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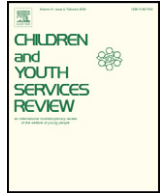
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# Evaluating the effectiveness of combining Home-Start and Triple P parenting support in the Netherlands



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## ABSTRACT

The effects of Home-Start compared to Home-Start extended with Triple P group training were studied. The underlying theoretical models of change of both programs complement each other and therefore it was assumed that combined support leads to increased positive outcomes. Outcomes related to parental wellbeing, parenting behaviour and child behaviour were included. One hundred forty four parents, all mothers, were randomly assigned to either the Home-Start program or the combined support of Home-Start and Triple P group level 4. Parents reported on wellbeing, parenting behaviour, and child behaviour at baseline, post-program and at 6-month follow-up. Based on intention to treat analyses, families in the combined intervention condition showed similar effects on the majority of primary and secondary outcomes as the only receiving Home-Start condition. A negative effect on parental depression and on two subscales of the Child Behavioral Checklist (anxiety and oppositional defiant behaviour) was found for families in the combined Home Start and Triple-P condition. The hypothesized stronger positive effect of combining Home-Start and Triple P support on selected outcome measures was not confirmed. Combining promising evidence-based parenting programs with complementary underlying theoretical frameworks does not necessarily lead to better results.

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## 1. Background

Parenting young children can be demanding, especially when families are experiencing multiple stresses in their daily lives (Hermanns, 1998). The long-term consequences of dysregulated parenting behaviour, with child maltreatment being the most severe form of dysregulated parenting, are well known. For an overview see Hermanns (2011). Many parenting support programs are therefore designed to enhance more positive parenting skills and to reduce long-term negative impact on child development (Eisner, Nagin, Ribeaud, & Malti, 2012). Two types of widely implemented interventions can be distinguished: non-manualized home visiting support (such as Home-Start provided by volunteer community members) and manualized parent management trainings (such as Triple P provided by trained professionals).

Evaluation studies of parenting support programs showed diverse results. A systematic review and meta-analysis on home visiting programs by Kendrick et al. (2000) reported improvement in the quality of the home environment and parenting behaviour. Sweet and Appelbaum (2004) found several (moderate) positive effects of

different elements of home visiting programs for families with young children in their meta-analysis. Also Olds, Sadler, and Kitzman (2007) found that home visiting programs result in positive changes. However results were inconclusive related to which aspects caused the positive effects. Home visiting is a method of delivering services rather than a service in itself. Therefore, what actually happens during the home visits related to visitor-parent interaction and actual activities inducing change remains difficult to quantify. A review on paraprofessional home visiting programs found that these programs achieved modest effects on decreased harsh parenting behaviour and improved cognitive development (Peacock, Konrad, Watson, Nickel, & Muhajarine, 2013). However, on a majority of the studied outcomes the included studies failed to establish desired effects. This could be due to the high-risk families enrolling in support and the limited possibilities of support providers to reduce these present contextual risks in the limited amount of time they are working with families. Additionally, home visiting programs often address a variety of problems rather than a specific target group or problem. A more targeted approach might yield more positive outcomes (Peacock et al., 2013).

Also the results of manualized parent management training evaluations are mixed. Positive results are repeatedly found for reducing disruptive behaviour (Weisz & Kazdin, 2010). Fewer positive results were found when these programs are implemented as a preventive community based strategy instead of an intervention for selected

Abbreviations: PMT, parent management training.

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families (Eisner et al., 2012; Scott, 2005). A meta-analysis on parent management training emphasized that observed results were related to family characteristics. More disadvantage families (low SES, more present risk-factors) seemed to benefit relatively more from these programs than less disadvantaged families (Gardner, Hutchings, Bywater, & Whitaker, 2010).

In this paper we report the combined effects of volunteer home visiting program Home-Start as a parent support program and Triple P group level 4 as a parent management training. Both programs are based on the assumption that it is best to support families during the early onset of parenting problems and preferably as early on in a child's life. They differ, however, in their approach.

Home-Start focuses on improving parental wellbeing through social support in the form of 'temporary friendship' offered by volunteers. The underlying theoretical model of change, as formulated by Hermanns, Venne-van-de, and Leseman (1997), describes the sequence of change within families. The support provided in the program may increase parental wellbeing, which is considered as a primary outcome. More positive parenting experiences, in turn may result in increased feelings of competency. Feeling more competent will result in more positive parenting behaviour, ultimately leading to a reduction of child problem behaviour. The latter two are considered secondary outcomes of the program. These mechanisms of change have been confirmed in several evaluation studies of the program (Asscher, Dekovic, Prinzie, & Hermanns, 2008; Dekovic et al., 2010; Hermanns, Asscher, Zijlstra, Hoffenaar, & Deković, 2013). Home-Start is based on principles such as respect and equality rather than offering manualized support. Families are supported through demand-oriented strategies and parents themselves defined the problems addressed during support. In addition, parents are encouraged to design and evaluate self-generated solutions. This type of support results in a variety of strategies and activities implying that each support trajectory is unique.

So far research into the effectiveness of Home-Start in the Netherlands has shown moderate effects in parental wellbeing, parenting behaviour and perception on child behaviour on short-term follow-up (Asscher, Dekovic and Hermanns, 2005; Asscher, Hermanns and Dekovic, 2005; Asscher, Hermanns, Dekovic, & Reitz, 2007). A long-term follow-up study from Hermanns et al. (2013) reported more evident reduction of child behavioural problems within the Home-Start group compared to the comparison group receiving no support. A 10 year follow up showed that effects were still present after 10 years (Aar, v Asscher, Zijlstra, Deković, & Hoffenaar, 2015). Several Home-Start evaluation studies in the United Kingdom show positive results on some but not on all selected outcome measures. The study of Frost, Johnson, Stein, and Wallis (2000) showed increased parental wellbeing, positive outcomes on social support and parenting behaviour. However, Barnes, MacPherson, and Senior (2006) and Barnes, Senior, & MacPherson (2009) found no effects on parental wellbeing but did find a larger reduction in parent-interaction difficulties compared to matched-controls in an additional study. McAuley, Knapp, Beecham, McCurry, and Sleed (2004) found no changes within the Home-Start group even though qualitative data of the study indicated that families valued the services and that the support had resulted in a change in their lives.

