Early home visitation in families at risk for child maltreatment

Bouwmeester-Landweer, M.B.R.

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General discussion

1 Introduction

This study was a first attempt to establish the efficacy of a prevention program for families at risk of child maltreatment in a randomized controlled setting. In this final chapter we reflect upon what we have done, how we have gone about that, what results we gained and where we should go from here. There are three main topics for this last chapter. These are the method of selecting families at risk, the implementation and efficacy of the intervention of choice, and the future implications of this study.

We first discuss the selection of families at risk. How did the instrument we designed for this study perform compared to other instruments? What theoretical perspective did we assume when designing our instrument and why did we do so? Which results were obtained from parents and nurses and to what use can we put these results?

Secondly, we discuss the implementation and efficacy of our prevention method, that of home visitation. We review the choices we made regarding the design of our study and their possible implications. We continue to discuss the results that were obtained and the considerations that go with the effects as they were generated through our different measurements.

Finally we address the future implications of our study. Which topics should be further investigated and what is our conclusion regarding implementation of the program in the practical setting?

2 SELECTING FAMILIES AT RISK

At the beginning of this thesis, in chapter 2, we have presented different definitions for prevention and chose to integrate the definitions of Caplan (1964) and Gordon (1983) into *indicated primary prevention*: "Primary prevention involves lowering the rate of new cases by counteracting harmful circumstances before they have had a chance to produce 'illness' ..." ([12, p26]), this should be "applied to persons who are found to manifest a risk factor that identifies them, individually, as being at high risk for the future development of a 'disease'..." ([41, p21]). In chapter 4 we returned to this choice, stipulating the reasons why this choice needed to be made. We chose indicated primary prevention in spite of the chances that we would reach smaller effects. We chose indicated primary prevention because we consider a family at risk to be in need of intervention and support, not only because of a future risk but first of all because of current dire circumstances. And most of all, we chose indicated primary prevention for practical reasons, because universal primary prevention with sufficient intensity just is not affordable at current times ([18; 29]).

This choice requires the selection of families at risk and it requires an instrument to perform this selection. Given the design of our intervention (which will be addressed in paragraph 3.1) such an instrument should be administered at an early stage, preferably perinatally. A number of instruments could be deployed for the selection of families at risk, such as the Child Abuse Potential Inventory ([40]) focusing primarily on parental psychosocial functioning or the Short Psychological and Pedagogical Problems Inventory ([32; 33]), focusing primarily on aspects of child well being, behavior and development as well as parental attitudes, the parent-child dyad and influences of family stressors. Aside from these possibilities we found several instruments that were developed with the purpose of determining the population of families at risk based on a large scope of variables. These instruments mainly originated in the United States, but also in Belgium, the United Kingdom, Greece, New Zealand and Australia ([1; 3; 4; 11; 21; 27; 42; 43]). Most of these checklists, except for two of them ([27; 42]), addressed both demographic and psychosocial items. The two exceptions addressed psychosocial items only. Publications on six out of eight checklists also provided a percentage of families found to be at risk through actual prospective application of the instrument, which ranged from 6.7% to 39%. The instrument for selection we have designed for this study was similar to previous

designs in a number of ways. Our instrument contained 21 questions per parent addressing both demographic and psychosocial items with the emphasis on psychosocial items. The choice for these items was first of all based on the review of risk factors for child maltreatment as we have presented in chapter 3. Considering the examples of earlier instruments developed as well as the strength of the relationship between a particular risk factor and child maltreatment a number of factors were chosen for our instrument. Through several expert-meetings with experts in theory (scientists) and practice (nurses) the wording as well as the weight for each particular question was decided.

