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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problems), such as aggressive or delinquent behavior, and emotional problems (internalizing problems, such as withdrawn behavior, physical complaints, anxiety, or depressive complaints.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).

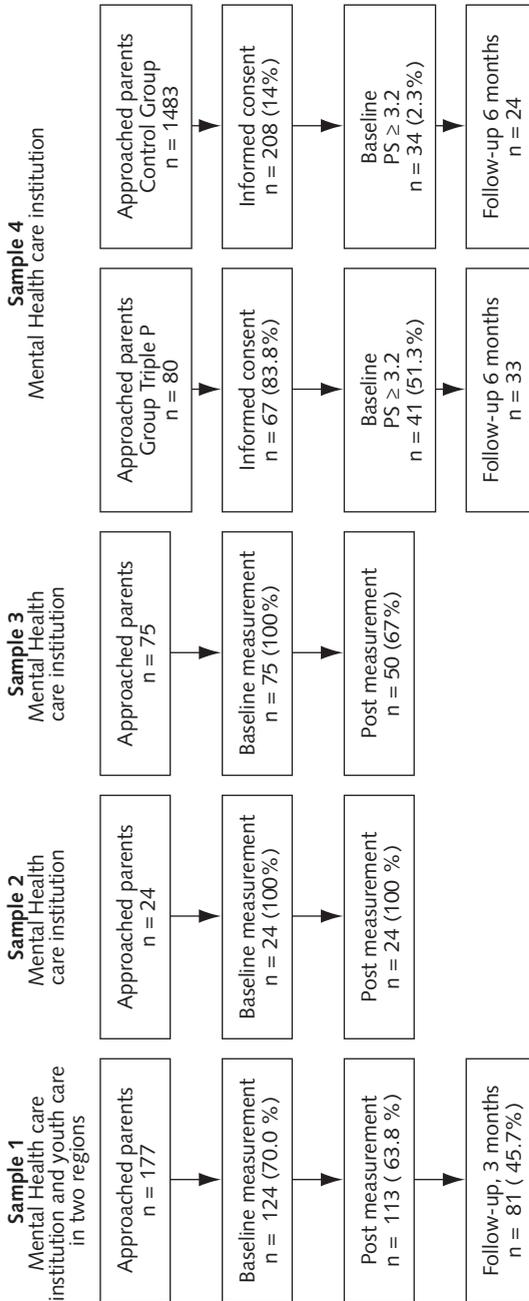
Sample 1. In this sample, parents were asked to participate in an evaluation study by staff of several youth and family care institutions who were trained to apply the Standard or Group Triple P. During a one-year period of recruitment, a total of 177 participants were approached and 124 (70%) parents 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.



PS = Parenting Scale.

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



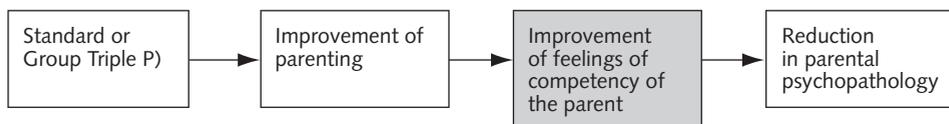
Standard or Group Triple P
Improvement of parenting
Reduction of child behavior problems
Reduction in parental psychopathology.

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		Mediator	β			R^2	
Condition 1							
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		
		β	β	R^2	β	$R^2 =$	
Reduction in parental psychopathology	Improvement of parenting styles						
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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