
EFFECTIVENESS OF THE HOME-START PARENTING SUPPORT PROGRAM: BEHAVIORAL OUTCOMES FOR PARENTS AND CHILDREN

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ABSTRACT: This study examined effectiveness of Home-Start, a program designed to support parents with young children. The aims were (a) to examine whether Home-Start improved maternal well-being and (b) to examine whether Home-Start led to changes in the behavior of mothers or children. Self-reported and observational data were collected in two waves, using data from 54 mothers and their children between 1.5 and 3.5 years of age who participated in this intervention program for 6 months. These data were compared to 51 comparison families who reported need for parenting support. The results showed a significant improvement in perceived parenting competence, but no effects on maternal depressive moods. Mixed results were found for parenting behavior: Parental consistency and observed sensitivity improved significantly in the Home-Start group whereas no effects were found on the other parenting variables. Child behavioral problems seemed to diminish at the second measurement in both groups, and therefore these changes cannot be attributed to Home-Start.

RESUMEN: Este estudio examinó la efectividad de "Home-Start," un programa diseñado para apoyar a progenitoras con niños pequeños. Los objetivos del mismo fueron: 1) examinar si "Home-Start" mejoraba el bienestar maternal, y 2) examinar si "Home-Start" conllevaba cambios en la conducta de las madres o los niños. Se recogió información por medio de observaciones y de autorreportes en dos períodos, usando la información de 54 madres y sus hijos, de entre un año y medio y tres años y medio de edad, que participaron en esta intervención durante seis meses. Las informaciones recogidas se compararon con la de 51 familias del grupo de comparación que reportaron necesidad de apoyo en la crianza. Los resultados mostraron un significativo mejoramiento en la competencia para criar tal como ésta era percibida, pero no tuvieron ningún efecto en los modos depresivos maternos. Se encontraron resultados mixtos en cuanto a la conducta de crianza: la consistencia y la sensibilidad observada en el progenitor mejoraron significativamente en el

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grupo de “Home-Start,” mientras que no se encontraron efectos sobre las otras variables de la crianza. Los problemas de conducta del niño parecieron disminuir al momento de la segunda medida en ambos grupos y, por tanto, estos cambios no se pueden atribuir a “Home-Start.”

RÉSUMÉ: Cette étude a examiné l’efficacité de Home-Start, un programme conçu pour soutenir les parents avec de jeunes enfants. Les buts étaient: 1) examiner si le Home-Start améliorerait le bien-être maternel et 2) examiner si le Home-Start amenait des changements dans le comportement des mères ou des enfants. Des données auto-rapportées et des données d’observation ont été recueillies en deux vagues, en utilisant des données de 54 mères et leurs enfants, entre l’âge d’1,5 et 3,5 ans, qui ont participé à ce programme d’intervention pendant six mois. Ces données ont été comparées à 51 familles de comparaison qui s’étaient déclarées dans le besoin de soutien au parentage. Les résultats ont fait état d’une grande amélioration dans la compétence perçue de parentage, avec aucun effet sur les état dépressifs maternels. Des résultats mitigés ont été trouvés pour le comportement de parentage: la régularité et la cohérence parentale et la sensibilité observée se sont beaucoup améliorées avec le groupe Home-Start, alors qu’aucun effet n’a été trouvé sur les autres variables de parentage. Les problèmes de comportement de l’enfant ont semblé diminuer à la seconde mesure chez les deux groupes, et donc ces changements ne peuvent pas être attribués au Home-Start.

ZUSAMMENFASSUNG: Diese Studie untersuchte die Effektivität des “Starts zu Hause” – ein Programm, das entwickelt wurde, um Eltern mit kleinen Kindern zu unterstützen. Die Ziele waren: 1. zu untersuchen, ob das Programm das Wohlbefinden der Mütter verbessert und 2. zu untersuchen, ob das Programm zu Verhaltensänderungen der Mütter gegenüber ihren Kindern führt. Eigene Berichte und Beobachtungsdaten wurden in zwei Wellen gewonnen, indem Daten von 54 Müttern und deren Kindern im Alter von 1,5 bis 3,5 Jahren, die an diesem Programm sechs Monate teilnahmen, gesammelt wurden. Diese Daten wurden mit 51 Familien verglichen, bei denen ebenfalls ein Bedarf an elterlicher Unterstützung gemeldet worden war. Die Ergebnisse zeigten eine signifikante Verbesserung in der wahrgenommenen elterlichen Kompetenz, aber keine Effekte auf mütterliche, depressive Stimmungen. Unterschiedliche Ergebnisse wurden für elterliches Verhalten gefunden: elterliche Sicherheit und die beobachtete Sensitivität besserten sich signifikant in der “Start zu Hause” Gruppe, aber es wurden keine anderen Effekte bei den anderen Variablen der Elternschaft gefunden. Die kindlichen Verhaltensprobleme schienen in beiden Gruppen zum Zeitpunkt der zweiten Messung weniger zu werden und konnten daher nicht dem Programm zugeordnet werden.