At the base of our decisions concerning our selection instrument are the paradigms chosen for this study (see chapters 2 and 3). By working from the ecological model presented by Belsky (1980) ([7]) combined with the notion of parental awareness ([6; 44]) we chose to approach the parenting situation from the parental perspective. That is, we included all systems from the ecological model but emphasized the role of the parent and his or her parental interactions. For, as Van der Pas (2003) put it, Belsky's model "tunnels a set of determining influences through a box, called 'parenting', and declares child development to be the end product of what goes on in that particular box" ([46, p78]). We needed the notion of parental awareness to understand what goes on in this 'box' of Belsky. Of course we could have chosen other paradigms for this study, ones that place more emphasis on the wider parenting situation or on the child and its development. However, this would require a different point of view. In chapter 3 we discussed how the family (micro) system, including the characteristics and development of the child, and the wider supporting (exo) system do indeed influence the parenting situation. Still, in the end it is the way in which parents cope with these influences that can lead the parenting situation towards maltreatment, and the parental coping abilities are in turn influenced by their personality and developmental history. Thus, from our point of view, based on theoretical and empirical considerations (see chapter 3) the parent-centered approach is the obvious one.

From this approach then, we asked ourselves what constitutes parenting? If we are to understand child maltreatment as a parenting problem, as was established in chapter 2, it makes sense to select parents at risk for maltreatment based on risk factors that are most related to parenting. Van der Pas considered a parent to be "a

person with an awareness of being responsible for a child, unconditionally and forever" ([46, p62]). This definition focuses "on the ethical quality of the parental stance *vis a vis* a child" ([46, p41 -original italics-]). It rises above biological ties, procreation and child rearing proper as "the essence of the parental stance is not biological or psychological in nature, and does not refer to rights, duties and the generally known responsibilities of parents" ([46, ibidem]). Van der Pas claimed that this definition is not affected by differences in class, race, gender, religion, sexual orientation and intellectual endowment; essentially all demographic factors. Parenting is much more influenced, according to Van der Pas, by the community values on parenting, the accessibility of services (including those from family, friends and, particularly, spouse), the parental ability to reflect upon their actions as parents and finally the experience of 'good parent moments' ([46]); factors that could be classified within the 'psychosocial domain'. Therefore we have placed more emphasis on psychosocial risk factors in our selection instrument, and less emphasis on demographic risk factors.

Amongst the risk factors we chose, there are several factors that in itself are subject to little change, such as the experience of childhood maltreatment in parents, or single parenthood. One could argue against selecting families based on relatively static risk factors when the purpose of this selection is a preventive intervention. We made this choice for two reasons. First of all, the presence of these factors contributes to the amount of risk in a family as was found in chapter 3. Secondly, although these factors themselves cannot be changed, the way they are perceived by parents can indeed be altered through an intervention, resulting in improved parental actions.

2.1 Results of selection

After thirteen months of deploying our instrument in the local population of families with a newborn child we defined 17.0% of these families to be at risk. This percentage resulted in a sample of 511 families willing to participate in our preventive intervention as is described in chapter 8. Selecting a population for our preventive intervention was however not our only goal in deploying the questionnaire. While literature is scarce regarding the actual numbers of families with newborns at risk to be found in a population, in the Netherlands knowledge on the incidence of individual risk factors as well as the amount of families at risk is virtually nonexistent. Therefore charting the incidence of individual risk factors in

the Netherlands was a second important goal to be achieved through our questionnaire. As is the case in foreign studies, our estimate of the amount of families at risk depended on the threshold set for 'at-risk' status. Although another threshold would have generated another percentage of families at risk, information gained with the threshold set for this study is useful to increase knowledge on the size of the Dutch at risk population.

With regards to individual risk factors our goal has been achieved to some extent. When comparing our findings in chapter 5 to international findings the proportion of Dutch families presenting particular risk factors is similar or in some cases lower (such as current spousal violence and sexual abuse). As was discussed at the end of chapter 5 this could be due to several causes, for instance the timing of our questionnaire, the possibility of socially desirable responses and the cultural differences between the Netherlands and other countries, such as the United States, from which much of the research used for comparison originated. Our findings probably constitute an under-estimation of incidence of individual risk factors. Due to the possibility of socially desirable responses, the amount of non-response to our questionnaire and the characteristics of the region in which our study took place (a mostly rural area with only few larger cities in it) we cannot be sure that the percentages we found are representative for the entire Dutch population. Regarding the total percentage of families 'at-risk' we bear in mind that another threshold would have generated a different percentage. Still, the percentage found in this study lies well within the range found through other (foreign) selection instruments. For the Netherlands it has recently been confirmed by research in another province in the Netherlands, Zeeland, where 19.4% at-risk families were found at 18 months after the birth of a child in the family ([47]).