Manualized Triple P, provided by professional supporters, presents parents with a fixed package of knowledge, activities and parenting techniques on how to positively influence their children's development and manage difficult behaviour (Barlow & Stewart-Brown, 2000; de Graaf, Speetjens, Smit, de Wolff, & Tavecchio, 2008b; Sanders, Markie-Dadds, & Turner, 2003). The program focuses on changing parenting behaviour to enhance parent-child interaction and protective factors such as parental wellbeing. It aims to reduce risk factors that are associated with influencing child development such as negative parenting. These factors are targeted by increasing knowledge, parenting skills and confidence of parents. The positive parenting program is based on five principles; ensuring a safe and engaging environment,

creating a positive learning environment, using assertive discipline, having realistic expectations as parent and taking care of oneself as a parent. The program consists of different modules and has five intervention levels increasing in intensity. All levels of the program are based on social learning principles to change parent-child interaction. Tailoring content of the support towards the personal situation of families is limited compared to the home visiting program Home-Start.

Positive results for the Triple P program were found in some but not all conducted evaluation studies (Nowak & Heinrichs, 2008; Sanders et al., 2003; Sanders, Kirby, Tellegen, & Day, 2014). In the Netherlands de Graaf, Speetjens, Smit, de Wolff, and Tavecchio (2008a); de Graaf et al., 2008b) found positive effects of Triple P level 4 on reducing child behavioural problems, dysfunctional parenting style, improving efficacy and parental wellbeing. Later studies found however that these results in general did not exceed those of care as usual (Onrust, De Graaf, & Van der Linden, 2012). Other studies also did not find positive effects of the program on outcomes related to child behavioural problems or parenting practices (Eisner et al., 2012; Malti, Ribeaud, & Eisner, 2011).

In the current study we included the parent management training Triple P group level 4. This level targets families experiencing behavioural problems in children and is implemented as targeted and community based preventive strategy. The selection of this parent management training was based on observations during the previous Home-Start studies in the Netherlands (Asscher, Dekovic et al., 2005; Asscher, Hermanns et al., 2005): 1) baseline scores showed clinical child behavioural problems. 35% of families reported problems in the clinical range on the CBCL; 2) changes in child behavioural outcomes were not established at short-term follow up; and 3) families indicated that they would have gained from specific information and training in parenting skills on how to deal with child behavioural problems in addition to the support they had received from their Home-Start volunteer. Triple P group level 4 is offered in the Netherlands both as a universal or selective preventive program for families experiencing mild to severe parenting problems and child behavioural problems (de Graaf et al., 2008b); and level 4 is considered the core program of Triple P.

The described underlying theoretical models of change of both programs seem to complement each other: long-term non-manualized support within the home setting and short-term structured and more intense group support focusing on knowledge transference. Due to this complementary aspect, we hypothesize that offering combined support consisting of Home-Start and Triple P group 4 will result in stronger effects on parental wellbeing, parenting behaviour and child behaviour, than offering Home-Start only. In addition there is a need for evidence that offering these programs can result in (long-term) changes within families in a community based setting. To our knowledge, the combined effect of these two universal parenting support programs in every-day practice has not yet been studied.

## 2. Method

### 2.1. Participants and recruitment

The current study was conducted simultaneously with an evaluation into the effectiveness of Home-Start compared to care as usual parenting support. The Home-Start national office selected the 18 municipalities where Home-Start was implemented which were either not yet involved in the other evaluation study or had a larger capacity to participate in research. Coordinators of 16 Home-Start schemes in 14 municipalities accepted and actively recruited respondents. Families were recruited in the period of January 2009 – December 2011. Every newly enrolled family in Home-Start with a child in the age range of 1,5–3,5 years was approached for participation. Furthermore, families needed a sufficient knowledge of the Dutch language to be able to participate in a Dutch-spoken parent management training. No selection criteria other than sufficient knowledge of the Dutch language were

formulated. Since the aim was to evaluate parenting support in everyday practice, no additional restrictions were formulated. Meaning that families were allowed to use additional forms of support during the research period if they or a third party such as a general practitioner or social worker felt this was needed.

144 families were approached for participation. 39 families did not enroll in the study. 20 parents declined to participate in general, eight families did not meet the language inclusion criteria, six families were experiencing too severe problems at the time of enrollment and five families could not be contacted. The remaining 105 respondents, all mothers, were randomized to either of the two research conditions. After random allocation to either of the two intervention conditions (Home-Start support being the comparison condition and Home-Start combined with Triple P group 4 the intervention condition), 43 families enrolled in the intervention and 40 families in the comparison condition. (Fig. 1).

During the study respondents dropped out either because they did not return the questionnaire after repeatedly being contacted by the research team or because families dropped out during the support program or could no longer be contacted by the program coordinators or the research team. At pre-test seven parents dropped out of the Home-Start program. The reasons for dropout provided by the Home-Start coordinators, were either that support provided was not in line

with expectations of the families or that support was not sufficient enough compared to the complexity of experienced problems.

