The more the better

Adherence to programme elements of Families First in the Netherlands reduces the risk of out-of-home placement

Harm Damen

Pactum / Praktikon, Radboud University, the Netherlands

Jan W. Veerman

Behavioural Science Institute, Radboud University, the Netherlands

Corresponding author's address: Pactum / Praktikon, Radboud University, c/o Harm Damen, MSc, research associate, PO Box 6909, 6503 GK Nijmegen, the Netherlands. E-mail address: h.damen@acsw.ru.nl

Abstract

In this study of Families First (FF) we examined the extent to which practitioners adhere to the FF model, and whether this adherence leads to better prevention of out-of-home placement (OHP) of children. We analysed data of 4.493 families who received the regular variant of FF, and of 972 families who received the variant for mildly mentally retarded children, and checked whether the treatment met predetermined quality-of-care aspects. Ten of these aspects represent programme elements of FF, two pertain to reaching the target group and preventing out-of-home placement. Results show that, in general, both variants of FF reached the target group (94%), that in many cases out-of-home placement could be avoided (88%), and that practitioners' adherence to the ten programme elements was high (86%). The results support the adherence hypothesis for both FF variants: more adherence to the model increases the chances of preventing out-of-home placement. Moreover, for FF-regular it appears that a group of potentially effective programme elements only starts contributing to the prevention of OHP if there is compliance with four effective elements. Implications of the results are discussed and a research agenda is suggested for future research on the relationship between adherence and outcomes of FF.

Keywords: Families First, family preservation, programme elements, adherence, out-ofhome placement

Introduction

Families First (FF) is an exponent of the many forms of Intensive Family Treatment that arose in the Netherlands during the mid-1980s (Veerman, Janssen, & Delicat, 2005). In those days there was a strong tendency within the Dutch child welfare system to develop programmes intended to prevent out-of-home placement (OHP) of children by strengthening the family system. Criticism of residential treatment was growing and outpatient services appeared to be unable to offer adequate help for multi-problem families. In 1984, the Ministry of Welfare, Health and Cultural Affairs advocated the shortest possible, most focused service, which should be offered within the home environment (Smit, Knorth, & Klomp, 1997). These developments run parallel with developments that took place somewhat earlier in the United States (Scannapieco, 1994; Lindsley, Martin, & Doh, 2002) and other countries in the Western world. The consensus then was that placements should be avoided whenever possible, not only because the costs of residential care were substantial, but also because there was a growing awareness, partly under the influence of scolars such as John Bowlby and Mary Ainsworth, that breaking the child's bonds with its primary caregiver and other family members would do more harm than good (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1979).

Families First (FF) is an intensive family preservation service based on the American Homebuilders Model (Kinney, Haapala, & Booth, 1991), and adapted to the Dutch situation (Spanjaard & Berger, 1994; Spanjaard & Haspels, 2005). The short programme (4-6 weeks) is meant for families in crisis and is explicitly aimed at preventing place-

ment of children out of home. It focuses on enhancing child and family competence and uses treatment techniques based on social learning theory, crisis intervention theory, and systems theory. FF was originally developed for families with children between 0-18 years with a normal IQ (FF-regular), but soon after the programme was introduced in the Netherlands, FF was also applied to families with mildly mentally retarded children (FF-mmr). The principles and techniques are the same for both variants of FF. However, in the case of FF-mmr family workers adapt their communication and instruction to the cognitive level of the family members. For instance, they provide more structure, set goals in smaller steps, explain certain things more often, use more visualisations, et cetera. From FF's launch in 1994 until 2011 both variants of the programme were offered at 25 locations in the Netherlands, and more than 18,000 children from almost 13,500 families have been engaged (Veerman, 2015). In 2014 FF was still being conducted at 15 sites in the Netherlands.

Over the years, considerable research has been conducted on the effects of interventions such as FF, which are aimed at family preservation. In the meta-analyses of family preservation studies by Dagenais, Bégin, Boucard and Fortin (2004; 16 studies) and those by Al, Stams, Bek, Damen, Asscher and Van der Laan (2012; 20 studies) mean effect sizes were small and not significant, which led to the conclusion that these programmes were generally not effective in preventing out-of-home placement, although both analyses found positive effects on family functioning. A review by Lindsley et al. (2002) largely confirmed the effects of such programmes on out-of-home placement. An analysis of the Washington State Institute for Public Policy (WSIPP; Lee, Amos, & Miller, 2008) summarized the outcomes of 26 programmes on child abuse and neglect, out-of-home placement, placement permanency or placement stability. Of the twelve programmes with figures on out-ofhome placement six showed statistically significant positive outcomes, two had negative outcomes, and four programmes had no effects. In particular, programmes based on the Homebuilders Model appeared to be effective. In another WSIPP-report, Miller (2006) showed that treatment adherence to the Homebuilders Model (four programmes) led to fewer placements and less child abuse (medium effect size). Moreover, programmes that did not adhere to this model produced no significant effects (14 programmes). Nelson Walters, Schweitzer, Blythe and Pecora (2009) looked specifically at studies into the effect of programmes based on the Homebuilders Model. They located nine studies published after 1996 that covered four programmes. Of these nine studies, one had a large effect, two a medium effect, and the other six a small effect on preventing outof-home placement. Taken together, the findings, in the words of Nelson et al. (2009, p. 31), are "cautiously promising for (...) programs that are delivered with fidelity to the Homebuilders model."

