g. the government and municipalities should make a decision whether or not to give financial support for the translation and adaptation of an evidence-based intervention. The Dutch government often supports such programs, but mostly only for a pilot-period. Because of the number of programs, and the working principles of market economy in the youth (mental) health care (i.e., interventions are often in competition with each other), the government does not choose for one single evidence-based program to implement on a broad-scale. Consequently, this means that after a pilot-period, a broad-scale implementation is not guaranteed. The municipalities at local level weigh up the pros and cons against the different programs, and choose to implement one program in their municipality. At this moment several different and competing programs are available for the same target group in the Netherlands. A discussion should be held about the pros and cons for implementing one evidence-based program in the Netherlands or several different programs for the same target group. Furthermore, an implementation plan and (financial) support should be arranged to guarantee the quality maintenance of the program. The national knowledge institutes should collaborate more in choosing what is the best program in the given context (target group and aim of the intervention).

National institute in adopting country

It is recommended to designate one reliable institution which is responsible for all necessary support in a broad-scale. The Dutch National Youth Institute is responsible for this in the Netherlands. The responsibilities of this institute should be to give advice to municipalities and local organizations how to implement the program, to guarantee a competent application of the program, to organize supervisory structures for the practitioners and a peer supervision support network. Because responsibilities of the Dutch Youth Institute and the international owners can be overlapping, this should be geared to each other.

Researchers

In implementing an evidence-based intervention to another country, it is not assumed that the results can be generalized to the adopting country. It is always possible that there are fundamental cultural differences. The contrast between cultures can be examined on the level of the professional, the target population and the health care system (Cuijpers et al., 2005).

In comparing the Australian and the Dutch cultures, we found several differences. First, the Australian system of youth care differs in some ways from Dutch youth care. To be able to refer Dutch parents and their children to more intensive youth care, they have to be diagnosed by another organization (Bureau Jeugdzorg) who can refer the clients to the more intensive youth care (indicated care). Second, the offer of the regular Dutch primary care parenting consultations exists of a variety of methods.

In a research-context this means that the 'care-as-usual' used for a control group in Australia differs from the 'care-as-usual' in the Netherlands. Third, the ethnic minority groups in the Netherlands exist of Moroccan, Turkish, Dutch-Antillean immigrants and refugees from all over the world. It will be necessary to examine the results on parenting and child behavior problems for this specific target groups. This can best be done in randomized controlled trials. The input from agencies is important for researchers undertaking research based on practice or field-generated issues (Sanders & Turner, 2005). The research should be conducted separately from the institute which is responsible for the implementation, to guarantee independent, non-biased, research.

Local level

Municipalities and Provincial Departments

Primary Care institutions and Youth Care / Mental Health institutions are divided by the Dutch system. The local institutions and the provincial operating institutions are divided by financial support and by the referral of the families. The two divided sectors were not used to work together. However, in executing the Triple P program, they had to work close together. The level 3 Triple P interventions were implemented in the local Primary Care institutions, as the level 4 Triple P interventions in the Youth Care / Mental Health institutions. The municipalities and provincial departments have the responsibility to work together to stimulate the collaboration between organizations operating in the different areas.

Local institutions

Local institutions play a crucial role in the implementation process. First, they have to decide carefully whether or not to adopt an innovation. They should be well informed about the weaknesses and strengths of the new intervention, and discuss the need to adopt the new intervention. Preferably they use a 'bottom-up' strategy, meaning that as much of the analysis as possible was made by the staff members and practitioners together, and that they participated in decision-making about the concrete objectives. This soon will get a process of co-operation going on and create a permanent basis. A top-down imposition of an innovation without consultation by the staff designated to implement the innovation, may increase the resistance to the change (Backer et al., 1996; Webster-Stratton & Taylor, 1998).

Staff members of the institutions have to deliver the preconditions for a successful execution of the innovation. This means that they provide practical, methodical, and emotional support to the practitioners. In Triple P a system of professional training is set up. Practitioners should have enough time to prepare for the training program, including an accreditation, and to have the possibility to discuss the innovation in a peer support network. Workplace support is needed. This means that the institutions integrate the program with the usual caseload and other responsibilities of the practitioners and give access to supervision or peer support networks (Sanders & Turner, 2005). Our experience is that a central person available for continuous backup turned

out to be crucial. In interviews with practitioners it was indicated that practitioners appreciate that a person internal in the organization is approachable for administrative issues (e.g., data-management), logistic issues (e.g., organization of training course), emotional support (e.g., feelings of resistance towards the new structured program). Budget for innovations should be available in the institutions for research, development and implementation of the interventions (Van Yperen & Bakker, 2008). A structured plan for implementation should be written in which the preconditions can be established (e.g., time and financial support, workplace support, and collaboration with other organizations).

