

# Effects of video hometraining on parental communication and a child's behavioral problems

## *Summary*

*In this paper we examine whether Video Hometraining (VHT) enhanced the quality of parent-child interactions and reduces the amount of a child's behavioral problems. VHT is based on a short-term, home-centered, filmed video feedback of family interactions. We compared families that participated in a VHT program with families that did not. The quality of communication was assessed by observations, the amount of a child's behavioral problems with the Child Behavior Checklist (Achenbach, 1978). It appeared that VHT enhances the quality of parent-child interactions and reduces the number of the child's behavioral problems. We also discuss the role VHT may play in institutions for youth welfare.*

## **I. Introduction**

In this study we examine whether Video Hometraining (VHT) enhances the quality of parent-child communication and reduces the number of the child's behavioral problems.

VHT has existed for nearly ten years now and is a popular intervention program within institutions for youth help in the Netherlands. The program is based on a short-term, home-centered filmed video-feedback of family interaction. The main objective is to improve the disturbed relationship, caused by communication problems between parents and child. The basic assumption is that a child's behavioral problems are related to problems of dysfunctional interaction between parent and child.

VHT tries to enhance the quality of parental communication by stimulating interactions which, according to the founders of VHT, form the basis for good communication. Examples of these interactions include being attentive to each other, turning oneself towards someone else when speaking, looking at each other when speaking, speaking with a friendly tone of voice, naming the things you see and do, naming with approval, acknowledging the reception of a message, taking turns, guiding the communication and taking initiative.

After an intake session the video hometrainer visits the family. At this first visit, he explains the principles of VHT to the parents. If the parents agree with the training, appointments are made for the following weeks. In the first week, the video hometrainer records a regular daily situation (for example: having dinner or playing a game with the whole family) which lasts about ten to twenty minutes. In the second week, he/she reviews a selection of positive episodes with the parents. He/she selects those interactions that, according to VHT, form a basis for good communication, in order to emphasize that the parents are able to communicate with their children in a positive way. Significant (non-)verbal communication which is not generally noticed is reflected upon, and all positive interactions are encouraged. This 'immediate video-feedback approach' is based on strengthening and reinforcing any positive communication in the everyday home situation of a family. Recordings are made in one week and reviewed with the parents in the following week. This system is repeated until the video hometrainer and the parents agree that the parents can handle the responsibility of raising their children on their own.

According to its founders, VHT is suited for almost every family that experiences problems raising children, problems which are caused by communication problems between parent and child.

Why is it plausible to assume that VHT has a positive effect on parent-child communication? The positive reinforcement by the video hometrainer of successful interactions should motivate parents to extend the moments of positive contact with their child. According to the social learning theory, this effect is to be expected (Patterson, 1982). First of all, VHT reinforces positive communication; desired behavior increases because the video hometrainer rewards and encourages the parents for the positive role they play in interacting with their child. He/she emphasizes that the parents are able to react adequately to their child's behavior. Second, a video hometrainer applies the principle of negative reinforcement. During VHT parents notice that, due to their own changed behavior, the behavioral problems of the child decrease. This encourages them to react adequately to their child's behavior.

In addition to the reinforcement principle, the modelling principle is used within VHT. According to this principle, many types of behavior are learned through imitation. While talking to the parents, a video hometrainer applies the communication principles of VHT consistently. In this way, he/she serves as a model for the parents. In addition to that, the parents also serve as a model for themselves. The video recordings give parents the opportunity to carefully observe their own behavior. The video hometrainer helps the parents to recognize their own behavior by naming it explicitly.

In view of the above, the positive effect of VHT on communication between parent and child is quite plausible. Many problems parents experience are caused by behavioral problems of the child, at least in their eyes. Early studies (for a review, Maccoby and Martin, 1983) suggest that lack of responsive parental behavior can lead to behavioral problems in children. Since VHT tries to teach parents to respond actively to their child's behavior, it is also likely to lead to a decrease in the behavioral problems the child shows.

Scientific research regarding the effects of VHT is still in its infancy. Only a few empirical studies have been published (Vogelvang, 1993; Muris et al, 1993; Wels, Jansen & Pelders,

1994). In these studies, questionnaires and files research were used to examine the effect of VHT regarding several features of family, parent and child-functioning and the way in which parents perceive their own situation. In general, these studies show that VHT has positive effects. However, all studies also showed methodological shortcomings, especially the lack of control groups.