A very important question regarding the selection of families at risk is whether we did in fact select the right families. Data presented in chapter 8 regarding the number of child maltreatment reports indicate that our instrument was in fact rather successful in depicting which families were at increased risk. Only 0.1% of the families found to be at low risk were reported to the AMK (*Advies en Meldpunt Kindermishandeling*, the Dutch maltreatment reporting agency), compared to 1.2% in families at risk. This means that the Negative Predictive Value (indicating the percentage of families that will not maltreat their children amongst the population

supposed to be 'low risk') of our instrument is high (99.9%). Since there will never be a 100% reporting rate at AMK's we cannot make statements about the Positive Predictive Value (the percentage of families amongst high-risk families in which actual maltreatment will be found) based on these data. With these numbers we should of course consider the non-response to our selection questionnaire. The fact that 0.7% of these families were reported for suspected child maltreatment confirms our findings in chapter 6. In this chapter we concluded that part of the non-respondent population was at increased risk for maltreatment although our data were not suited for the determination of an exact proportion within the non-respondent group. We assumed that part of this group did not respond for other reasons such as lack of time, illiteracy and failure to understand the purpose of our study. This assumption is confirmed by the fact that the proportion of reported families amongst non-respondents is lower than the proportion of reports from our high-risk group.

Because we envisioned future implementation into daily Child Health Care practice for our program if proven successful, we placed particular emphasis on the Well Baby Clinic nurses' perception of a family. As was presented in chapter 5, nurses considered 4.3% of all families to be at risk, which is only about a quarter of the total number of families found to be at risk through parental reports on our questionnaire. We assumed that this might be explained by the fact that nurses weigh the presence of protective factors in their assessment and furthermore that their assessment may be influenced by, for instance, their amount of experience and the extent of disclosure in parents. Compared to the risk factors reported by parents it appeared that nurses' concern coincided most often with directly visible risk factors such as signals of psychological problems, single parenthood and low birth weight. Statistical relations between nurses' concern and parental developmental history or social isolation were nonsignificant.

We have reason to believe that the proportion of families raising a nurses' concern would be higher if we were to select families now, three years later. This is related to the fact that recently the issue of parental developmental history has been added to the questions in the WBC-dossier that is to be started at the nurses' first visit to a family. It seems plausible that this addition to the nurses' routine will have made them more sensitive to the risk factors related to a problematic developmental

history. Furthermore we feel that nurses in the study-region have improved their assessment skills due to this project, which would influence the rate of families identified to be at risk in future implementation in this particular region. In a survey conducted after the selection was completed, 71.4% of all participating nurses indicated they had become more alert to the signals of at-risk families (data not previously presented).

The proportion of families nurses expressed concern about is again well comparable to the Zeeland study referred to earlier, where 3.3% of families caused concern in nurses ([47]). Finally, when we assess the reliability of the nurses' concern we find the same Negative Predictive Value as we found based on the entire questionnaire. The selection of families based solely on the nurses' assessment may appear to be a good option based on these results, however, nurses missed at least 10 families that were reported in the at-risk group based on parental responses. As such it is our conclusion that the combined selection procedure of both nurses' assessment and parental self report remains the best option.

3 PREVENTION IN FAMILIES AT RISK

Based on an extensive review of 28 different prevention programs Geeraert (2004) described several essential elements for a successful prevention program ([24]). In accordance with a number of other publications ([for instance 28; 37]) she concluded that home visitation was the most promising form of primary preventive intervention. Home visits should start prenatally or immediately postnatally and they should be lengthy and intensive. Home visits should be provided on a voluntary basis and their contents and aims should be plural - aside from parenting skills, parental personal problems, individual family circumstances and social support should be targets of the intervention as well ([24]). In chapter 4 we presented a number of possibilities regarding the design of a home visiting program, on which we based the decisions for our study.