Professionals

In the Triple P training the same self-regulatory approach is used as in the parent education program. The focus is on promoting professional behavior change through self-directed learning and personal responsibility for skill development (e.g., Karoly, 1993; Sanders & Turner, 2005). Professionals are encouraged to feel more competent and confident in problem solving and be able to act independently of others in decision-making. Besides the training program, workplace-support and peer support are important to reach this goal. A peer supervision network within an organization will increase practitioner confidence and self-efficacy in using a program. A supervision process is designed by the international owners to promote practitioner self-regulation (Sanders & Turner, 2005). The professional can be held responsible for the protocol-inherence of the intervention.

In the implementation trial we encountered that some professionals received a Triple P training program, but that they did not put the program into practice. It is important that an intervention is suited to the interpretation of one's job (Fleuren et al., 2002). It can be discussed whether it is a responsibility of the managers or the professionals to take care for a tie-up between the parenting intervention and the type of professional.

8.5 Limitations of the thesis

This thesis has several limitations which should be pointed out. First, in the two meta-analyses a limited number of studies, Triple P interventions, outcome measures, and moderators were used. The main focus was on level 4 interventions, behavioral problems in children and parenting styles and parental competency, and less on the other Triple P interventions (level 1, 2, 3, and 5), emotional problems in children and parental psychopathology or marital discord. We examined whether effects were moderated by age and gender of children, format of the intervention, and initial behavior problem scores of the children, and we left out other moderators, such as gender and age of the parents. Second, the effectiveness studies of the Triple P-program were only conducted on Primary Care Triple P and Standard/Group Triple P. The effects of the interventions on the other levels of the program

should be examined too. Third, the effectiveness studies in this implementation trial were not tested by randomized controlled trials, which is the most reliable design to test effectiveness. Fourth, the return on investment (e.g., cost-effectiveness study) has not been conducted in the evaluation of the implementation trial, although it is one of the most important evaluations (Kilbourne, 2007). Fifth, the studies were based on self-report measures of parents on their own parenting and the child behavioral and emotional problems. Sixth, in the studies assessments were taken at a follow-up period of three months. This is not long enough to examine the associations between improved parenting styles and parental competency and the long-term decreases in child behavioral problems.

Finally, we used the available knowledge about the steps that should be taken in implementing an innovation. We had knowledge about the influencing factors on the process and failures (Rogers, 1995; Glaser et al., 1983; Grol & Wensing, 1991), and we used (an adaptation of) the effective 'Replicating Effective Programs' (REP) framework' (Kilbourne et al., 2007). However, we still do not know whether we used the optimal strategy in implementing the Triple P program. The implementation strategy should be examined in a study comparing a standardized implementation strategy with a 'care-as-usual' strategy, preferably in a randomized controlled trial.

8.6 Recommendations for further research

Finally, we would like to end the discussion with some recommendations and directions for future research. First, randomized controlled trials have to be conducted on all levels of the Triple P interventions in the Netherlands to know whether the interventions are effective in our country too. We formulated the following recommendations for these effectiveness studies:

1. Because less international studies have been conducted on the brief and universal interventions, this should be given priority.
2. Designs with longer term follow-up data beyond 3 years have to be applied. This would give good insight into the effect maintenance of the decrease in behavior problems in children and parenting problems.
3. More extensive analysis of the effects of Triple P on characteristics of the parents and children should be conducted (e.g., gender, age).
4. Cost-effectiveness studies are important to know whether the costs of the new intervention are lower than for the existing interventions.
5. Because several programs are available with the aim to reduce psychological problems in children, it would be worthwhile to add other parenting interventions in research designs, to examine what the extra effects of Triple are (or not) on specific target groups.
6. As the Triple P interventions will be revised, extended or culturally adapted to other ethnic groups or special needs for parents and their children, new Triple P

interventions have appeared and will appear in the future. These interventions can be implemented and investigated in Dutch society.