抄録：この研究は、幼い子どもを持つ両親を支援するためにデザインされたプログラムである Home-Start の有効性を検証した。研究目的は、(a) Home-Start が母親の福利を改善したかどうかを検証すること、そして (b) Home-Start が母親または子どもの行動の変化をもたらしたかどうかを検証することだった。この介入プログラムに6か月間参加した、54人の母親と彼女たちの1歳半から3歳半の子どもからのデータを用いて、自己報告と観察のデータが2回にわたって収集された。これらのデータは、対照となる育児支援の必要性を報告した51家族と比較された。結果から、認められた養育能力が有意に改善したことが示されたが、母親の抑うつ気分には何の影響も示さなかった。養育行動については、良い結果と悪い結果が入り交じっていた。養育の一貫性と観察された感受性は、Home-Start 群において有意に改善したのに対し、その他の養育の変数には何の影響も見られなかった。子どもの行動上の問題は、両群とも2回目の測定で消失するよう見えた。したがってこれらの変化は Home-Start の影響とすることはできない。

* * *

Parenting in families with preschool children is not easy: Young parents at times feel overwhelmed by their role as father or mother and experience that the changes and demands associated with the parenting role go beyond their own resources (Mulrow, Caldera, Paursley, Reifman, & Huston, 2002). Some parents feel unable to cope with the demands placed upon them (McKelvey, Fitzgerald, Schiffman, & Von Eye, 2002), and parental well-being, often defined in terms of self-efficacy with regard to parenting (Coleman & Karraker, 2000; 1997) and/or levels of depressive moods (Barling, MacEwen, & Nolte, 1993; Deković, 1999), may diminish. Low parental well-being can have a disruptive effect on the family system and parenting style. This can lead to less supportive and more punitive parenting behavior (McKelvey et al., 2002; Mertesacker, Bade, Haverkock, & Pauli-Pott, 2004) that negatively influences child development (Papp, Cummings, & Schermerhorn, 2004). Diminished maternal well-being is associated with a broad range of negative child outcomes such as internalizing behavioral problems as well as aggressive and disruptive behavior (Hay, Pawlby, Angold, Harold, & Sharp, 2003; Olson, Ceballo, & Park, 2002). The degree to which mothers experience parenting as being difficult and unsatisfactory is one of the most important contextual factors for the well-being of children (Östberg & Hagekull, 2000).

Although parental well-being and parenting behavior are influential throughout development, their effects are possibly most pronounced during infancy and the preschool years. Research has shown that the first 5 years of life are of crucial importance to the development of a sense of emotional security and the acquisition of self-regulation skills (Repetti, Taylor, & Seeman, 2002). Parenting styles that endorse unpredictable parental behavior, physical abuse, harsh discipline, and a lack of supervision/monitoring of the child's activities during this period of life are related to the development of antisocial behavior, social rejection, academic failure, and membership in deviant peer groups later on in life (Capaldi & Patterson, 1991; Ehrensaft et al., 2003; Stormshak, Bierman, McMahon, & Lengua, 2000). In short, disadvantages during the preschool period can have lasting effects on the child's development and well-being in later life.

In response to the awareness that the first 5 years of life are of great importance to further child development, several initiatives for early intervention have been developed to counter possibly negative outcomes. Early intervention programs are designed to support healthy developmental progress in families with young children. The long-term goal of these interventions is the prevention of family dysfunction and behavioral problems of the child in later developmental periods (Barnes, 2003; Osofsky, 1998). Despite sharing goals, early intervention programs differ substantially with regard to their approaches. There are differences in targets (parents vs. children), timing of intervention (pregnancy, perinatal period, infancy, or the preschool period), administration of the intervention (professionals vs. volunteers), and focus (family functioning vs. child behavioral problems) (Fonagy, 1998). The category of early intervention programs on which the current study focused was that of parenting support programs. Parenting support programs aim to improve family functioning by means of supporting parents. Some of these programs attempt to achieve these goals by providing social support, which is thought to have a buffering effect against adverse circumstances (Ceballo & McLoyd, 2002; Hakulinen, Laippala, Paunonen, & Pelkonen, 1999; Hashima & Amato, 1994). One of the underlying theories of social support parenting interventions is that by providing social support, one may influence a parent's sense of competence and feelings of self-efficacy and, in turn, his or her parenting behavior.

Systematic evaluations of family support programs have shown modest and inconsistent effects on child outcomes and family functioning (Shonkoff & Phillips, 2000). Brooks-Gunn,

Berlin, and Sidle Fuligny (2000) reported some positive, though mainly mixed, findings with regard to the effectiveness of early intervention programs on parents. Some studies have found effects on certain areas aimed at by the intervention, but never on all. For example, Seitz, Rosenbaum, and Apfel (1985) found improvement on parental initiative concerning involvement with their child's schooling, but not for self-reported parenting practices; and some effects in regard to school attendance, but none on the child's IQ. Connolly, Sharry, and Fitzpatrick (2001) found a decrease in behavioral problems of children, but no changes with regard to parental well-being. Alternatively, both Davis et al. (2005) and Puura et al. (2005) tested the same European Early Promotion Project in five different countries and reported that the program seemed effective only in one of the countries (Greece) in which it was tested. In all other countries, once again mixed results were found, depending on what outcome measure was examined.