3.1 Implementation

We chose to implement our program postnatally, contrary to a number of other programs ([like 19; 38; 45]) that preferred to start during pregnancy. It appears that this preference is often based on a study by Larson (1980) comparing different initiation points for preventive studies and concluding that a prenatal onset is most effective ([34]). Both Guterman (1997) and Geeraert (2004) point out that no other studies provided support for the findings of Larson. Since both prenatal and postnatal studies gained positive results there is no strong empirical evidence for the choice of a prenatal onset over later program initiation ([24; 28]). That being said, there are some practical considerations, related to, amongst other things, the possibility of forming a bond between parent and visitor, as we discussed in chapter 4. Our choice to start postnatally was mostly based on our possibilities for implementation: given the setting of our study, placed in the Well Baby Clinics, recruitment of families was easiest right after the birth of a child in a family. As a consequence the intervention had to start postnatally as well. As was presented in chapter 7, the establishment of a functional bond between parent(s) and home visitor was very successful despite the fact that home visits were not initiated prenatally.

Many suggestions have been made about the duration and intensity of preventive programs. According to Cohn-Donnelly (1992) visits should last at least six months

and preferably three to five years ([17]). In her review Geeraert concluded that visits should take place at least every other week at the beginning of the program. The intensity of a program could be reduced after the first six months ([24]). Empirical evidence for the best 'dosage' of preventive programs is ambiguous. As an example, Gabinet (1979) found that improvement in families was related to the duration of the intervention ([22]). More recently MacLeod and Nelson (2000) found that parental behavior improved most when a maximum of 12 home visits was provided ([36]). Finally Chaffin, Bonner and Hill (2001) found no relationship between program intensity or duration and outcomes ([14]). Our choice was to provide a relatively mild program, including six visits over 18 months, the first three of which took place within six months. Again, this choice was largely based on practical (financial) grounds. Aside from empirical evidence suggesting that a higher dosage of intervention does not automatically imply better results, there are several practical considerations, as were outlined in chapter 4. A high-dosage program may send the message that parents cannot cope without constant surveillance. Also chances of drop out increase as a higher demand is made on the availability of parents. It should however not be forgotten that part of our intervention was the referral of families to specific professional support whenever necessary, something that was accomplished very well as was presented in chapter 8. Based on the results in chapter 7 we conclude that the design of this study was implemented successfully and generated a high level of satisfaction in participating parents. This is contrary to several other programs that were unable to provide visits as scheduled ([for example 31]) or lost a substantial part of their clients before the end of the program ([for example 20]).

Regarding the contents and aims of a successful intervention program Geeraert stipulated that the mere provision of parenting education will not be sufficient. Essentially programs should aim at parenting and childrearing, at personal problems and needs of the parents, at the (material) family circumstances and at the social support a family can expect. As such a program should be tailor-made to the individual needs and possibilities of each family participating in the program in order to be successful ([24]). The core of our program was the paradigm of parental awareness ([5; 6; 44]). We placed this paradigm within Belsky's ecological system ([7; 8]) as was visualized in chapter 4. As a result social and professional support systems and family stressors became a focal point for our intervention, but the central notion remained parental awareness: perceptions, expectations and sensitivity, of and

towards the child but also towards the parent's own history, interests and needs. The way this focus was exercised during the home visits has much to do with two of the 'moderator mechanisms' proposed by Van der Pas (2003): 'taking a meta-position' and 'good parent-moments', two closely related concepts. Taking a meta-position is described as a mental activity of reflection, which "differs from the awareness of being responsible in that it is a mental and managerial activity, rather than an ethical stance [...] meta-thinking places the parent above the emotional turmoil, the deliberational dilemmas and the behavioral hassles of the day" ([46, pp260]). The experience of good parent-moments reinforces self-confidence, which then leads to better performance and eventually to personal growth ([46]). Essentially a good parent-moment constitutes part of taking a meta-position. By emphasizing parental positive behavior during home visits, nurses can help parents reflect on their behavior (at a meta-position) to understand what created the success. This will in turn reinforce future positive performance as a parent. Combined with the direct support parents experienced from the nurses that visited them and the social and professional support parents learned to mobilize, we assumed that our program had potential for success. The sense of accomplishment in nurses as well as the large proportion of families considering the program to be meaningful to their parenting competence (85%) confirmed this assumption (see chapter 7).