## 2.2. The interventions

### 2.2.1. Home-Start

Home-Start is a parenting support program that offers temporary friendship through volunteers to families in need with young children in the age range of zero till seven. Volunteers do not have a specific degree in parenting support. They are trained for at least 20 h in Home-Start principles by their scheme coordinator. Instead of professional knowledge Home-Start's key-component to induce change in parental wellbeing, parenting behaviour and ultimately in child behaviour is informal social support in the form of 'the gift of time' and 'temporary friendship'. When a parent is successfully matched to a volunteer, weekly home visits of on average 4 h during a period of ten to twelve months are conducted. During the home visit the volunteers most often has contact with one parent, in the majority of the support trajectories this is the mother. The children can be present, but often children are at the kindergarten or at school during the home visits. Partners and other family members can be present as well, but this is not obligatory and will vary not only per family but also per visit during the support trajectory. Through this support the program aims to prevent crises in

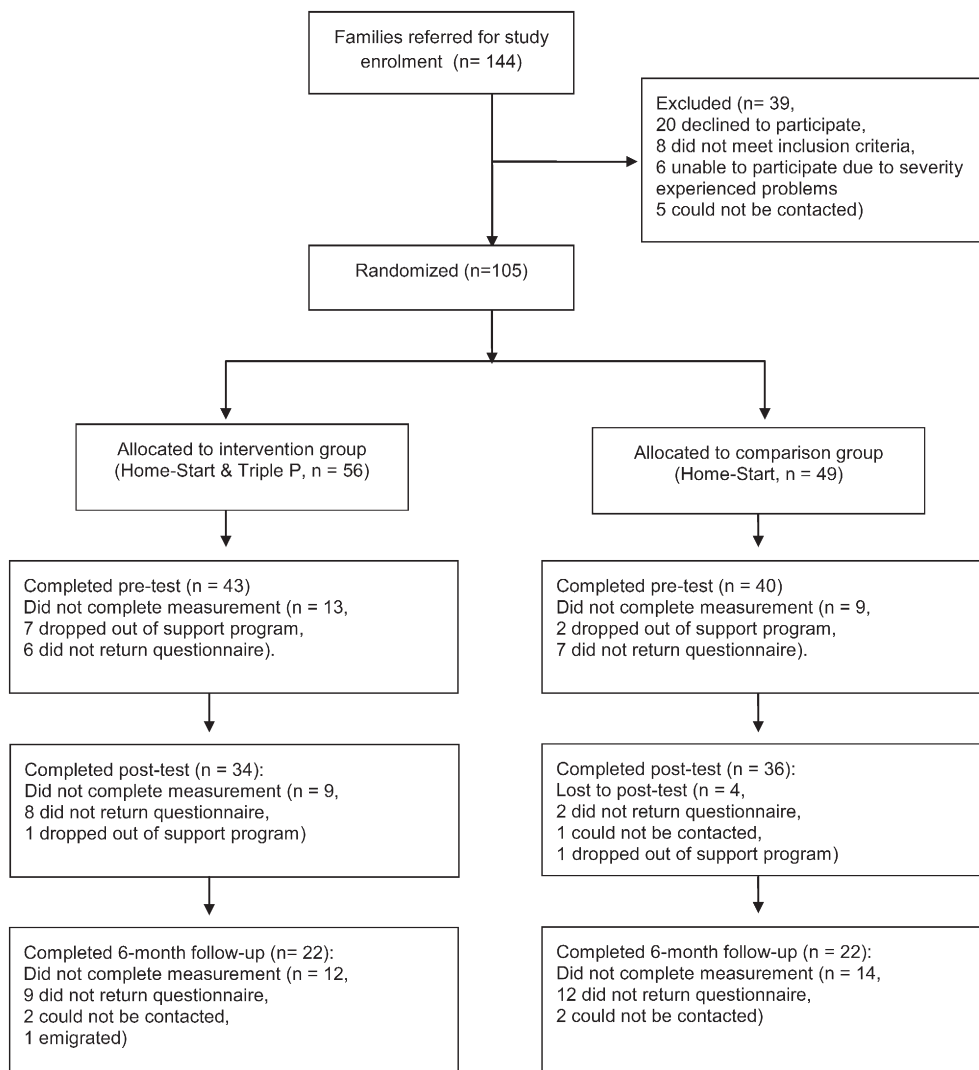


Fig. 1. Study flow chart per respondent group.



families (Frost et al., 2000). An important principle is to avoid taking burdens from parents, but instead to encourage and support parents in taking the lead in formulating, planning and attaining personal goals.

#### 2.2.2. Triple P level 4

Triple P group level 4 is an intensive eight week parenting skills training which is suitable for parents who experience parenting problems and child problem behaviour. Five weekly two-and-a-half hours group sessions and three individual telephone consultations are conducted. The level 4 training addresses parenting from a broad perspective, which includes parent-child interaction, parenting skills and used parenting strategies (Sanders, 2008). Trained and accredited professionals in the Triple P program provided the training. The group training is offered to a group of maximum 12 parents. Parents can enroll individually; it is not necessary or obligatory when it concerns a two-parent household for both parents to participate in the training. The program does encourage parents to participate together.

#### 2.2.3. Procedure

The coordinators of the Home-Start program recruited the respondents. All respondents were mothers. Both Home-Start and Triple P welcome fathers in their services, however as is often seen in parenting support programs including fathers is a challenge. They transferred contact information of eligible families to members of the research team, who then explained the study and accompanying procedures to families. Only one parent of the selected families was asked to enroll in the study. In the current study in all cases this was the mother. After receiving detailed information about the research, the parent signed informed consent. When the parent had agreed to participate, the parent was randomized to either of the two intervention conditions. After allocation to the intervention condition the first self-report questionnaire was sent by mail and the first home visit by a trained researcher scheduled. During this home visit the questionnaire was collected (T1, pre-test). The same procedure took place after termination of the support, in general ten to twelve months after program enrollment (T2, post-test). At six-month follow-up (T3) the third questionnaire was filled in and returned to the research team by mail.

Parents (mothers) that were allocated to the combined intervention condition were offered to participate in a Triple P group level 4 training three to five months after the start of Home-Start to avoid starting with too much support at the same time. The Triple P level 4 program was available as a regular preventive support program in most of the participating municipalities. In the municipalities where Triple P was not yet available, the research team facilitated parenting groups. Two members of the research team were trained and accredited as Triple P group 4 providers by the Dutch Youth Institute, which is responsible for implementing the Triple P program in the Netherlands. These two researchers were not involved in the collection of the evaluation data of research respondents that enrolled in the parenting course.