7. As the focus of the studies is mostly on behavior problems in children, we have to examine whether the interventions will reduce emotional problems in children too, for example anxiety, stress and depressed feelings in children.
8. Self-regulation of parents is a central element in the Triple P interventions. It could be examined whether this is the main working mechanism in the intervention.
9. Implementation-strategies should be examined to get more insights into what is the best way in implementing the multilevel program of Triple P.

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9 Nederlandse samenvatting

9.1. Inleiding

Gedrags-, en emotionele problemen komen vrij vaak voor onder kinderen en adolescenten. Omdat opvoeden en het welzijn van kinderen aan elkaar zijn gekoppeld, zijn opvoedingsprogramma's ontwikkeld om de problemen van kinderen te verminderen. Van alle opvoedingsprogramma's tonen de gedragsinterventies voor gezinnen de sterkste bewijskracht. In 2006 en 2007 is een proefimplementatie naar Triple P – Positief Pedagogisch Programma uitgevoerd. Triple P is een van origine Australisch programma voor opvoedingsondersteuning aan ouders met kinderen van 0 tot 16 jaar. Het is een laagdrempelig en integraal programma met als doel (ernstige) emotionele- en gedragsproblemen bij kinderen te voorkomen of te verminderen door het bevorderen van competent ouderschap. Ouders leren de dagelijkse communicatie in het gezin te gebruiken om hun kinderen adequate steun te bieden en hun sociale vaardigheden en probleemoplossend vermogen te stimuleren. De positieve krachten in een gezin en de competentie van ouders worden zo versterkt en risicofactoren verminderd. Het Triple P-programma onderscheidt vijf niveaus van ondersteuning met daarbij variabele aanbiedingsvormen. Samen bieden zij een samenhangend systeem van interventies dat ouders steun op maat kan bieden. De opvoedingsondersteuning kan schriftelijk of mondeling zijn, individueel of groepsgewijs en ook als zelfhulpinterventie worden aangeboden. Triple P richt zich bovendien op opeenvolgende ontwikkelingsfasen en sluit aan bij de vragen en behoeften van ouders met kinderen van verschillende leeftijden.

Voor de duur van 1 jaar is een aantal Triple P - interventies voor ouders met kinderen van 0 tot 12 jaar in twee regio's in Nederland geïmplementeerd: een beperkte algemene informatiecampaigned (niveau 1), Triple P selectief (niveau 2), Triple P Basiszorg (niveau 3) en Standaard of Groep Triple P (niveau 4). Het doel van dit proefschrift is om de proefimplementatie te evalueren door het beantwoorden van vijf vragen:

1. Wat zijn de effecten van Triple P op de manier van opvoeden?
 2. Is Triple P effectief voor de gedragsproblemen van kinderen?
 3. Is Basiszorg Triple P een aanvulling op de bestaande programma's opvoedingsondersteuning in eerste lijns voorzieningen in Nederland?
 4. Wat zijn de resultaten voor de Standaard en Groep Triple P voor ouders en kinderen in de Nederlandse geestelijke gezondheidszorg en Jeugdzorg?
 5. Hoe kan een *multi level* programma in een ander land worden geïmplementeerd?
- In deze samenvatting zal ik bij elk van deze onderzoeksvragen kort stilstaan.

9.2. Wat zijn de effecten van Triple P op opvoeden?

Hoofdstuk 1 presenteert the resultaten van de meta-analyses die zijn uitgevoerd om de effectiviteit van de Triple P niveau 4 interventies op opvoedstijlen en competenties van de ouders te meten over verschillende doelgroepen. Tevens is de invloed op de effecten gemeten van verschillende kindvariabelen (leeftijd en geslacht), aanbiedingsvormen van de interventies en de gedragsproblemen van de kinderen bij aanvang van de interventie.