3.2 Results of intervention

As was previously established, the satisfaction about the program offered in this study was very high (see chapter 7). We feel that this satisfaction was not only expressed through the survey held amongst parents in the intervention group but also through the retainment of participating parents in the study sample at large. Ninety-two percent of these parents responded to all measurements, a proportion that is larger than most other studies (a review by Gomby (1999) found the highest percentage to be 80 ([26])).

The effects of this study were researched based on several outcome parameters, the first of which is obtained from the AMK. Considering the fact that the reporting of maltreatment is not mandatory in the Netherlands combined with the fact that only 27% of all reports concerns children age three or younger ([49]) an under-representation of reality should be expected on this parameter. Nevertheless we concluded first of all that, three years after the first of 8899 children in our sample

was born, 0.58% of all children were reported to the AMK. Secondly, when considering only third-party reports, more reports were made in the control group in comparison to the intervention group. Since maltreatment is a relatively rare incident in the population (23 in each 1000 children are maltreated each year ([based on 48])) we have to work with very small numbers. It should therefore not be surprising that differences between both groups are not significant. Perhaps the most interesting result on this parameter is the fact that the number of reports in the intervention group is tripled (from 1 to 3) when reports made by the programs' nurses are included. This suggests the increased ability for early detection of our preventive program. Off course we need to keep in mind that we are drawing conclusions based on very small numbers, which means they are less reliable and therefore warrant modesty.

Just like in a number of other studies ([see 24; 25; 26; 28; 37 for reviews]) another parameter we used was related to health-care outcomes that could constitute an indication of maltreatment, such as visits to the emergency room and diagnoses related to injuries, intoxications and other worrisome problems. No significant between-group differences were found on these variables, however sub-group research is yet to be conducted. The fact that Olds, Henderson, Chamberlin and Tatelbaum (1986), as one of few, did find significant differences particularly for babies of poor, unmarried teenagers ([45]), provides an indication that sub-group research may be worthwhile. An interesting finding related to this area is the fact that families in the intervention group established significantly more relationships to professional psychological support. Data about professional support was initially required to determine the influence of support upon the effects as reported by parents. However, no interaction effects related to professional support were found. Though consequences of this difference between groups may not have been visible in our measurements, they might become visible in the future.

As the central focus of our intervention program was parental awareness, our parameters for establishing the effects have been largely attuned to this paradigm. In chapter 8 we argued that results on the KIPPPI (Short Psychological and Pedagogical Problems Inventory) can to some extent be related to the improved perception parents have of their children. We subsequently conclude that two out of four notions of parental awareness (expectations and perception) were modestly

improved through the intervention. There are several considerations to these results. First of all there is the fact that these parameters rely on parental self-report. As was discussed in chapter 8 we should consider the presence of bias in these reports. In addition there is the matter of 'psychological costs' as discussed by Garbarino (1986). He concluded that the increased knowledge and understanding of parenting and related constructs (such as the parents' developmental history or ontogenic development ([8])) may cause doubt, insecurity and worries in parents ([23]). This has probably influenced responses to consecutive measurements and may even constitute a partial explanation for both the reversed effect found in the AAPI construct E (*non-oppressive parenting*) and the overall small sizes of the effects of this intervention found in our study. Secondly, we should consider the timing of our final measurement, which was taken at the time the index-child turned two years. This period in the child's development is commonly referred to as the 'terrible two's'. By nature children in this stage are very explorative and testing the boundaries that parents set for them ([9]). For parents this is a trying time, which may have influenced their responses to our final measurement. Finally, we should not forget that the instruments used to determine these parent-related parameters presume to measure parental attitudes, which cannot simply be considered equal to parental actual behavior ([see 2]). Intuitively it makes sense that, especially in families at risk, parental attitudes may be divergent from their actual behavior. It is quite conceivable that, particularly under stress, parents may not be able to act upon their beliefs. With these considerations we expect responses to be somewhat biased. However, since there are a number of influences at play regarding these responses, we cannot tell the direction of this bias.