Differences in outcomes can be explained by the considerable variability among intervention programs in a number of important dimensions such as children's age at the start of the intervention, intensity and duration of service delivery, and the target population (Shonkoff & Phillips, 2000). A different kind of reason for inconsistent results might be found in the research designs of effectiveness studies (Brooks-Gunn et al., 2000). In the Netherlands, for example, most evaluations of parenting support programs are based on the participants' self-reports (Hermanns, van de Venne, & Leseman, 1997; Prinsen, Verhegge, & Ten Thije, 2002). These evaluations, however, might be assessing clients' satisfaction or clients' perceptions of parenting rather than actual changes in parenting behavior and child development. Therefore, it seems informative to include both self-reported data and observational data when looking at the effects of Home-Start on parenting behavior and the behavioral development of children. Brooks-Gunn et al. (2000) emphasized another methodological issue by stressing that many early interventions lack rigorous, controlled evaluations. In particular, studies examining the effectiveness of broadly available programs often lack comparison groups (see Frost, Johnson, Stein, & Wallis, 1996, 2000; Taggart, Short, & Barclay, 2000).

So far, the most promising results have been obtained with university-based programs, or as Duggan et al. (2004) called them, "demonstration" programs, rather than with programs that have been applied in the field. Often, however, it is difficult to generalize such programs to applied clinical settings. This is especially important, though, given the fact that the most effective programs are long-term and intensive, and as a result are often expensive and difficult to set up without additional funds or support. For these reasons, university-based interventions have not been generally adopted (Taylor & Biglan, 1998).

To make sure that a program is effective in applied settings, it is necessary to evaluate support programs that are already available for a broad public. Many parenting programs that are being used have not been evaluated. In particular, family support programs that work with volunteers have not been widely studied. The few studies of programs that work with volunteers that have been carried out have shown mixed results and have often used small samples (e.g., Kelleher & Johnson, 2004; Rosenberg, Robinson, & Fryer, 2002). Barnett, Duggan, Devoe, and Burrell (2002) reported positive results on the Parent-Child Dysfunctional Interaction subscale, but not for the Parental Distress and Poor Mental Health subscales. Johnson et al. (2000) reported improvements in parenting skills and maternal self-esteem. Rosenberg et al. (2002), on the contrary, found only a few effects for a twice-a-month intervention program for families with a child with special needs. Kelleher and Johnson (2004) also found results for only two of the eight outcome measures: access to social support and age-appropriate expectations of the child. Despite these mixed results, a large number of volunteer-based parenting support programs have

been developed because it is a relatively low-cost and accessible family service. It is nevertheless of crucial importance for these volunteer-based programs to prove their effectiveness.

The present study focuses on the Home-Start Program, one of the various programs designed to support parents with young children. The program works with volunteers who visit mothers for half a day once a week. Provision of social support by the volunteers is geared to increase maternal well-being. Increased maternal well-being is thought to result in more positive parenting behavior, which in turn ought to lead to the reduction of behavioral problems in children. Previous evaluations of the Home-Start intervention in both the United Kingdom and The Netherlands have shown positive results such as increased maternal well-being and competence, improved social networks, and improved parenting behavior (Frost et al., 1996, 2000; Hermanns et al., 1997); however, a shortcoming in previous Home-Start research is that most studies did not employ an appropriate control group (Frost et al., 1996). Moreover, these studies relied solely on maternal self-reports. In the present study, we employed both observational data as well as a comparison group to examine (a) whether Home-Start improves maternal well-being and (b) whether Home-Start leads to observable changes in the behavior of mothers and/or children.

METHOD

Participants and Procedure

The design of the study involved two groups of families: the *intervention group* (i.e., Home-Start group), which received support from the Home-Start parenting support program, and a *comparison group*, which consisted of families with similar risk factors as the Home-Start families. The families in the intervention group ($n = 54$) were recruited at 26 different Home-Start sites (each providing 2–5 participants) by the coordinators of the Home-Start program. Since mainly mothers participate in Home-Start, only mothers were included in this study. The comparison group ($n = 51$) was recruited with the help of well-baby centers in a region where Home-Start was not yet available. One thousand parents with a child in the relevant age group were sent a short questionnaire assessing parental stress (Dutch version of Parenting Stress Index-Short Form; De Brock, Vermulst, Gerris, & Abidin, 1992b). In addition, the following questions were asked: “Do you need support regarding parenting every now and then?” (*Yes/No*), “If this support were to come from a volunteer who’d come to support you three hours each week, would you make use of this service?” (*Yes/No*), “How often do you find your child to be more difficult than other children?” For the last question, there were four answer categories, varying from 1 (*hardly ever*) to 4 (*almost always*). Three hundred seventy-five parents returned the questionnaire. From this large pool of families, the “need for support” comparison group ($n = 51$) was selected. The two criteria used to include families in this group were: (a) parental stress levels above the normed mean for nonclinical groups as assessed by the Parenting Stress Index ($M \geq 2.48$) or (b) positive answers to at least two of the three additional questions.