#### 2.2.4. Measures

Based on the theoretical models underlying the parenting support programs the below mentioned outcome measures were selected. Cronbach's alphas are based on the current research sample.

#### 2.2.5. Parental wellbeing

We measured parental wellbeing by including instruments measuring parental depression, experienced daily parenting hassles, parental stress, empowerment and perceptions on parenting.

First, a sub-scale of the Brief Symptom Inventory (BSI; Derogatis, 1975) was used to assess parental feelings of depression. The subscale consisted of 6 items rated on a 5-point scale (0 = 'not at all applicable' to (4) = 'very applicable'. Sample items include 'feeling worthless', 'feeling lonely' or 'not being interested in anything'. Cronbach's coefficient ranged from 0.79 to 0.84.

Second, daily parenting hassles were measured by the Dutch translation of the Parenting Daily Hassles Scale (Crnic & Greenberg, 1990). The frequency and intensity of 20 daily parenting experiences were rated; *frequency* on a scale of 0 = never to 4 = constantly and *intensity* on a scale from 1 (low level of experienced hassle) to 5 (high level of experienced hassle). A total daily hassle score was calculated making use of the separate frequency and intensity scores. Parents rated item such as: 'Difficulties in getting kids ready for outings and leaving on time' or 'The kids resist or struggle with you over bed-time'.

Third, parenting stress was assessed by including four subscales of the Parental Stress Index (Abidin, 1983; De Brock, Vermulst, Gerris, & Abidin, 1992). *Sense of competence* included 15-items, such as: 'Raising my child is more difficult than I expected it to'. Cronbach's coefficient ranged from 0.91 to 0.94. *Role restriction* a 7-item subscale consisted of statements such as: 'I feel restricted by my obligations as a parent'. Cronbach's coefficient ranged from 0.89 to 0.93. *Acceptance of the child* consisted of 12 items such as: 'My child is so slow that it annoys me'. Cronbach's coefficient ranged from 0.86 to 0.93. *Attachment towards the child* was measured through 12 items such as: 'My child and I have a good bond'. Cronbach's coefficient ranged from 0.82 to 0.90. All subscales were rated for applicability on a 6-point scale ranging from (1) = I totally disagree to (6) = I totally agree.

#### 2.2.6. Parental competence

The empowerment questionnaire (EMPO) from Damen and Veerman (2005) was used to evaluate feelings of parental competence. The scale consisted of 23 items rated on a 5-point scale from (1) = 'I totally disagree' to (5) = 'I totally agree'. For example, 'I think I am a good parent' or 'I often talk to others about the upbringing of my child'. Cronbach's coefficient ranged from 0.80 to 0.88.

#### 2.2.7. Perception of parenting

The perception of the parenting situation and being a parent in general (Hermanns et al., 1997) was measured with 8-items rated on a 5-point scale from (1) = I totally not agree to (5) = I totally agree. Items included 'Being a parent is fulfilling' and 'When there is a problem with my child I always find a solution'. Cronbach's coefficient ranged from 0.65 to 0.79.

#### 2.2.8. Parenting behaviour

The Nijmegen Parenting Questionnaire (Gerris et al., 1993; Gerris, Dekovic, Groenendaal, & Noom, 1996) was used to measure parenting behaviour. The following subscales were used: *ignoring* (5-item subscale, including items such as 'If my child misbehaves, I do not speak to my child until he/she apologizes'. Cronbach's coefficient ranged from 0.83 to 0.90; *autonomy* (7-item subscale, an example of an item is 'I encourage my child to explore things', Cronbach's coefficient ranged from 0.81 to 0.88; *conformist behaviour* (8-item scale consisting of items such as 'I teach my child to respect authority'. Cronbach's coefficient ranged from 0.85 to 0.89; *punishment*, (5-item scale, with statements such as 'I often punish my child by denying something he/she likes'. Cronbach's coefficient ranged from 0.66 to 0.77; *affective expression* (9-item scale, parents had to rate statements such as 'I often smile at my child'. Cronbach's coefficient ranged from 0.82 to 0.90; and *responsiveness* (8-item scale, example item 'I can talk to my child about everything'. Cronbach's coefficient ranged from 0.83 to 0.88. Additionally, from the Dutch version of the Parental Dimensions Inventory (PDI, Slater & Power, 1987), the 8-item subscale *consistent behaviour* was used. All items were rated on a 6-point scale ranging from (1) = 'I totally not agree' to (6) = 'I totally agree'. The scale includes statements such as 'My child often knows how to persuade me to punish him/her less severe than I initially intended'. Cronbach's coefficient ranged from 0.61 to 0.84.

### 2.2.9. Child problem behaviour

Child Behavioural Check List (CBCL 1 ½ - 5); Achenbach, 1992) was used to assess internalizing and externalizing problem behaviours. We made use of the five DSM IV subscales as mentioned in the CBCL manual (Achenbach et al., 2003). All scales were rated on a 3-point scale (0 = not applicable, 2 = often applicable). *Affective disorders* (11 items including statements such as 'unhappy, sad, depressed', Cronbach's coefficient ranged from 0.58 to 0.83), *anxiety disorders* (11-item scale, item example 'clings to adults or is too dependent', Cronbach's coefficient ranged from 0.58 to 0.63), *pervasive developmental disorders* (13-item scale, including items such as 'does not look at other people, avoids contact', Cronbach's coefficient ranged from 0.73 to 0.84), *attention deficit hyperactivity disorder* (13-item scale, example item 'can not sit still, is restless', Cronbach's coefficient ranged from 0.75 to 0.82) and *obsessive defiance disorder* (7-item scale, including items such as 'does not comply', Cronbach's coefficient ranged from 0.72 to 0.83).

### 2.3. Data analysis

First, demographic characteristics of the respondents in the two research conditions were compared for possible differences. Chi-square tests were used for categorical variables and Student's *t*-test for continuous variables.