Regarding the individual constructs in our parental self-administered measurements there are two final remarks to be made. First of all related to the AAPI A (*expectations*) construct, on which scores improved significantly when compared to the control group after one year. The fact that effects lost significance after two years might imply either one of two things: possibly the intervention should have been continued over a longer period of time to realize lasting improvement on this construct, or perhaps nurses should have provided more information about future development of the child to parents. Secondly, there is the inconsistency between the nurses' observation of significant improvement of social support (see chapter 7) and the parental report of a small decrease in social support through our

measurements. This may in part be due to differences in the wording and particular aim of the questions used. In their study Olds et al ([45]) found conflicts with relatives to be a negative side effect of the intervention. If this is the case in our study as well, perhaps it may serve to mask actual positive effects related to social support when assessed through parental self-report.

The instruments used in this study, particularly the Social Support Questionnaire and the Child Abuse Potential Inventory have presented us with some difficulties. Regarding the first instrument important information was unavailable at the time a choice had to be made. We later learned that the author of this instrument had no scoring system and no norms available and furthermore that she no longer supported the quality of this instrument ([10]). In retrospect another instrument should have been chosen to measure social support. Regarding the second instrument the recent publication by Chaffin and Valle (2003) on the CAP's lack of usefulness in determining the dynamics of an intervention ([15]) made us less satisfied about our initial choice for this instrument. Still, no other instrument could have been found to measure the risk for maltreatment. Looking back, perhaps we would have chosen different instruments, yet the fact remains that there are no tailor-made instruments available to measure all the intended effects of a preventive intervention such as the one under evaluation in this study, at least not in the Netherlands. This is not surprising as trials such as this one are scarce or non-existent in this country. As a result one has to assemble a package of instruments each measuring partial objectives of a study. To maintain instrument size and time-investment below reasonable limits (thereby avoiding non-response) one has to make choices, thus excluding certain parameters. As a consequence, this study's objective to increase parental stress-coping abilities was insufficiently measured. Also there were no measurements found that could adequately establish the improvement of parental insight into 'conflicting claims' (a construct within parental awareness).

4 Future directions

Although this study has covered many issues related to the prevention of child maltreatment in families at risk through home visitation, there is yet much research to be done. An important shortcoming throughout our research was the lack of actual Dutch data on the incidence of maltreatment, particularly in children of young age. The only data we have are extrapolated from international studies. Both in relation to our selection results and in relation to the findings from the AMK it will be interesting to make a comparison to actual numbers. More in general a Dutch incidence study is necessary to emphasize the need for preventive actions in the Netherlands.

Based on the findings from the AMK, however small in number, the conclusion at this point in time should be that the instrument designed for the selection of families at risk shows promise. Future research should focus at the determination of validity of this instrument by comparison to other parameters. Also, future research could entail experimenting with the threshold to 'at-risk' status in order to enhance the correct classification rate of the instrument. To improve knowledge on the incidence of individual risk factors, screening by means of our selection questionnaire could be applied on a national level. Regarding the implementation of the intervention program it would be interesting to experiment with the duration of the program as well as a more flexible division of the home visits to be provided. As we found in chapter 7 there is a relationship between the number of risk factors and the amount of time spent per family. Possibly a more flexible or lengthy program in certain families would have generated more substantial effects in a larger group of participants. Although families refusing participation in the OKé program are similar to those that did participate when comparing their risk factors, more reports were made to the AMK about these families (see chapter 8). Therefore, in case of implementation in daily practice we would advice that more efforts are undertaken to involve these families in the intervention. Furthermore, national implementation would help to reduce drop out from the program due to families moving to other parts of the country.

This study has generated an enormous amount of data. Analysis thereof has in part been presented in chapters 7 and 8 but there is more to investigate, particularly

related to subgroups of participants. In spite of the fact that further investigations cannot be added to this thesis, we recommend they are executed and published as the data from this study are at this point unique in the Netherlands and should be researched to their full extent. Finally it is highly recommended that the sample of this study is followed during childhood and adolescence. An endurance or possibly even increase of the effects found during the first two years would add substantial information that the program may lead to long-term improvement.