For both groups (Home-Start and comparison), the recruitment procedure was as follows: As soon as the research staff received the necessary information (i.e., name, address, and phone number) about a potential participant, the family was contacted within 1 week, and the reasons for the study and the procedure were explained. After this short introduction, parents were asked if they wanted to participate. If parents did not want to participate, their data were deleted from the file. For the parents who agreed to participate, an appointment was made for the first home

TABLE 1. Characteristics of the Home-Start Group and the Comparison Group

	Home-Start (n = 54)	Comparison (n = 51)
Dutch nationality	94%	94%
Age of the mother (years)	31 (5.87)	34 (5.22)
Gender of the child (male)	47%	60%
Age of the child (months)	30.1 (7.40)	30.6 (6.34)
No. of children		
1	26%	16%
2	44%	45%
3+	30%	39%
Life events (>3)	38%	30%
Educational level		
University	3%	2%
Higher vocational	15%	28%
Intermediate vocational	46%	50%
High school	15%	12%
Lower	18%	6%
Health problems	26%	16%
Marital status (single)	46%	15%

visit (T1), and the first questionnaire was sent. At the end of the visit, an appointment was made for the second visit (T2), on average 6.8 ($SD = .93$) months later.

Between T1 and T2, 3 Home-Start mothers and 1 comparison group mother withdrew from the study. Reasons for withdrawal were that participation took too much time or that the mother withdrew from the Home-Start intervention altogether and thus from the sample. There were no significant differences between mothers who dropped out and mothers who completed the Home-Start intervention.

Demographic characteristics of the Home-Start group and comparison group are presented in Table 1. No differences between the groups were found on ethnicity, age and gender of the target child, number of children in the family, number of specified life events experienced in the past 12 months, and health problems. However, Home-Start mothers were significantly younger than mothers in the comparison group, $F(1, 103) = 9.10, p < .01$, were lower educated ($\chi^2 = 41.06, p < .05$), and were more often single parents ($\chi^2 = 12.06, p < .01$). Therefore, in further analyses, age, educational level, and marital status of the mothers were treated as covariates.

Home-Start: Description of the Intervention

Home-Start describes itself as “An organization in which volunteers offer regular support, friendship and practical help to young families under stress in their own homes, helping to prevent family crisis and breakdown” (Frost et al., 2000, p. 329). Home-Start support is aimed at families who have at least one child under the age of 6 years and are experiencing difficulties in child rearing (Hermanns et al., 1997; Terpstra & van Dijke, 1998). Families can get in touch with Home-Start through health clinics, social workers, child protection services, and self-referral.

TABLE 2. *Most Frequently Carried Out Activities by the Home-Start Volunteers (N = 39)*

Activity	% ^a
Listening	100
Giving advice	97
Playing with the child	94
Chatting, small talk	77
Baby-sitting	57
Helping to contact services	48
Helping in the house	47
Enlarging social networks	14
Daily shopping	11

^aPercentage of volunteers who reported that they had carried out this activity.

The Home-Start volunteers attend a 3-day training program in which they are taught to be supportive in a nondirective way. In addition, volunteers receive supervision once a month and attend a training day once a year. There are no additional educational requirements.

In 2002, The Netherlands had 42 Home-Start sites, with a total of 777 volunteers who supported 1,038 families (Galama & Van Rij, 2004). The median period of support in 2001 was 6.3 months, with a mode of 6.4 months (Galama, 2002). The frequency of the visits depended on the mothers' needs and was on average 3.5 times a month (range = 1–5) and lasted 3 to 4 hr.

In the present study, 20% of the families used Home-Start for less than 3 months, and 20% of the families used Home-Start between 3 and 5 months. Fifty-six percent of the families terminated Home-Start after 5 to 9 months, and only 3% of the families used Home-Start longer than 9 months. The mean number of visits per month was 3.49 ($SD = .82$), with an average duration of 2.4 hr ($SD = .46$). Volunteers offered mothers a wide range of support, adjusting their services to the individual mothers' needs. At T2, volunteers filled out a questionnaire saying what kind of support they provided to the mothers (Table 2). In accordance with the aims of Home-Start, these activities covered different kinds of support: emotional support (e.g., listening to the mother's problems and comforting her); instrumental support (e.g., baby-sitting, helping the mother with housework, and child care), and informational support (e.g., helping mothers to find community services or to fill out forms). Both the intensity and the content of intervention in our sample were comparable to the way in which Home-Start is commonly conducted in The Netherlands.

Instruments

All instruments that were used in the present study have been used in previous studies (e.g., Deković, 1999; Deković, Jannssens, & Van As, 2003; Hermanns et al., 1997; Stams, Juffer, & Van IJzendoorn, 2002) and have adequate psychometric qualities.

Parental Characteristics

Parental *depressive mood* was measured with the Parenting Stress Index-Revised (Gerris et al., 1993). This scale consists of nine items (e.g., “I often feel useless”) to be answered on a scale of 1 (*I disagree*) to 6 (*I totally agree*) (T1: $\alpha = .89$, T2: $\alpha = .88$).

Parental self-esteem with regard to parenting (i.e., perceived parenting *competence*) was assessed with the Dutch version of the Parenting Stress Index (Abidin, 1983; De Brock, Vermulst, Gerris, & Abidin, 1992a). This is a 13-item scale (T1: $\alpha = .89$, T2: $\alpha = .87$). The items (e.g., “I often have the feeling that I can’t really cope with things”) are answered on a scale of 1 (*I disagree*) to 6 (*I totally agree*).