We hebben twee meta-analyses uitgevoerd: een meta-analyse om de effectiviteit van Triple P op opvoedstijlen en ouderlijke competenties te meten in de experimentele groep in vergelijking met de Triple P groep, en een tweede meta-analyse om te meten of de effecten van de nameting in de interventiegroep zijn gebleven na verloop van tijd. Negentien studies zijn geselecteerd voor deze analyses. Grote effecten zijn gevonden op de opvoedstijlen bij de nameting ($d = 0.68$) en bij de follow-up metingen 3 tot 12 maanden later ($d = 0.80$). Grote effecten zijn gevonden op de ouderlijke competenties bij de nameting ($d = 0.65$) en bij de follow-up meting 3 tot 12 maanden later ($d = 0.67$). Studies met een hogere percentage jongens ($\geq 68.3\%$) bleken op langere termijn grotere effecten te resulteren op de ouderlijke competentie dan studies met een lager percentage ($d = 0.50$ vs. $d = 1.20$). Geen enkele moderator variabele bleek significant te zijn. De positieve resultaten gaven aan dat de interventies bij verschillende gezinnen kunnen worden toegepast.

9.3. Wat zijn de resultaten van Triple P op de gedragsproblemen van kinderen?

Hoofdstuk 2 doet verslag van de resultaten van de meta-analyses die zijn uitgevoerd om de effectiviteit van de interventies op niveau 4 van Triple P te meten op de vermindering van gedragsproblemen van kinderen, en om de effecten van de invloed van moderators te meten, zoals leeftijd en geslacht van kinderen en de aanbiedingsvormen van de interventies. Hiervoor voerden we twee meta-analyses uit. In de eerste meta-analyse is de effectiviteit van Triple P op de gedragsproblemen van kinderen gemeten. Dit is direct na de interventie gemeten in vergelijking met de controlegroep. In de tweede meta-analyse is gekeken of de effecten in de interventiegroep na verloop van tijd zijn gebleven. In totaal zijn er 25 studies gevonden die de Triple P niveau 4 interventies betroffen. Hiervan zijn 15 studies geselecteerd voor de meta-analyses. Voor elke studie is een gestandaardiseerde effectgrootte, Cohens d , berekend en een analyse was uitgevoerd met het zogenaamde 'random-effects' model. Middelgrote tot grote effecten op gedragsproblemen van kinderen zijn gevonden die tot 6 en 12 maanden later aanwezig waren. Een groot effect was gevonden bij de meting na de interventie ($d=0.88$) en gemiddelde effectgrootten na 6 en 12 maanden, respectievelijk $d = 1.07$ en $d=0.84$. Weinig significante moderators zijn gevonden, dat erop wijst dat Triple P succesvol gebruikt kan worden bij verschil-

lende gezinnen, typen problemen, manieren waarop het wordt aangeboden en leeftijd van kinderen. Onderzoeken met meer meisjes toonden grotere effecten op de lange termijn dan onderzoeken met minder meisjes ($d=1.08$ vs. $d=0.37$). Meer analyses zijn nodig om de betekenis van dit resultaat te bepalen omdat jongens oververtegenwoordigd waren in alle onderzoeken. Op de lange termijn waren de effecten in zeven studies waarin de beginnende gedragsproblemen van de kinderen in het klinisch gebied lagen, groter dan in de negen studies met lagere scores ($d=0.36$ vs. $d=1.08$). De conclusie is dat de gedragsproblemen van de kinderen aanzienlijk verminderden door de niveau 4 interventies van het Triple P programma.

Conclusie na hoofdstuk 1 en 2

De analyses in beide meta-analyses over het opvoedgedrag van ouders (hoofdstuk 1) en gedragsproblemen van het kind (hoofdstuk 2) betroffen zowel universele als selectieve (hoog-risicogroepen) steekproeven. Dit betekent dat de interventies zowel in preventie-afdelingen van geestelijke gezondheidszorg instellingen als in de geïndiceerde jeugdzorg kunnen worden toegepast. De positieve resultaten lijken de wijdverspreide implementatie van het programma in een toenemend aantal landen over de hele wereld te ondersteunen.

9.4. Is Gericht Advies (niveau 3 Triple P) een aanvulling op de bestaande programma's opvoedingsondersteuning in de eerste lijn voorzieningen in Nederland?