Was this intervention effective? The answer to this question depends on our definition as well as our expectations. If we define effectiveness in terms of impact on family life, family well-being and parental competence, and ask this question to the parents that were visited, the answer would be a rather unambiguous 'yes'. As was discussed in chapter 7 parents were highly satisfied about the program and a majority had experienced it as meaningful. There is however more to the question of effectiveness. We can safely say that it is unrealistic to expect that child maltreatment will never take place in any of the families visited. So what should the 'success rate' be in order to call this program effective? From an ethical stance we could argue that improving the fate of just one child should be worth the effort since it is our moral and judicial obligation to prevent child maltreatment, as was discussed in chapters 1 and 2. From a practical stance we should ask if the intervention is worth its costs. The following simplified model could answer this question. We assume a crude estimate of €1,000.- as a price tag for selection and 1.5 years of intervention per family, including costs for the 5 families that were not selected in the process of finding this family. Meerding (2005) found that the annual costs of child maltreatment approach one billion euros in the Netherlands, based on findings over 2003 ([39]). In 2003 there were a total of 3,783,000 children between the ages of 0 and 18 years in the Netherlands ([13]). Supposing that 17% of these children are at risk, costs could be apportioned over this percentage, resulting in an amount of €1,500.- per child at risk, per year. This means that every single successful intervention will produce a total profit of €26,000.- once the child has reached the age of 18 (the annual costs of €1,500.- per child times 18, minus the costs of the intervention). Within this model the intervention could be provided to 26 children so long as in one of them maltreatment is avoided, without any financial loss. In other words, the intervention could be provided at break-even with a 'success rate' of 1:26, that is 3.8%.

Of course this model is simplified, it disregards the possibility of unjust 'at-risk' classification, it does not take into account the possibility of increasing effects after completion of the intervention and it assumes the possibility of predicting total success in prevention. At this point in time we can only conclude that our intervention has caused a certain amount of improvement in a proportion of families (up to 55% depending on the construct at hand). We can further conclude that effects of the intervention increase over time in a majority of the constructs evaluated. And finally we can conclude that after two years families at risk, regardless of receiving an intervention, can not (yet) be compared to a 'normal' population on variables such as family burden, social support or the potential for future maltreatment. With these conclusions we assume that, though these families still have a long road ahead of them, some foundation for future success has been established. As the children in these families grow older the certainty of success will increase, but never to 100%.

A substantial proportion of families receiving home visits has improved on a number of variables, in several variables this proportion is significantly larger than it would have been without the intervention (see chapter 8). The fact that the effects of our intervention are small should not be surprising as similar small findings are reported in a number of meta-reviews ([24; 28; 37]) and according to Guterman (1999) smaller effect sizes are typical for samples selected on psychosocial criteria ([29]). Also, "effect sizes for prevention programmes tend to be smaller than those of treatment, largely because prevention applies the same strategies to a population group that might or might not be at risk for a later mental health problem. However, from a public health perspective the prevention strategy can be cost-effective, as a small effect size in a large number of people can lead to a greater population gain than a large effect size in a small number of people" ([30]). With the significant amount of successful early referrals to psychological support comes the possibility of sustained or even increased improvement through the intervention. Pending future findings we feel that further implementation of this program is justified, especially when the recommended research is conducted to refine the methods developed in project OKé.

Child maltreatment is a serious problem with very serious consequences. Through the ratification of the Convention for the Rights of the Child the Netherlands have

made a commitment to protect all children from any form of child maltreatment. This commitment should be honored through all types of prevention, primary, secondary and tertiary. The primary impetus still seems to be on tertiary prevention, in spite the statement by Cohn and Daro (1987): "the results of a decade of evaluative research on treatment programs suggest that putting all resources into intervention after the fact does not make sense" ([16, p440]). Leventhal (1996) was very adamant when he stated "we do know how to prevent abuse and neglect" ([35, p647]). The times for saying 'we *do not* know how to prevent child maltreatment' are over in the Netherlands. Of course we can not be as adamant as Leventhal, but we do have a first general idea of a primary preventive intervention that does result in improvement in families at risk for maltreatment. Now is the time to start building on this idea, to refine and improve this intervention and to implement it into daily practice.

5 References

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