Parenting Behavior: Parental Self-Reports

Four aspects of childrearing and the quality of the parent–child relationship as perceived by the parents were assessed. The first aspect, *responsiveness*, was assessed with a subscale of the Nijmegen Parenting Questionnaire (Gerris et al., 1993; Gerrits, Dekovic, Groenendaal, & Noom, 1996). This subscale consists of eight items to be answered on a scale of 1 (*I disagree*) to 6 (*I totally agree*). Parents were asked to indicate how much they agreed with statements such as “I know what’s wrong when my child is having problems” (T1: $\alpha = .83$, T2: $\alpha = .86$).

The second aspect, *consistency*, was measured with the Parenting Dimensions Inventory (PDI; Slater & Power, 1987). The Consistency scale consists of eight items (T1: $\alpha = .71$, T2: $\alpha = .74$). Each item is scored on a scale of 1 (*I totally disagree*) to 6 (*I totally agree*) (e.g., “I only threaten with punishment when I’m sure I’ll be able to execute the punishment”).

Third, *rejection of the child* was measured with a subscale of the Parenting Stress Index (Abidin, 1983; De Brock et al., 1992a) (T1 $\alpha = .78$, T2 $\alpha = .75$). This subscale consists of 12 items such as “My child is so slow that it irritates me.” These items, too, are scored on a scale of 1 (*I totally disagree*) to 6 (*I totally agree*).

The fourth aspect of parenting behavior, the *parental discipline style*, was assessed with the PDI (Slater & Power, 1987). Parents were presented with six hypothetical situations describing child misbehavior, each followed by eight possible parental reactions. For example: “Your child hits his/her friend after an argument. How probable is it that you would: talk with your child, ignore your child, hit your child,” etc. Each reaction can be scored on a scale of 0 (*very improbable*) to 3 (*very probable*). With the PDI, several disciplinary techniques can be assessed: permissiveness (T1: $\alpha = .58$, T2: $\alpha = .54$), induction (T1: $\alpha = .70$, T2: $\alpha = .72$), ignoring (T1: $\alpha = .78$, T2: $\alpha = .88$), love withdrawal (T1: $\alpha = .84$, T2: $\alpha = .84$), physical punishment (T1: $\alpha = .81$, T2: $\alpha = .78$), and exercise of power (T1: $\alpha = .83$, T2: $\alpha = .84$). The Permissiveness scale was left out of further analyses due to low internal consistency. A factor analysis of the five remaining scales resulted in a two-factor solution: negative control and positive control. *Negative control* consisted of ignoring, love withdrawal, physical punishment, and exercise of power, and explained 42% of the variance. *Positive control* explained 23%. Therefore, for further analyses, positive ($\alpha = .70$) and negative control ($\alpha = .89$) scores were used.

Child Problem Behavior

Mothers were asked to report on their child’s behavioral problems. Both internalizing as well as externalizing child behavioral problems were measured with the Dutch version of the Child

Behavior Check List (CBCL/2–3; Achenbach, 1992; Koot, 1993; Koot & Verhulst, 1991). The CBCL consists of 100 items to be answered on a scale of 0 (*not applicable*) to 2 (*often applicable*). The CBCL includes a wide range of problematic behavior varying from whining and yelling to having difficulties falling asleep and showing no regret when hurting someone. These items are grouped into two scales: *Internalizing Problems* (25 items; T1: $\alpha = .82$, T2: $\alpha = .80$) and *Externalizing Problems* (26 items; T1: $\alpha = .93$, T2: $\alpha = .91$).

Observational Measures

During *standardized* home observations carried out by the research staff, mother–child play interaction was observed and videotaped. The task was as follows. A box of Lego building blocks (Duplo) with an additional two little cars were offered on a carpet of approximately 1 sq. m. The observational task consisted of four subtasks: free play (2 min), building a tower (4 min), and building a bridge (3 min), followed by cleaning up (i.e., pulling the blocks apart and putting them back in the box) (3 min). Mothers were asked to play with their child as they usually would do. The building blocks had to be kept on the carpet.

Three trained observers coded the videotapes after the session. The revision of the Erickson rating scales was used to code maternal and child behavior (Egeland et al., 1995; Erickson, Stroufe, & Egeland, 1985). The following 7-point rating scales were used to assess maternal behavior: Supportive Presence, Hostility, Intrusiveness, Clarity of Instruction, and Confidence. Principal component analysis revealed a one-dimensional solution and explained 73% of variance (T1: $\alpha = .92$, T2: $\alpha = .92$). Therefore, the mean scores of maternal *sensitive parenting* were used for further analysis.

To measure child behavior, the following rating scales were used: Persistence, Avoidance, Enthusiasm, Compliance, Experience, Affection, and Negativity, all to be assessed on a 7-point scale. Principal component analysis revealed a one-dimensional solution explaining 79% of variance (T1: $\alpha = .94$, T2: $\alpha = .95$). This factor had positive loadings on Persistence, Enthusiasm, Compliance, Experience and, Affection, and negative loadings on Negativity and Avoidance. Therefore, this factor was labeled *Cooperative Child Behavior*.