Second, multilevel analysis was used to investigate differential improvement in the two research conditions from pre- to post-test and from pre-test to six-month follow-up, treating the repeated measurements as nested within subjects, and subjects as nested within program schemes. We followed the intention-to-treat-principle, so respondents not making use of the offer of receiving combined care and only enrolling in Home-Start were still included in the combined intervention group of the study for analysis. Also data from respondents dropping out of the program or respondents that did not comply with intervention protocol (for example not conducting all homework assignments or missing sessions or home visits) were not excluded from the study (Gupta, 2011).

Dependencies between repeated measurements and between families sharing the same program scheme are taken into account. We used standardized scores, so that model parameter estimates can be interpreted as effect sizes (Cohen's *d*). We did not impute values for missing values, as the multilevel analyses can make use of all available data, including data from incomplete cases. All participants who at least completed one measurement were included for analyses. Analyses were carried out using IBM SPSS version 21.

## 3. Results

Table 1 shows the demographic characteristics. All respondents in both research conditions were mothers. Except for 'use of other forms of support', there were no differences between conditions on demographic and background characteristics. Other forms of support consisted of support offered by other youth care or social welfare organizations. Parenting supports programs, specialized care for children with a disability or more intensified family support were included. In further analysis we controlled for the difference in use of these other forms of support.

Table 2 shows the means and standard deviations of primary and secondary outcome measures for all three moments of measurement.

Table 3 presents the estimates of change over time for outcomes related to primary outcome measures regarding parental wellbeing.

No differences between the two study conditions were found for the majority of the outcome measures related to the primary outcome *parental wellbeing*. This means that respondents only enrolled in the Home-Start program reported the same effects as the respondents receiving the combined intervention of Home-Start and Triple P on most of the selected outcomes. We did however find an increase in parental depressive mood in the combined intervention group compared to the

**Table 1**  
Demographic characteristics per respondent group.

	Home-start & Triple P (n = 56) % (SD)	Home-start (n = 49) % (SD)	p
<b>Parent characteristics (mothers)</b>			
Age in years (SD)	32.56 (4.20)	31.23 (4.82)	N.S.
Ethnic background/Nationality			
Dutch	35.7	47.5	N.S.
Western		5.0	
Non-Western	64.3	47.5	
Educational level			
Primary	15.4	12.8	N.S.
Lower secondary	20.5	25.6	
Upper secondary	48.7	51.3	
Tertiary	15.4	10.3	
Paid employment			
Family income	31.0	32.5	N.S.
Low (<1300 € a month)	52.6	38.9	N.S.
Moderate (1301–3150 € a month)	44.7	61.1	
High (> 3151 € a month)	2.6		
<b>Child characteristics</b>			
Age of target child in months (SD)	31.04 (11.55)	30.11 (8.98)	N.S.
Gender target child (male)	54.8	57.5	N.S.
<b>Family characteristics</b>			
Family composition			
Single household	23.8	15.0	N.S.
2-parent household	76.2	85.0	
Number of children			
1	22.0	5.0	N.S.
2	31.7	55.0	
≥3	46.4	40.0	
Active other forms of support present	38.5	60.5	0.05
Chronic health problems parent	35.0	50.0	N.S.
Major life events ≥3	17.1	15.0	N.S.

Home-Start only group. At post-test, parents that had received both programs reported significantly higher levels of depression than parents that had received only Home-Start.

Results related to change in the secondary outcome measures of *parenting behaviour* are given in Table 4. Parenting behaviour related to ignoring the child, conformist behaviour, punishment, expressing affection, consistent behaviour, and role restriction did not show any significant changes over time. No significant interaction effects (time × program) were observed at post-test or six-month follow up. This means that there were no observed differences over time between the two research conditions.

Table 5 shows changes for child behaviour. On the subscales affective disorder, pervasive developmental problems and ADHD-problems no time × program effects were observed. This means that respondents in both study conditions showed the same (absence of) change over time. For the subscales anxiety and oppositional behaviour there is an observed increase of reported problems within the combined intervention group at six-month follow up.

## 4. Discussion

This study examined whether Home-Start combined with Triple P group 4 was more effective in improving parental wellbeing, parenting behaviour and child behaviour than Home-Start as a single intervention. We hypothesized, based on the programs theoretical models of change and observations from earlier Home-Start evaluation studies, that combining support would yield stronger effects on the before mentioned primary and secondary program outcomes. We found no support for this hypothesis. On most of the outcome measures mothers in both conditions showed similar change or stability over time. On the primary outcome measure *depressive mood*, results even indicated a negative effect of combined support. Also for secondary outcomes related to child behaviour, there was an observed increase in problems on both the