Hoofdstuk 3 presenteert de resultaten van twee evaluatiestudies van de reguliere Nederlandse opvoedhulp en de Basiszorg Triple P (Primary Care Triple P). De Nederlandse reguliere opvoedhulp in de eerstelijns voorzieningen omvat een variatie in benaderingen. Beide interventies richten zich op ouders van kinderen met milde tot matige gedrags- en emotionele problemen. De interventies zijn onderzocht in een voor-, na- en follow-up meting en zijn met elkaar vergeleken. Beide onderzoeksgroepen zijn gematched op het inkomen van de ouders, het percentage eenpersoons huishoudens, het aantal inwoners en de urbanisatie-graad. Tijdens een periode van 1 jaar van werving zijn in totaal 189 deelnemers bereikt en 129 ouders gaven toestemming om mee te doen: 42 gezinnen ontvingen de reguliere Nederlandse opvoedhulp en 87 gezinnen de Basiszorg Triple P (Primary Care Triple P). Significante afnamen van gedrags- en emotionele problemen zijn in beide groepen gevonden en waren na 3 maanden nog aanwezig. In beide groepen verbeterden de opvoedstijlen significant zowel bij de nameting als bij de follow-up meting. Alleen in de reguliere Nederlandse opvoedhulp-groep verbeterde de opvoedstijl 'permissiviteit' niet significant. Enkel in de Triple P groep zijn significante effecten gevonden voor tevredenheid, *efficacy* en algemeen gevoel van competentie van de ouders. In vergelijking met de reguliere Nederlandse opvoedhulp liet de Triple P groep significant minder dysfunctionele opvoedstijlen zien en een hogere score op de ouderlijke competenties, zowel in de

nameting als in de follow-up meting. Deze resultaten zijn veelbelovend voor zowel voor de reguliere opvoedingsondersteuning in Nederlands als voor de Basiszorg Triple P (Primary Care). Gegeven het feit dat Basiszorg Triple P betere resultaten liet zien op de opvoedstijlen en ouderlijke competenties, is het echter mogelijk dat de emotionele en gedragsproblemen van de kinderen zullen afnemen op de langere termijn. Dit maakt dat de Basiszorg Triple P de voorkeur heeft boven de reguliere Nederlandse opvoedhulp. Verder onderzoek is aanbevolen om deze veelbelovende resultaten te bevestigen, bij voorkeur gerandomiseerd effectonderzoek.

9.5. Wat is de impact van de Groep en Individuele Triple P interventies op het kindgedrag, opvoeden en psychopathologie van de ouders in de Nederlandse praktijk?

In hoofdstuk 4 zijn de resultaten van vier steekproeven gepresenteerd. Drie steekproeven betroffen een *single group design* en de vierde steekproef een quasi-experimenteel design. Voor, direct na en drie tot zes maanden later zijn vragenlijsten afgenomen. In totaal hebben 298 ouders aan deze vier onderzoeken meegedaan. Het eerste doel was om met deze onderzoeken de resultaten van de Standaard en Groep Triple P - interventies te meten van gedrags- en emotionele problemen van kinderen. Het tweede doel was het meten van opvoedproblemen en psychische gezondheid van ouders. Ten derde is de relatie tussen ouderschap en psychopathologie van de ouders bestudeerd.

De resultaten gaven aan dat de interventies effectief zijn op de vermindering van kindproblemen, dysfunctionele opvoedstijlen, in de verbetering van de *efficacy* van ouders en in de vermindering van depressieve klachten, angsten en stress bij ouders. Er was bewijs dat de effecten na drie tot zes maanden nog aanwezig zijn. Deze resultaten komen overeen met de internationale studies naar de Triple P niveau 4 interventies. Hoewel internationale studies aangeven dat de afname van emotionele en gedragsproblemen van kinderen een mediërende factor is in de afname van de psychopathologie van de ouders, konden deze resultaten dit niet bevestigen. In onze studie vonden we wel dat gevoelens van competentie bij ouders een mediërende factor is bij de afname van psychopathologie bij ouders. Een toename van het gevoel van competentie van de ouders, veroorzaakt door de verbetering van het opvoedgedrag, bleek een mediërende factor te zijn. De conclusie is dat de Standaard en Groep Triple P interventies een belangrijke aanvulling kunnen zijn voor de instellingen voor geestelijke gezondheidszorg in Nederland, speciaal voor ouders met depressieve klachten, angsten of stress. Verder onderzoek is aanbevolen, bij voorkeur gerandomiseerd effectonderzoek.