One empirical study used observers to determine the effect of VHT regarding communication between family members (Weiner, Kuppermintz & Guttman, 1994). This study examined the extent to which positive communication and negative communication between family members had increased and decreased respectively after VHT. Independent observers filled in a questionnaire especially developed to assess the quality of parental communication. The observers joined the social worker for a family visit at the beginning, at the end and six months after ending VHT and indicated on a three-point scale (none-some-much) whether the different types of behavior were present in the communication between the family members. In addition to observers, this study also used a control group to compare the results with. The control group consisted of families who did not participate in the program. The study led to the conclusion that VHT increased positive communication in the family. However, no decrease in negative communication was found, although it was observed that the parents' tendency to neglect or reject initiatives of their children had subsided. However, this study, too, pointed to methodological shortcomings like biased observers (they knew the families that had participated in the program) and a control group which was not comparable to the experimental group.

Based on the theoretical assumptions mentioned above, and because of the lack of thorough scientific research, the study in hand examines the effect of VHT regarding the quality of parent-child communication and regarding the child's behavioral problems. Based on the above, we formulated the following hypotheses: first, after VHT there are more positive and fewer negative interactions between parents and child. Second, VHT leads to a decrease in the child's behavioral problems as experienced by the parents.

We used two designs to test these hypotheses. First, we used a one group pretest-posttest design, in which twenty families participated, to examine the effect of VHT regarding parental communication and the child's behavioral problems. We compared the pretest and post-test results of the quality of parental communication and the extent of the child's behavioral problems. T-tests for paired observations were used to test the differences between pretest and posttest. Although this design is flawed, most researchers have to rely on it because it is often impossible to form an experimental group and a control group at the same time. After all, every family that turns to a welfare institution needs to be helped.

However, a second design can be created on the basis of the first by random splitting and matching the total group into two groups: an experimental group and a control group. This design is comparable with the separate-sample pretest-posttest design described by Campbell and Stanley (1966). In our study we formed two groups of ten families each by matching the children's sex and age and the families' socio-economic status. Next, we compared the posttest of the experimental group with the pretest of the control group. ANOVA was used to test whether the posttest scores of the experimental group differed from the pretest scores of the control group.

## 2. Method

### *Subjects*

20 Dutch families participating in a VHT program were involved in this study. The program was initiated by a youth welfare institution in Nijmegen, a city in the east of the Netherlands with a population of approximately 150,000. The average duration of VHT was eight months. Parents were referred to this institution because of externalizing behavior problems of one of their children (the problem child). The children were between four and twelve years old (mean age 6 years and 9 months). Thirteen of them were boys. Most families belonged to the underprivileged social classes. Only one family was single parented; the mother participated.

The experimental group was comparable with the control group with regard to sex and age of the children and socio-economic status of the family. This was the result of the matching procedure used in this study. The same was true for the children's behavioral problems; no differences were found between the two groups (see table 1). Preceding VHT, all parents were asked to fill in the Child Behavior Checklist (Achenbach, 1978; Achenbach & Edelbrock, 1979). This questionnaire assesses the extent to which a child shows externalizing and internalizing problems. Scores are expressed in T-scores. In table 1 the mean internalizing and externalizing scores are presented for both groups. Table 1 clearly shows that, before VHT was started, no differences were found between the number of behavioral problems which parents from the experimental group experienced compared with the number of behavioral problems which the parents from the control group experienced.

**Table 1.** *Mean Externalizing and Internalizing Scores of the Experimental and the Control Group in the Pretest*

	Experimental Group	Control Group	F-value	p
<i>According to Father</i>				
Externalizing	59.40	66.56	2.52	n.s.
Internalizing	55.10	56.78	0.13	n.s.
<i>According to Mother</i>				
Externalizing	62.40	68.70	1.86	n.s.
Internalizing	58.80	61.60	0.43	n.s.

## 3. Measures

### *Quality of parental communication*

The first two and the last two video recordings made by the video hometrainer in each family were used to assess the quality of parental communication. Most recordings were made at meal-times or when family members performed a task or played a game. Most video recordings lasted about ten minutes. We observed and transcribed the verbal and non-verbal communication between parents and the problem child. During observation, we noted who interacted with

whom. We also noted whether a parent looked at the child when talking to him/her, and whether parents talked with a friendly tone of voice. Video hometrainers consider looking at the child and talking with a friendly tone of voice to be characteristics of positive communication.

We coded each instance of parental behavior in accordance with our observation system. This system includes the following six main categories.