A staff member who had much experience with these rating scales trained observers until the interrater reliability was at least 80% for 25 precoded videotapes. Maternal behavior was coded by one observer who was blind to the condition in 50% of the cases; in the other 50% of the cases, he was not as he was the observer for those families. Child behavior was coded by one observer who was blind to the condition of the families in 75% of the cases. For both child and maternal behavior, an experienced staff member who was blind to all conditions of all families coded 25 tapes and established intraclass correlations from .70 to .92 ($M = .85$) for maternal behaviors and intraclass correlations from .88 to .92 ($M = .91$) for child behaviors.

In addition to rating scales used to assess behavior in standardized settings, the Coder Impressions Inventory (CII; Webster-Stratton, 1998) was coded by the research staff (observers) immediately after a home visit. With this 81-item inventory, various aspects of parenting behavior (e.g., “Parent used sarcasm in a denigrating or hurtful way”) can be indicated on 3-point scales, ranging from 1 (*did not occur*) to 3 (*four or more examples*).

The following parenting constructs of the CII were used in this study: *harsh parenting*, consisting of 12 items (T1: $\alpha = .73$, T2: $\alpha = .75$), represents negative and hostile parenting; and *parental warmth*, consisting of 6 items (T1: $\alpha = .82$, T2: $\alpha = .79$), measures affectionate and warm parenting behavior. The observers approximately had 30 hr of training with videotapes

and live observations using the CII before an interobserver agreement rate of at least 80% was achieved.

Child Behavior in Interaction With the Mother

Again, the CII (Webster-Stratton, Spitzer, & Woolley-Lindsay, 1989) was used to code the child's behavior during the entire visit. The following scales were used: *Negativity*, eight items (T1: $\alpha = .78$, T2: $\alpha = .78$), which measures the amount of negative behavior such as aggressive or detached behavior and noncompliance; and *Prosocial Behavior*, five items (T1: $\alpha = .77$, T2: $\alpha = .70$), which indicates the amount of positive behavior, willingness to obey requests, and positive affection towards the mother.

RESULTS

Preliminary Analyses

In the current dataset, 5.4% of the data was missing. Missing values were imputed by substituting them with the group mean. Before running the main analyses, the normality in the distribution of variables was assessed using the rule of thumb that absolute values of skewness and kurtosis ranging from -1.50 to 1.50 may be considered to approximate a normal distribution (e.g., Byrne & Campbell, 1999; Muthen & Kaplan, 1985). Two variables were identified that did not meet these criteria: maternal rejection and positive control. These variables were transformed using log transformation. Equivalence of the Home-Start and comparison groups was compared in terms of the baseline assessment on outcome measures. Results indicated that the two groups differed at T1 on 6 of 10 variables assessing maternal characteristics and parenting behavior. Home-Start mothers experienced higher levels of depressive mood, $F(1, 100) = 12.48$, $p < .01$, and reported lower levels of perceived competence, $F(1, 100) = 10.32$, $p < .01$. They also reported a higher level of rejection of the child, $F(1, 100) = 6.86$, $p < .05$. Observers perceived that Home-Start mothers were being less sensitive, $F(1, 100) = 14.11$, $p < .01$, less warm, $F(1, 100) = 9.27$, $p < .01$, and more harsh when interacting with their child, $F(1, 100) = 9.27$, $p < .01$.

Regarding the child variables, results indicated that the two groups differed at T1 on four of five variables assessing mother reported and observed child behavior. Home-Start children showed more internalizing, $F(1, 100) = 12.08$, $p < .01$, and externalizing behavioral problems, $F(1, 100) = 5.79$, $p < .05$, and showed more negativity, $F(1, 98) = 15.59$, and less prosocial behavior, $F(1, 100) = 10.50$, $p < .01$, during nonstandardized observations.

To control for these initial differences when evaluating the intervention effects, we conducted analyses of covariance (ANCOVA) on the T2 scores, using the T1 scores as a covariate. Age of the mother, educational level, and marital status also were entered as covariates in these analyses. Tables 3 and 4 show means on T1 and T2, ANCOVA results, and adjusted means for parental characteristics, parental behavior (Table 3), and child behavior (Table 4).

Parental Characteristics

We hypothesized an increase in maternal well-being for the Home-Start group. The ANCOVA revealed a significant effect for maternal perceived competence, $F(1, 102) = 4.13$, $p < .05$, $\chi^2 = .04$, but not for maternal depressive mood, $F(1, 102) = 1.39$, n.s. Adjusted means at

TABLE 3. Means and SDs for Parental Characteristics and Parenting Behavior for Home-Start Group and Comparison Group Pre- and Postintervention

Parental Characteristics	Home-Start					Comparison					F
	T1		T2		Adjusted	T1		T2		Adjusted	
	M	SD	M	SD		M	SD	M	SD		
Depressive Mood	3.19	1.16	2.70	1.07	2.40	2.45	.95	2.21	1.02	2.51	.40
Perceived Competence	4.11	.93	4.64	.82	4.80	4.63	.69	4.71	.69	4.55	4.13*
Self-Reported Parenting											
Responsiveness	4.98	.76	5.12	.61	5.12	4.99	.58	5.08	.51	5.08	.23
Consistency	4.14	.89	4.53	.81	4.58	4.29	.75	4.33	.86	4.30	4.38*
Rejection ^a	.27	.17	.23	.15	.23	.190	.12	.18	.12	.18	.22
Negative Control	.83	.58	.70	.44	.63	.66	.35	.62	.32	.69	.74
Positive Control ^a	.34	.36	.43	.09	.44	.41	.09	.43	.08	.43	.40
Observed Parenting											
Sensitivity	3.92	1.09	4.33	1.00	4.68	4.66	.88	4.75	.85	4.40	5.73*
Harsh Parenting	1.51	.39	1.57	.40	1.50	1.51	.27	1.35	.24	1.42	2.06
Warmth	2.41	.61	2.44	.56	2.55	2.75	.39	2.75	.36	2.65	1.39