**Table 2**  
Means and standard deviations at all three moments of measurement.

	Pretest	Posttest	6-Month follow-up
	M (SD)	M (SD)	M (SD)
Maternal wellbeing			
Depressive mood			
Home-Start combined with Triple P	0.93 (0.84)	1.09 (0.87)	0.42 (0.52)
Home-Start	1.29 (0.89)	0.75 (0.89)	0.76 (0.64)
Daily hassles (parenting stress)			
Home-Start combined with Triple P	2.53 (0.80)	2.47 (0.67)	2.60 (0.64)
Home-Start	2.64 (0.80)	2.47 (0.73)	2.31 (0.64)
NOSI (parenting stress)			
Acceptance			
Home-Start combined with Triple P	1.65 (0.85)	1.59 (0.68)	1.63 (1.06)
Home-Start	1.71 (0.78)	1.51 (0.71)	1.35 (0.49)
Enjoying child			
Home-Start combined with Triple P	5.26 (0.74)	4.95 (1.06)	5.31 (0.69)
Home-Start	5.47 (0.89)	6.16 (2.28)	5.66 (0.51)
Parenting perception			
Home-Start combined with Triple P	3.17 (0.59)	3.27 (0.58)	3.64 (0.82)
Home-Start	3.36 (0.60)	3.54 (0.54)	3.69 (0.37)
Empowerment			
Home-Start combined with Triple P	3.63 (0.43)	3.62 (0.43)	3.73 (0.44)
Home-Start	3.78 (0.38)	3.88 (0.43)	3.81 (0.41)
Feelings of competence			
Home-Start combined with Triple P	4.21 (1.01)	4.30 (0.88)	4.49 (1.01)
Home-Start	4.48 (0.93)	4.92 (0.78)	4.86 (0.74)
Feelings of attachment towards the child			
Home-Start combined with Triple P	4.90 (0.89)	4.95 (0.99)	5.16 (0.75)
Home-Start	5.36 (0.70)	5.54 (0.47)	5.54 (0.41)
Parenting behaviour			
Ignoring			
Home-Start combined with Triple P	2.56 (1.36)	2.32 (0.94)	2.47 (1.00)
Home-Start	2.48 (1.20)	2.39 (1.30)	2.74 (1.59)
Autonomy			
Home-Start combined with Triple P	3.81 (0.93)	3.98 (0.87)	3.78 (1.13)
Home-Start	4.32 (1.08)	4.38 (1.15)	4.15 (1.05)
Conformist behaviour			
Home-Start combined with Triple P	4.81 (0.61)	4.90 (0.76)	4.66 (0.81)
Home-Start	5.00 (0.86)	5.18 (0.75)	5.21 (0.58)
Punishment/discipline			
Home-Start combined with Triple P	3.15 (1.10)	3.44 (1.01)	3.25 (1.20)
Home-Start	3.17 (1.09)	3.30 (1.22)	3.24 (1.19)
Expressing affection			
Home-Start combined with Triple P	5.46 (0.62)	5.43 (0.52)	5.36 (0.73)
Home-Start	5.64 (0.49)	5.75 (0.59)	5.63 (0.65)
Consistent behaviour			
Home-Start combined with Triple P	3.84 (0.88)	4.00 (0.79)	3.94 (0.91)
Home-Start	4.11 (1.02)	4.13 (0.80)	4.32 (1.12)
Responsiveness			
Home-Start combined with Triple P	4.88 (0.91)	5.03 (0.69)	5.02 (0.58)
Home-Start	5.26 (0.73)	5.45 (0.45)	5.41 (0.50)
Role restriction			
Home-Start combined with Triple P	3.57 (1.25)	3.70 (1.18)	3.29 (1.30)
Home-Start	3.64 (1.36)	3.21 (1.14)	3.37 (1.27)
Child problem behaviour			
Affective problems			
Home-Start combined with Triple P	3.29 (2.81)	2.95 (3.20)	3.00 (3.97)
Home-Start	2.69 (2.29)	2.49 (2.62)	1.71 (1.74)
Anxiety problems			
Home-Start combined with Triple P	3.22 (2.86)	3.03 (2.53)	3.25 (3.32)
Home-Start	3.73 (2.77)	2.60 (2.03)	1.95 (1.40)
Pervasive development problems			
Home-Start combined with Triple P	3.64 (3.52)	3.52 (3.36)	3.84 (4.04)
Home-Start	4.29 (4.92)	3.44 (2.94)	2.63 (1.56)
Attention deficit hyperactivity problems			
Home-Start combined with Triple P	7.35 (4.00)	6.44 (3.97)	6.73 (5.01)
Home-Start	7.30 (4.29)	6.29 (3.37)	5.66 (3.12)
Oppositional defiant problems			
Home-Start combined with Triple P	5.12 (3.32)	4.81 (2.70)	4.80 (3.41)
Home-Start	6.12 (3.67)	4.90 (2.52)	3.87 (1.84)

Note: sample sizes at pretest: intervention group  $n = 43$ , comparison group  $n = 40$ ;  
Posttest: intervention group  $n = 34$ , comparison group  $n = 36$ ;  
6-month follow-up: intervention  $n = 22$ , comparison group  $n = 22$ .

**Table 3**  
Parameters estimates of long-term change on parental wellbeing in the Home-Start group compared to the combined intervention respondents.

Parental wellbeing	Depressive mood		Daily hassles		Acceptance		Enjoying child	
	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p
Fixed parameters								
Intercept	0.11 (0.20)	0.58	0.12 (0.22)	0.58	-0.10 (0.21)	0.64	0.25 (0.20)	0.21
Posttest vs pretest	<b>-0.39 (0.16)</b>	<b>0.02</b>	-0.19 (0.19)	0.32	-0.06 (0.14)	0.69	0.20 (0.23)	0.37
Follow-up vs pretest	-0.16 (0.25)	0.52	-0.27 (0.27)	0.32	0.07 (0.22)	0.74	0.00 (0.33)	0.99
Home-Start and Triple P (HS & TP)	-0.49 (0.23)	0.03	-0.21 (0.24)	0.40	-0.01 (0.24)	0.96	-0.30 (0.23)	0.20
Time (post vs pretest) x HS & TP	<b>0.80 (0.25)</b>	<b>0.00</b>	0.32 (0.28)	0.25	0.09 (0.21)	0.68	-0.40 (0.33)	0.23
Time (follow-up vs pretest) x HS & TP	0.26 (0.33)	0.44	0.52 (0.37)	0.17	-0.06 (0.29)	0.83	-0.10 (0.45)	0.82
Control variables								
Other support received	0.26 (0.20)	0.20	-0.01 (0.21)	0.98	0.29 (0.22)	0.20	-0.25 (0.18)	0.16
Parental wellbeing	Perception		Empowerment		Competence		Attachment	
Fixed parameters	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p
Intercept	0.41 (0.21)	0.05	0.37 (0.21)	0.09	0.39 (0.21)	0.06	0.48 (0.20)	0.02
Posttest vs pretest	-0.01 (0.18)	0.94	0.10 (0.17)	0.56	0.12 (0.13)	0.36	0.02 (0.17)	0.90
Follow-up vs pretest	-0.12 (0.28)	0.67	-0.03 (0.26)	0.92	0.01 (0.20)	0.96	-0.07 (0.26)	0.78
Home-Start and Triple P (HS & TP)	-0.40 (0.22)	0.08	<b>-0.47 (0.23)</b>	<b>0.04</b>	-0.31 (0.23)	0.17	<b>-0.62 (0.22)</b>	<b>0.01</b>
Time (post vs pretest) x HS & TP	0.01 (0.27)	0.96	-0.12 (0.25)	0.63	-0.30 (0.20)	0.14	-0.29 (0.26)	0.27
Time (follow-up vs pretest) x HS & TP	0.32 (0.36)	0.38	0.27 (0.34)	0.43	-0.08 (0.28)	0.78	0.10 (0.35)	0.76
Control variables								
Other support received	<b>-0.40 (0.19)</b>	<b>0.04</b>	-0.34 (0.20)	0.09	<b>-0.45 (0.21)</b>	<b>0.04</b>	-0.36 (0.19)	0.07