9.6. Hoe kan een *multi level* programma in een ander land worden geïmplementeerd?

In hoofdstuk 5 wordt het implementatieproces van het integrale Triple P programma beschreven. Daarbij wordt gebruik gemaakt van het raamwerk 'Repliceren Effectieve Programma's' (REP) (Kilbourne, 2007). Volgens dit raamwerk is het implementatieproces onderverdeeld in vier fasen: pre-conditie, pre-implementatie, implementatie en onderhoud en evolutie. We pasten het raamwerk aan door elementen toe te voegen of weg te laten, zodat het geschikt was voor een integrale aanpak. Hierdoor is een praktisch raamwerk ontwikkeld voor de implementatie van *evidence-based multilevel* programma's in een ander land. Ook evalueerden we de proefimplementatie. Voor dit doel zijn semi-gestructureerde interviews onder beroepskrachten, managers en experts afgenomen en namen we een vragenlijst af over de samenwerking tussen de diverse instellingen.

Het REP raamwerk bleek zeer bruikbaar voor de implementatie van het *multilevel* programma Triple P. Het raamwerk bood een gestructureerde aanpak voor implementatie. Omdat de belangrijkste fasen van implementeren in detail worden beschreven, ondersteunde het raamwerk bij de organisatie en is een raamwerk voor *multilevel* programma's ontwikkeld. Drie belangrijke aanpassingen zijn gemaakt om het *evidence-based multilevel* programma te implementeren in een ander land dan het land waarin het is ontwikkeld. Ten eerste was een analyse van mogelijke fundamentele culturele verschillen tussen de instellingen die de ondersteuning aanbieden, de doelgroep en het gezondheidszorgsysteem noodzakelijk. Ten tweede verschilde de organisatie van de implementatie. De organisatie van implementatie van een *multi-level* programma in een ander land is complexer dan een enkele interventie. We organiseerden de implementatie op vier niveaus: op internationaal, nationaal, lokaal en instellingsniveau. De derde aanpassing betreft de samenwerking. Bij de implementatie van een *multilevel* programma is het belangrijk dat de voorwaarden voor samenwerking aanwezig zijn om een samenwerking op de lange termijn te garanderen.

Over het algemeen concludeerden we dat de proefimplementatie succesvol was. In beide regio's die meededen aan de proefimplementatie zijn de interventies structureel in het zorgsysteem geïmplementeerd. Op dit moment is het Triple P Programma in 17 gemeenten geïmplementeerd en nieuwe gemeenten hebben interesse getoond. Er zijn vier belangrijke factoren die het succes verklaren. De eerste is de systematische aanpak door het gebruik van het REP raamwerk. De tweede is de hoge kwaliteit van het Triple P programma zelf. De derde is de ondersteuning van de beroepskrachten bij de uitvoering en organisatie van hun werk. Tenslotte bevorderde de integrale aanpak van het Triple P programma de samenwerking tussen de deelnemende instellingen. Ook ontstond meer eenheid in handelen naar de ouders.

Uit de resultaten van de effectstudies van de Basiszorg Triple P (Primary Care) en Standaard/Groep Triple P bleek dat Triple P significante effecten had op de opvoedingsstijlen van ouders en dat de gedragsproblemen bij de kinderen minder werden. De proefimplementatie liet ook zien dat een aantal voorwaarden belangrijk is bij de

implementatie. Deze bevindingen kunnen worden meegenomen naar een landelijke implementatie. De belangrijkste voorwaarden voor een succesvolle implementatie zijn: a) een goede organisatiestructuur met een lokale coördinator; b) een nationaal kwaliteitssysteem op een nationaal niveau, in aanvulling op de hoge kwaliteit van trainingsmaterialen, handleidingen voor beroepskrachten en werkboeken voor ouders; c) samenwerking tussen deelnemende organisaties om de integrale aanpak te garanderen; d) een nationaal instituut in het adoptieland om het programma op een nationaal niveau uit te rollen en om de kwaliteit te garanderen; e) praktische richtlijnen om de instellingen bij de implementatie van het programma te ondersteunen. Omdat vele partijen een rol spelen in het implementatieproces, is het belangrijk dat iedereen zich bewust is van zijn of haar rol en taak. De conclusie is dat hoe beter de implementatie is georganiseerd, in termen van taken, bevoegdheden en verantwoordelijkheden van de deelnemende partijen, hoe beter de implementatie verloopt en het behoud van de kwaliteit wordt gegarandeerd.