^aLog transformation.* $p < .05$.**TABLE 4.** Means and SDs for Child Behavior for Home-Start Group and Comparison Group Pre- and Postintervention

Mother-Reported Child Behavior	Home-Start					Comparison					F
	T1		T2		Adjusted	T1		T2		Adjusted	
	M	SD	M	SD		M	SD	M	SD		
Internalizing	12.00	6.32	9.36	5.60	8.60	7.40	4.49	6.13	4.13	6.90	3.53
Externalizing	21.24	11.05	17.04	10.09	15.94	16.51	7.60	12.50	6.2	13.61	2.94
Observed Child Behavior											
Cooperative Behavior	4.16	1.30	4.35	1.16	4.49	4.49	1.02	5.00	1.09	4.87	2.86
Negativity	1.89	.66	1.77	.58	1.67	1.44	.39	1.58	.42	1.67	.00
Prosocial Behavior	2.37	.59	2.56	.50	2.63	2.76	.38	2.83	.28	2.76	2.09

* $p < .05$.

T2 show that Home-Start mothers reported higher levels of perceived competence than did comparison mothers.

Parenting Behavior

We hypothesized an increase in positive parenting behavior, such as responsiveness, consistency, positive control, observed sensitivity, and warmth, and a decrease in negative parenting behavior, such as rejection, negative control, and observed harsh parenting for the Home-Start group.

Although adjusted means show that Home-Start mothers scored higher than did the comparison group on several measures, only two measures showed a significant effect: The Home-Start group reported more consistency in parenting, $F(1, 100) = 4.38, p < .05, \chi^2 = .05$, and showed more sensitive behavior when interacting with their child than did the comparison group, $F(1, 102) = 5.73, p < .05, \chi^2 = .06$.

Child Behavior

We hypothesized a decrease in negative child behavior, such as internalizing and externalizing behavioral problems and negativity, and an increase in positive child behavior, such as child cooperativeness and prosocial behavior, within the Home-Start group.

As indicated in Table 4, however, none of the changes in child behavior were significant. Inspection of the means suggests that both groups of children showed a decrease in behavioral problems, although we cannot attribute the changes to the Home-Start intervention because there were no significant effects.

DISCUSSION

The purpose of this study was to examine whether the Home-Start parenting support program leads to changes in maternal well-being, and whether effects are still visible in parenting and/or child behavior 6 months after the intervention. The study shows that positive changes were achieved in maternal competence and in two aspects of positive parenting behavior. Findings regarding negative parenting behavior and child behavior were less clear-cut.

Home-Start appears to influence maternal-perceived competence in the expected direction: Maternal competence increased more in the Home-Start group than in the comparison group. The current study confirms and adds to previous research which has shown that mothers who partook in the Home-Start program, retrospectively reported increased well-being (Frost et al., 2000; Hermanns et al., 1997). This increase in well-being can be explained by the various activities in which the volunteers engage. First, well-being might increase because the mothers feel relieved as the volunteers carry out certain tasks (e.g., domestic tasks, shopping, taking care of the children) for them. Second, mothers may be relieved by the emotional support that the volunteers offer through listening, and if asked, through practical advice. It seems that Home-Start's philosophy (that mothers, in principle, are capable of caring for their children) and the Home-Start approach (in which mothers are given advice only when they themselves have asked for it) increase maternal self-esteem. No effects were obtained for maternal depressive moods. A possible explanation for this might be that depressive moods are not necessarily directly related to parenting behaviors whereas parenting competence is (Teti, O'Connell, & Reiner, 1996).

Changes in perceived parental competence are accompanied by some changes in parenting behavior, both self-reported and observed. This is consistent with the hypothesized chain of changes (Moran, Ghate, & van der Merwe, 2004; Trivette & Dunst, 2005), which says that when parents receive adequate support they are more likely to feel better about themselves and to feel more competent. Parents will show increased positive parenting behavior, and as a result, the behavior of the child will improve. Note that only few significant effects were found with regard to parenting behavior, so we must be cautious not to "overinterpret" the results. However, it is still meaningful to discuss the effects that *have* been found, seeing that it would not be easy to detect significant differences between groups with this sample size.