Note: Data printed in bold are significant changes over time. Due to standardization, parameter estimates can be interpreted as effect sizes (0.2 = small, 0.5 = medium, 0.8 = large; Cohen, 1988).

Sample sizes at pretest: intervention group n = 43, comparison group n = 40;

Posttest: intervention group n = 34, comparison group n = 36;

6-month follow-up: intervention n = 22, comparison group n = 22.

subscales *anxiety* and *oppositional deviant behaviour* in families that received both intervention programs.

Several possible explanations for the observed results can be formulated. First, although theoretically high-risk Home-Start families might benefit from additional structured support such as Triple P group 4, the prioritization and timing of (combined) support is essential. Experienced parenting problems are often related to parents' personal issues and primary needs, such as financial difficulties, parental wellbeing and physical wellbeing (Moran & Ghate, 2005). These issues might need to be addressed before secondary support related to improvement

of child development can be tackled (Peacock et al., 2013). However, the before mentioned issues are not necessarily targeted by the current studied interventions. As Peacock et al. (2013) addressed in their review of paraprofessional home visiting support, programs including a wide variety of target groups and focusing on different types of problems are likely to achieve less desired results. To improve results home visiting programs should define a clearer objective of their program. In the case of Home-Start this would mean that parents should be aware that Home-Start is based on principles that places a high emphasis on parents defining their goals themselves. Second, when experiencing

**Table 4**  
Parameter estimates of long-term change on parenting behaviour in the Home-Start group compared to the combined intervention respondents.

Parenting behaviour	Ignoring		Autonomy		Conformist		Punishment	
	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p
Fixed parameters								
Intercept	0.09 (0.20)	0.66	0.26 (0.21)	0.21	0.26 (0.20)	0.18	0.10 (0.22)	0.64
Posttest vs pretest	0.04 (0.18)	0.84	-0.13 (0.18)	0.47	0.12 (0.18)	0.51	-0.09 (0.15)	0.55
Follow-up vs pretest	0.41 (0.27)	0.13	-0.08 (0.26)	0.76	0.32 (0.27)	0.24	-0.01 (0.23)	0.97
Home-Start and Triple P (HS & TP)	0.04 (0.23)	0.83	<b>-0.54 (0.24)</b>	<b>0.02</b>	-0.28 (0.23)	0.22	-0.05 (0.22)	0.82
Time (post vs pretest) x HS & TP	-0.18 (0.27)	0.51	0.14 (0.26)	0.59	-0.31 (0.27)	0.26	-0.03 (0.23)	0.89
Time (follow-up vs pretest) x HS & TP	-0.49 (0.36)	0.18	0.07 (0.36)	0.85	-0.50 (0.36)	0.18	0.00 (0.31)	0.99
Control variables								
Other support received	-0.21 (0.20)	0.29	0.04 (0.21)	0.84	-0.30 (0.19)	0.12	-0.04 (0.20)	0.82
Parenting behaviour	Affection		Consistent		Responsiveness		Role restriction	
Fixed parameters	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p
Intercept	0.38 (0.20)	0.06	0.34 (0.21)	0.12	0.31 (0.20)	0.13	-0.11 (0.21)	0.60
Posttest vs pretest	0.03 (0.14)	0.85	-0.03 (0.16)	0.85	0.04 (0.18)	0.82	-0.28 (0.19)	0.14
Follow-up vs pretest	0.12 (0.21)	0.56	-0.09 (0.25)	0.72	0.11 (0.27)	0.69	0.00 (0.28)	0.99
Home-Start and Triple P (HS & TP)	-0.39 (0.23)	0.09	-0.29 (0.22)	0.19	<b>-0.48 (0.23)</b>	<b>0.04</b>	-0.01 (0.24)	0.96
Time (post vs pretest) x HS & TP	-0.05 (0.21)	0.81	0.13 (0.24)	0.58	-0.27 (0.27)	0.33	0.52 (0.28)	0.06
Time (follow-up vs pretest) x HS & TP	-0.15 (0.29)	0.59	-0.02 (0.33)	0.96	-0.19 (0.36)	0.60	0.10 (0.37)	0.80
Control variables								
Other support received	<b>-0.43 (0.21)</b>	<b>0.04</b>	-0.33 (0.20)	0.10	-0.18 (0.19)	0.36	0.24 (0.20)	0.23

Note: Data printed in bold are significant changes over time. Due to standardization, parameter estimates can be interpreted as effect sizes (0.2 = small, 0.5 = medium, 0.8 = large; Cohen, 1988).

Sample sizes at pretest: intervention group n = 43, comparison group n = 40;

Posttest: intervention group n = 34, comparison group n = 36;

6-month follow-up: intervention n = 22, comparison group n = 22.



**Table 5**

Parameters estimates of long-term change on parenting behaviour in the Home-Start group compared to the combined intervention respondents.