10 Dankwoord

Toen Louis Tavecchio mij enkele jaren geleden vroeg of ik wilde promoveren, heb ik dat resoluut van de hand gewezen. Ik zag het niet voor me om met twee jonge kindjes thuis, nog vele uren te besteden aan een proefschrift. Het was al een uitdaging om mijn werk op het Trimbos-instituut met de zorg voor de kindjes te combineren. Is het ook niet dat Triple P voorschrijft om realistische verwachtingen van jezelf en je kinderen te hebben, en voldoende vrije tijd voor ontspanning te hebben? Promoveren hoorde daar niet bij.

Toch is het ervan gekomen om dit proefschrift te schrijven. In alle stilte begon ik toch aan dit masterplan te werken, omdat het ook heel inspirerend is en een goede manier bleek om mijn kennis te verdiepen en uit te breiden, en natuurlijk een kroon is op al het werk naar Triple P.

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Een aantal collega's van het Trimbos-instituut zijn van onschatbare waarde geweest. Het geloof in de populatiegerichte aanpak van ex-collega Ernst Bohlmeijer bleek zeer terecht. Het schrijven van het laatste artikel over de implementatie van Triple P, was een mooie afsluiting van onze samenwerking in deze studie naar de proefimplementatie. Filip Smit leerde me de geheimen van de meta-analyses en de kunst van het schrijven van een artikel kennen. Filip's gave om ingewikkelde analyses eenvoudig, geduldig en met humor uit te leggen, maakte dat het gewoon leuk was om deze analyses uit te voeren.

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Het Triple P programma heeft een grote vlucht genomen en wordt nu in vele gemeenten uitgevoerd. In de afgelopen jaren heb ik kennis gemaakt met vele beroepskrachten, managers en andere onderzoekers wereldwijd. Dank voor een kijk in jullie keuken, jullie medewerking, kritische blik en samenwerking. Ik hoop velen van jullie nog vaak te ontmoeten op weg naar het creëren van een optimaal klimaat om kinderen op te voeden.

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Tenslotte is er nog de hamvraag 'hoe kan het toch dat ik dit proefschrift heb geschreven terwijl dat moeilijk te combineren is met een jong gezin?'. Dat heb ik aan Rob te danken. De voorwaarde dat ik thuis aan het proefschrift kon werken, was dat ik dit enkel deed vanuit inspiratie & innerlijke motivatie. Mijn valkuil om door te gaan omdat het nu eenmaal moet, is vele malen door Rob in de kiem gesmoord. Dit is voor mij de meest belangrijke les geweest tijdens dit proces. En dan Bo & Floor. Nooit ben ik zo intens gelukkig, bezorgd, blij, ontroerd, gefrustreerd, boos, moe en dankbaar geweest sinds jullie er zijn. Als geen ander hebben jullie me laten zien dat het schrijven van een proefschrift een bijzaak is.

Ik draag dit proefschrift op aan alle ouders en opvoeders in hun pogingen hun kinderen de aandacht en zorg te geven die ze nodig hebben om volwassen te worden.



In this thesis the implementation of the evidence-based Triple P – Positive Parenting Program in the Netherlands was examined. Because parenting is associated with the wellbeing of children, parenting programs are developed to address the child problems. Among all developed parenting programs, the Behavioral Family Interventions (BFI) have the strongest empirical evidence. The aim of Triple P is to prevent and offer treatment for mild and severe behavioral, emotional and developmental problems in children from birth to the age of 16 years, by means of enhancing the knowledge, skills and confidence of their parents. In 2006 and 2007 an implementation trial on the Triple P – Positive Parenting Program was conducted in the Netherlands. In a one-year period interventions of different levels of the Triple P program were implemented in two regions in the Netherlands. In the first part of the thesis two meta-analyses on the effects on parenting and behavior problems in children are reported. In the second part the results of Primary Care Triple P and Standard/ Group Triple P in Dutch practice are monitored. In the last part the implementation process of the multilevel Triple P Program is described using the effective ‘Replicating Effective Programs’ (REP) framework. The results are presented and are followed by a general discussion which contains a summary of the main findings, followed by discussion and directions for the future.