Mothers showed a significant increase in consistency regarding parenting behavior after having received the Home-Start support. This is important because the consistent use of positive or negative reinforcement of behavior immediately following the behavior is a crucial factor in behavior management. Inconsistent behavior may lead children to conclude that their environment is nonresponsive to their behavior (Baumrind, 1996). Consistent maternal behavior has been shown to buffer the effects of stressors (Wolchick, Wilcox, Tein, & Sandler, 2000) and also has been associated with a decrease in child behavioral problems (Owens & Shaw, 2003; Solomonica-Levi, Yirmiya, Erel, & Oppenheim, 2001). The predictability of consistent maternal behavior provides a child with a safe environment; therefore, this increase in consistent parenting is as important as a decrease of negative parenting behavior. The finding that observed maternal sensitivity increased more in the Home-Start group than it did in the comparison group also is encouraging. Maternal sensitivity to the behavior and the emotions of toddlers has been shown to be important to the child's general feeling of well-being (Kivijärvi, Riihala, Virtanen, Lertola, & Piha, 2004). Moreover, maternal sensitivity predicts better socioemotional adjustment for the child in later childhood and adolescence, and may even prevent later behavioral problems (Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2003; De Wolff & Van IJzendoorn, 1997).

In general, the results of the current study indicating an increase of various positive parenting behaviors in the intervention group are in line with previous research (McDonald Culp et al., 2004; Olds et al., 1999; Webster-Stratton, 1997). The fact that parenting behavior has changed makes it likely to assume that it is a matter of time before these changes will have a ripple effect that also will tackle negative parenting behavior. Given the decrease that is visible when pre- and posttest means are compared for negative parenting behavior, it is warranted to expect negative parenting behavior to increasingly diminish over time, although currently none of the changes were significant.

A decrease in negative child behavior (mother-reported child behavior problems, and/or observed child negativity) was expected for the Home-Start group (Patterson, Chamberlain, & Reid, 1982; Webster-Stratton, 1998). The results from this study did indicate a decrease in child behavioral problems as reported by the mother, but none of the effects were significant. Children in both groups showed improvements, most likely due to naturally occurring developmental trends resulting from child maturation. Previous research also has reported a decrease in behavioral problems in nonclinical samples from the age of 3 years and older (Crowther, Bond, & Rolf, 1981, as cited in Campbell, 1995). There are some parenting support programs that have registered a decrease in child behavioral problems compared to control groups (e.g., Olds et al., 1998), but the current findings are not unusual. For example, Webster-Stratton, Reid, and Hammond (2001) also found that parental reports of behavioral problems improved for both the intervention as well as for the control group. A possible explanation is that improvement in child behavior occurs more slowly than do improvements in maternal well-being and parenting behaviors. More time might be needed before increased maternal well-being and increased positive parenting behavior result in positive behavioral changes in the child. Indeed, some evidence already exists that the so-called " sleeper effect " (i.e., the phenomenon that effects are not visible immediately after the intervention, but appear only later on) may be salient with respect to early prevention (Barrera et al., 2002; Tremblay et al., 1995; Vitaro et al., 1999). To detect a possible decrease in behavioral problems, a longer follow-up period will be needed.

Several limitations of this study should be taken into consideration. The main limitation concerns the sample. The Home-Start group was quite heterogeneous because the sample consisted of families with different backgrounds, different risk factors of varying severity, and

varying degrees of engagement with the program. Certain support programs work better for certain groups than for others (Gomby, 1999; Norr et al., 2003). Due to the sample size, we were not able to examine intergroup differences. Although this is unfortunate, using a more homogeneous sample would equally diminish the generalizability of the research findings, as one of the core aspects of Home-Start is that it is open to all regardless of background and risk factors. The usage of a relatively small sample size is a result of the choice we made to use multiple information sources. Many effectiveness studies are based solely on self-reported data. Because the aim of the current study was to measure behavioral changes rather than the participants' satisfaction, observational data of both parent and child behavior were included in this study. This is an intensive method of data collection, which made it currently unfeasible to have a larger sample. A relatively small sample size is a shortcoming that we share with many other intervention studies. In a recent review of methodological characteristics of the studies in the field of youth intervention research, Weisz, Jensen Doss, and Hawley (2005) found that mean sample size across all trials in their review was 22 for treatment groups and 21 for control groups. A replication of this study is needed with a larger sample size for a clearer understanding of the effectiveness of Home-Start.

Another limitation is that the coders of the observed behavior were not completely blind to the status of the mothers. This may have influenced the outcome. It is, however, difficult to predict the direction of this influence. It is possible that the coders were more critical toward the Home-Start mothers because they knew they had participated in the program and therefore "ought to" have improved. On the other hand, it also is possible that the coders were less critical of the Home-Start mothers due to the assumption that mothers and children would show improved behavior.

This study took place in naturalistic settings because the goal was to evaluate Home-Start in the settings in which it is normally applied. The study therefore has external validity, and the results are easy to generalize to clinical practice (Nathan, Stuart, & Dolan, 2000). Methodological shortcomings are a downside to this approach; the most important one is that the sample was not randomly allocated to the treatment- or the control group. Moreover, the unstructured nature and the variations in intensity of intervention between the families make it difficult to identify the successful ingredients of Home-Start.

Notwithstanding these limitations, the current study goes beyond previous research by showing that Home-Start, a parenting support program that works with volunteers, is an intervention that leads to enhance maternal perceived competence. Home-Start also positively affected two important aspects of parenting: consistency and sensitivity. Moreover, these changes were achieved not only for maternal self-report but also for more objective, observational measure.

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