1. Positive communication while looking at the child and talking with a friendly tone of voice. Types of behavior in this category are: naming (a parent described what he/she was doing), naming with approval (a parent accompanied whatever he/she is doing with the child with an encouraging verbal description of what was taking place), taking the lead (a parent took the initiative and guided the child when he/she needed to know what was expected), taking initiative (a parent tried to restore communication with the child by means of a question or a remark), acknowledging the reception of a child's message or initiative (a parent showed that he/she has heard the child), supporting (e.g. joking, comforting, making emphatic remarks), following (a parent looked at the child or in the direction of the child's activity), asking and giving explanations (a parent asked the child about an issue or gave information about an issue the child was interested in), and positive physical contact (e.g. kissing, hugging, patting).
2. Positive communication while talking with a friendly tone of voice, without looking at the child. This category includes all types of behavior as described at the first category, with the exception that the parent is not looking at the child while talking;
3. Negative communication while looking at the child and talking with an unfriendly tone of voice. Types of behavior in this category are: taking a negative initiative (a parent tried to restore communication with the child in a manner that was not pleasant for the child), showing disapproval (a parent disapproved of the child's behavior), commanding (a parent ordered or forbade behavior), provoking (a parent challenged the child), and negative physical contact (e.g. hitting, slapping).
4. Negative communication while not looking at the child and talking with an unfriendly tone of voice. This category includes all types of behavior as described at the third category, with the exception that the parent is not looking at the child while talking.
5. No reaction. The parent did not name his/her behavior or did not adequately react to the child's initiative, while he/she was expected to do so according to VHT rules.
6. Other types of behavior like warning (commands and disapproval expressed with a friendly tone of voice), disagreeing (the parent disagreed with the child), neutral behavior (neutral questions and answers), and non-verbal neutral parental behavior that was important to understand the flow of interaction.

To assess inter-rater reliability, both authors independently coded eight protocols. Cohen's Kappa was .77 for the observation system as a whole. We counted how many parental interactions were directed towards the child during the first two and the last two video recordings. We also counted how many of these interactions were part of each of the six behavior categories. Next, we computed proportions, indicating the percentage of behavior that was part of any of the six behavior categories.

We limited the analyses to the first five categories. Video hometrainers see interactions in the third, fourth and fifth categories as forms of negative communication. Interactions in the first category are seen as forms of positive communication. This applies to the second behavior category only to a lesser extent, because here the parent does not look at the child while communicating positively.

### *Behavioral problems*

To assess the extent of the child's behavioral problems as experienced by the parents, we asked them to fill in a Dutch version of the Child Behavior Checklist (CBCL) (Verhulst, Koot, Akkerhuis & Veerman, 1990) at the start of VHT and after VHT had ended. The CBCL consists of 118 three-point items. Based on the norms published by Verhulst et al. (1990), two normalized T-scores have been computed, one to assess the number of internalizing problems and one to assess the number of externalizing problems.

## 4. Results

The first question of this study was whether parents communicated more positively and less negatively with their children after participating in a VHT program. In table 2, the relative incidence of each of the five behavior categories during the first two video recordings (the pretest) and the last two recordings (the posttest) are presented. It was tested whether the proportions in the pretest differed significantly from the proportions in the posttest. T-tests for paired observations were used to test these differences. The proportions of the first behavior category (positive communication while looking at the child and talking with a friendly tone of voice) clearly show that fathers and mothers communicated more positively with their children during the posttest than during the pretest. At the posttest we also found a decrease in paternal and maternal positive communication without looking at the child compared with the pretest (compare the proportions of the second behavior category).

**Table 2a.** Mean Relative Incidence of the Communication Categories in the Pretest and the Posttest

	Pretest	Posttest	t-value	p
<i>Communication by Father</i>				
1. Positive Communication				
While Looking at the Child	63%	78%	-2.65	< .01
2. Positive Communication				
Without Looking at the Child	14%	7%	2.46	< .01
3. Negative Communication				
While Looking at the Child	8%	2%	3.99	< .01
4. Negative Communication				
Without Looking at the Child	1%	1%	0.22	n.s.
5. No reaction	7%	2%	2.47	< .01

Table 2b.