Child behaviour	Affective		Anxiety		Pervasive		ADHD	
	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p	Estimate (s.e.)	p
Fixed parameters								
Intercept	−0.29 (0.21)	0.17	−0.07 (0.21)	0.74	−0.01 (0.21)	0.98	−0.28 (0.20)	0.17
Posttest vs pretest	0.03 (0.19)	0.88	−0.20 (0.17)	0.23	−0.17 (0.16)	0.29	−0.00 (0.17)	0.99
Follow-up vs pretest	0.00 (0.28)	0.99	−0.42 (0.25)	0.10	−0.23 (0.24)	0.34	−0.12 (0.26)	0.65
Home-Start and Triple P (HS & TP)	0.21 (0.24)	0.38	−0.12 (0.24)	0.63	−0.11 (0.24)	0.66	0.07 (0.23)	0.75
Time (post vs pretest ) x HS & TP	0.06 (0.27)	0.83	0.47 (0.24)	0.06	0.39 (0.23)	0.10	0.15 (0.25)	0.54
Time (follow-up vs pretest ) x HS & TP	0.27 (0.37)	0.47	<b>0.84 (0.33)</b>	<b>0.01</b>	0.48 (0.32)	0.14	0.24 (0.34)	0.48
Control variables								
Other support received	0.39 (0.20)	0.06	0.30 (0.22)	0.17	0.17 (0.22)	0.44	<b>0.51 (0.20)</b>	<b>0.01</b>
Child behaviour	ODD							
Fixed parameters	Estimate (s.e.)							p
Intercept	−0.15 (0.20)							0.46
Posttest vs pretest	−0.18 (0.17)							0.31
Follow-up vs pretest	−0.42 (0.26)							0.11
Home-Start and Triple P (HS & TP)	−0.21 (0.23)							0.37
Time (post vs pretest ) x HS & TP	0.25 (0.25)							0.31
Time (follow-up vs pretest ) x HS & TP	<b>0.72 (0.35)</b>							<b>0.04</b>
Control variables								
Other support received	<b>0.59 (0.20)</b>							<b>0.00</b>

Note: Data printed in bold are significant changes over time. Due to standardization, parameter estimates can be interpreted as effect sizes (0.2 = small, 0.5 = medium, 0.8 = large; Cohen, 1988).

Sample sizes at pretest: intervention group n = 43, comparison group n = 40;

Posttest: intervention group n = 34, comparison group n = 36;

6-month follow-up: intervention n = 22, comparison group n = 22.

difficulties in several domains of daily life, enrolling in support focusing on improving your parenting situation and behaviour might have a demoralising effect on parents when they fail to implement the suggested strategies. As a result more negative perceptions on their own parenting situation might manifest. Especially when for example other parents within the parenting group do seem successful in implementing the suggested strategies. Third, when looking at the process of respondent inclusion several observations suggest that attitudinal and pragmatic factors prevented parents to actually participate in the combined intervention condition. For example, mothers although willing to participate in the parenting course refused to do so because their partner was not willing to join or mothers did not find the time to attend the two and a half hour weekly sessions (Duppong-Hurley, Hoffman, Barnes, & Oats, 2016). This low participation rate is understandable given the fact that Home-Start reaches multi-problem families experiencing difficulties in multiple domains of their daily lives (Asscher, Dekovic et al., 2005; Asscher, Hermanns et al., 2005; Hermanns et al., 2013). The respondents of the current study too could be considered coming from multi-problem families due to the present number of risk factors. For these families enrolling in manualized interventions with rather fixed program content and accompanying homework assignments might be too demanding. The time and focus required to conduct assignments between parenting training sessions are often not available for these families. Additionally the parenting training lasts only 8 weeks, which might be too short of a time frame to yield changes in perception of behaviour. Fourth, although strength of the current study is that it mirrors everyday practice, often programs evaluated in practice achieve less reported changes over time compared to clinical trials. Evaluating parenting support in everyday situations comes with difficulties such as program enrollment, engagement and retention (Axford, Lehtonen, Kaoukji, Tobin, & Berry, 2012; Peacock et al., 2013).

Several limitations should be mentioned. First, the relatively small sample size and the high percentage of attrition over time. The study is underpowered, which might have resulted in less observed significant changes. Second, respondents were not recruited directly by the research team but via Home-Start coordinators. Several recruiting coordinators judged some of the newly enrolled families in the Home-

Start program unfit to participate in the research. These families according to the coordinators would either be too instable, experiencing too many difficulties or finding the research to time-consuming. Resulting in the possibility that these families have not been informed about the research. Therefore selection bias cannot be ruled out. Third, results were based on parental self-reports and from one parent only, in the current study the mothers. Additional information of support providers regarding pre- and post program change would be a valuable addition. As well as the perspective of the possible other present parent in the families. Fourth, the current study provides no insight in the fidelity or program integrity of both studied programs. Although the design of the study was to monitor both activities conducted by Home-Start volunteers and the Triple P providers, in practice both volunteers and practitioners were not compliant to this aspect of the study. As reasons they indicated that monitoring their activities would take too much time or was in contrast to program principles of providing low threshold support. Due to these limitations results should be interpreted with caution.

The current study showed no surplus effects of the Triple P level 4 program to the Home-Start program for high-risk families. Several outcome measures showed negative effects at follow-up compared to pretest measurement. Leading to the conclusion that combined support within the studied Home-Start population does not lead to better results. When aiming to provide the most appropriate support to families, negative outcomes are an indication to advise against this specific combination of parenting support. Replication in larger samples is however needed to draw more definite conclusions regarding the effects of combined Home-Start and Triple P group 4.

### Consent

Participation in this study was voluntary and all participants signed an informed consent form.

### Conflict of interests

Authors declare that they have no conflict of interests related to funding and reported results of the study.

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## Ethical approval

The ethical guidelines and protocol of the research institute have been followed. An appointed review board approved procedures and study design.

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