	Pretest	Posttest	t-value	p
<i>Communication by Mother</i>				
1. Positive Communication				
While Looking at the Child	59%	85%	-5.66	< .01
2. Positive Communication				
Without Looking at the Child	13%	7%	2.57	< .01
3. Negative Communication				
While Looking at the Child	12%	1%	4.41	< .01
4. Negative Communication				
Without Looking at the Child	2%	2%	-0.63	n.s.
5. No reaction	8%	3%	2.47	< .01

Table 2 also shows that most of the parental communication with the child was positive, irrespective whether communication took place during the pretest or the posttest. This was partly due to our operational definition of positive communication. Behavior such as asking and giving explanations occurred frequently and is part of the first category. VHT is not intended to change the frequency of these interactions. It is more important to promote other types of behavior in the first category like naming, taking the lead or taking initiative. We analyzed whether positive communication would also increase if we used a more restricted operational definition of positive communication. After excluding the categories of asking and giving explanations from the first behavior category of positive communication, it appeared that 39% of the communication of fathers with their children was positive during the pretest, and 49% during the posttest ( $t = -2.25$ ,  $p < .05$ ). For the mothers' communication these percentages were 38 and 55 respectively ( $t = -5.03$ ,  $p < .01$ ). Based on these findings, we conclude that positive communication increases after VHT, even if a narrower definition of positive communication is used.

Table 2 also shows that parents communicated less negatively with their child during the posttest than during the pretest. This conclusion is based on the significant decrease in the third behavior category (negative communication while looking at the child and talking with an unfriendly tone of voice). A significant decrease in the fifth behavior category (no reaction) was found too. Parents were more inclined to name their behavior and to react adequately to the child's initiative during the posttest than during the pretest.

We found similar results when we compared the experimental group with the control group. For both groups, the relative incidence of the five main behavior categories is presented in table 3.

**Table 3.** Mean Relative Incidence of the Communication Categories in the Experimental Group and the Control Group

	Experimen- tal Group	Control Group	F-value	p
<i>Communication by Father</i>				
1. Positive Communication While Looking at the Child	89%	67%	15.66	< .01
2. Positive Communication Without Looking at the Child	8%	12%	1.18	n.s.
3. Negative Communication While Looking at the Child	0%	10%	6.39	< .01
4. Negative Communication Without Looking at the Child	0%	1%	3.70	< .01
5. No reaction	2%	6%	7.10	< .01
<i>Communication by Mother</i>				
1. Positive Communication While Looking at the Child	88%	59%	35.94	< .01
2. Positive Communication Without Looking at the Child	5%	10%	3.13	< .01
3. Negative Communication While Looking at the Child	2%	14%	9.66	< .01
4. Negative Communication Without Looking at the Child	0%	1%	1.90	n.s.
5. No reaction	2%	10%	9.63	< .01

We tested whether parental communication in the experimental group was more positive and less negative than in the control group. ANOVA was used to test differences between the experimental group and the control group. Table 3 shows that fathers and mothers in the experimental group communicated more positively with their child and looked at their child while talking more often than parents from the control group. This conclusion is based on the significant differences between the two groups with regard to the first behavior category. For mothers in the experimental group we also found less positive communication without looking at the child compared with the mothers from the control group (compare the proportions of the second behavior category).

After excluding the behavior categories of asking and giving explanations from the operational definition of positive communication, the differences between the two groups remains significant; 55% and 39% of the communication of fathers in the experimental and control groups respectively was positive ( $F = 4.84, p < .01$ ). For the mothers these percentages were 68 and 37 respectively ( $F = 13.23, p < .01$ ).

Table 3 also shows that parents in the experimental group communicated less negatively with their children than parents in the control group (compare the proportions of the third and fourth behavior categories). We also found that fathers and mothers in the control group were



less inclined to name their behavior and to react adequately to the child's initiatives than parents in the experimental group (compare the proportions of the fifth behavior category). We therefore conclude that negative communication decreased after VHT.

The second objective of this study was to analyze whether the children's behavioral problems decrease after VHT. For the total group of 20 children, the mean externalizing and internalizing scores in the pretest and the posttest are presented in table 4. Differences between pretest and posttest were tested with T-tests for paired observations. Table 4 also shows the mean externalizing and internalizing scores of the 10 children from the experimental group in the posttest and of the 10 children from the control group in the pretest. Differences between the scores of the experimental group and the scores of the control group were tested with ANOVA. Table 4 clearly shows that there are significant differences between pretest and posttest as well as between experimental and control group. This indicates that parents experienced fewer externalizing and internalizing problems with their children after participating in a VHT program.

**Table 4.** Mean Externalizing and Internalizing Scores of the Experimental Group in the Pretest and the Control Group in the Posttest, and Mean Externalizing and Internalizing Scores in the Pretest and the Posttest for the total group

	Experimen- tal Group	Control Group	F-value	p
<i>According to Father</i>				
Externalizing	49.50	66.56	12.50	< .01
Internalizing	45.40	56.78	8.94	< .01
<i>According to Mother</i>				
Externalizing	52.20	68.70	13.69	< .01
Internalizing	48.30	61.60	10.53	< .01

	Pretest	Posttest	t-value	p
<i>According to Father</i>				
Externalizing	62.79	51.31	5.48	< .01
Internalizing	55.89	49.79	2.76	< .01
<i>According to Mother</i>				
Externalizing	65.55	55.60	5.11	< .01
Internalizing	60.20	52.40	4.17	< .01

## 5. Discussion

This study demonstrates that VHT is an effective treatment. We have found that the incidence of positive parent-child communication had risen and that the incidence of negative parent-child communication had fallen, and that parents experienced fewer externalizing and less internalizing problems with the child after having participated in a VHT program. This study shows only short-term effects of VHT, because the posttest was related to the last two video recordings in each family. Follow-up studies might show whether VHT has a more lasting effect on both communication processes and the number of behavioral problems parents experience.

We have found that parents generally communicated positively with their child. This finding questions the ecological validity of the observation system we used. Did parents try to make a good impression on the video hometrainer? Even if this were the case, however, it would not alter the results of the study. Parents may have tried to impress the video hometrainer during the pretest, because they have to get accustomed to the presence of a camera and the video hometrainer in the family. By the time of the posttest, however, months later, the parents had grown accustomed to the camera and the video hometrainer. Parental communication was found to be more positive during the posttest compared with the pretest. In view of the above we would have expected the difference between pretest and posttest to be the opposite of the difference found. We have no reason to assume, therefore, that the increase in positive communication was caused by socially desirable behavior of the parents.

In this study we used two designs. First we used a pretest-posttest design without a control group. This design is flawed, because it is possible to ascribe the different scores in posttest and pretest to factors such as history, maturation etc. (Cook & Campbell, 1979). In the area of social work, however, most researchers have to rely on this design because ethical reasons often make it impossible to form an experimental and a control group at random. This study shows that it is possible to form an experimental and a comparable control group by matching families afterwards. With this second design we also found that negative communication decreased after parents had participated in a VHT program. The children's behavioral problems decreased as well after VHT.

The results raise the question whether the decrease in the children's behavioral problems should be explained by the decrease in parental negative communication. Both in the pretest and the posttest, we found significant correlation between negative parental communication and the number of externalizing behavior problems parents experienced ( $r = .50$  and  $.53$  for fathers and  $.48$  and  $.36$  for mothers). However, significant correlation between the decrease in negative communication and the decrease in externalizing behavior problems was not found. On the basis of this study, we cannot conclude that VHT results in a decrease in behavioral problems because of the decrease in parental negative communication.

The decrease in the children's behavioral problems may also be interpreted in a different way. Maybe the parents experienced their child's behavior as being less problematic after VHT, because video hometrainers had taught them not to regard all the child's behavior as

negative. Interpreted in this way, VHT does not only directly influence the way parents communicate with their child, but also the way in which parents perceive their child's behavior.

In the Netherlands, the use of VHT by social workers is on the rise. It is seen as a panacea to solve all the problems video hometrainers are confronted with when visiting families in need. According to the authors of a very influential book on VHT published in the Netherlands (Dekker & Biemans, 1994), VHT should not only be used to improve the quality of parental communication, but also to enhance the daily life organization of a family, a child's development, the development of parents and the family's participation in society.

In our opinion, this extension of VHT is too ambitious. VHT was developed to solve communication problems in families, and its use should be restricted to solve these types of problems. It goes too far when a social worker tries to enhance the cognitive development of a child or tries to reorganize a family's daily life by using nothing but VHT. The social work tradition has developed many other methods to solve these types of problems. Use of VHT only makes sense if, after careful diagnosis, it appears that communication problems play a role in the dysfunctioning of a family. This is why we do not support Dekker and Biemans' view (1994) that priority should be given to VHT in all institutions for youth help or social work. A social worker is mostly confronted with a range of problems in a family, and some of these problems are related to dysfunctional communication. It is useful to apply VHT to solve these specific communication problems. To solve other problems, social workers have many other methods and treatments at their disposal.

We also disagree with Dekker and Biemans (1994) that the diagnostic process in VHT only starts after the first video recording has been made in a family. In our opinion, it only makes sense to use video recordings if a social worker knows in advance that communication problems exist. Analysis of the first video recordings is only useful if it is clear from an initial diagnosis that the parents' communication patterns need to be changed. Additional analysis of the first video recordings may indicate how the quality of parental communication may be enhanced.

The fact that the children's behavioral problems decrease after VHT may be seen as a positive transfer effect. We did not study whether VHT also had a positive effect on other domains of family life. Further research on this subject is required.

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