In the Netherlands too, FF has been the subject of scientific research. A number of studies have shown that out-of-home placement is prevented in about 75% of children until at least one year after completion of FF. Moreover, behaviour problems of children and parental stress were statistically significant reduced, with effect sizes (Cohen's *d*) between 0.50 and 0.80 (Damen & Veerman, 2009; Veerman, 2003; Veerman, De Kemp, Ten Brink, Slot, & Scholte, 2003). However, despite these medium-effect sizes, behavioural problems of children and

parenting stress after FF often remained moderate to severe. Accordingly, continued treatment was certainly indicated.

An important limitation in the Dutch studies is the absence of control groups. As a result, evidence of the effectiveness of FF is at best indicative. This suggests that randomized controlled studies should be conducted. However, there are many practical, ethical, and methodological objections to carrying out these kinds of studies in practice. These make RCTs difficult to conduct as intended, which undermines the strengths of this design, i.e. internal validity and statistical power to detect significant changes (James, Asscher, Deković, Van der Laan, & Stams, 2013; Lipsey & Cordray, 2000). Jacobs (2003) maintained that experimental designs are not feasible to use with the vast majority of child and family programmes, and therefore we should be satisfied with less rigorous research designs that are 'good enough.'

In his 'Confirmatory Program Evaluation' model, Reynolds (2004) put forward a number of criteria to strengthen causal inference in these 'good enough' designs, one of which is the gradient (dose-response) criterion. According to this criterion causal inference is more warranted if a monotonic relationship exists between programme exposure and programme outcome. Programme exposure is measured mostly with the number of days or sessions attended or the number of contact hours. In the present study, we will elaborate the dose-response criterion to look for further evidence of FF in the Netherlands. Accordingly, we conceptualize 'dosage' as the extent to which professionals who apply FF adhere to the so-called quality of care aspects of FF, established in 2001. These were meant to specify criteria for the proper implementation and delivery of FF in the Netherlands. Compliance with these aspects was thought to be essential to reach the desired outcomes, particularly the prevention of out-of-home placement, which actually was one of the aspects. Other aspects included duration, intensity, and supervision, among others (all the aspects are more fully described in the next section). Most of these aspects refer to what Lee et al. (2014) would call programme elements: "... aspects of the program design or service delivery system that might impact results (e.g., 24/7 on-call support, access to flexible funding). These program elements describe the structure and resources of the program" (Lee et al., 2014, p. 247). Programme elements must be distinguished from practice elements: "... distinct techniques delivered by the interventionists to promote positive outcomes (e.g., modeling, social skills training)" (Lee et al., 2014, p. 247). The quality of care aspects are partly the same as those of Miller (2006) in her WSSPI-report, but they are more specific. However, we will test the same hypothesis, namely, that greater adherence to the FF programme elements will reduce the risk of out-of-home placement immediately after FF. Therefore, our research questions are: How strong is adherence to the FF programme elements? And does a monotonic relationship exist between adherence to programme elements and the risk of out-ofhome placement?

Method

Participants

Our study uses information about quality of care collected between 2003-2010 from 5,465 families treated at one of the 25

(former) FF-locations in the Netherlands. These families constitute 75% of the total number of 7,280 families that received FF in the given period. Of the treated families 25% (n=1,815) could not be included in our study. This is not because information was missing, but because relevant data were only available on a higher level (location level instead of family level). Although we cannot statistically test whether there are differences between the group families that are (n=5,465) and are not (n=1,815) involved in our study, the two groups are probably very similar. The individual group scores on two main study variables (reaching the target population and preventing out-of-home placement) were close to each other. Of the 5,465 families, 4,493 (82%) received the regular variant of FF (FF-regular). The other 972 families (18%) received the variant for mild mentally retarded children, FF-mmr (IQ 50-85). Due to the design of the original quality of care study (Veerman & Damen, 2005), we have no further details on these families.

Instrument

Information for the present study was extracted from the *Dutch Quality of Care System for FF* (QCS-FF) that was designed to gain insight into the quality of implementation and delivery of FF in the Netherlands (Veerman & Damen, 2005). This quality of care is defined by the principles of the underlying Homebuilders Model and the Dutch Competency model (Kinney et al., 1991; Spanjaard & Haspels, 2005). Based on these two pillars, and after two years of piloting, in 2003 thirteen quality-of-care aspects were formulated and operationalized in measurable criteria (see Table 1). After each individual treatment the FF worker, who is trained to carry out FF, records whether a relevant aspect is met (score '1') or not (score '0'). The information is systematically collected in the QCS-FF database and reported twice a year to all agencies that deliver FF. Such feedback has enabled agencies to improve the quality of delivering FF, if necessary. Unfortunately, no research has been done on the validity and reliability of the QCS-FF as measurement tool. In the present study, we used data of 12 of the 13 aspects of the QCS-FF (see Table 1). The aspect Follow-up services is excluded because it is related to the period after FF, and is only relevant if any follow-up service is given. Of the 12 aspects, one refers to reaching the target population (aspect 1), and another to preventing OHP (aspect 12). The other 10 aspects (2 to 11) pertain to adherence to FF program elements.

	Criterion	Operationalization
1	Urgency	The family is (1) in an acute crisis whereby (2) there is a direct threat of OHP of one or more children.
2	Quick Start	Within 24 hours after acceptance by FF, the first face-to-face contact between an FF worker and a member/s of the family should take place.
3	Goal Setting	On the first, second, or third day after the first face-to-face contact, goals must be established together with at least one family member.
4	Intensity	There should be a minimum of seven hours per week care during face- to-face contacts.
5	Availability	A third part of the face-to-face contacts with the family is out-of-office time.
6	Specificity	At least half of the techniques used are specific.
7	Midterm Evaluation	At the latest, on day 16, the FF worker and family should evaluate goals formulated on day three, and formulate new goals, if necessary.
8	Duration	FF is finished. The plan should be conformed with within 31 days.
9	Goal Evaluation	At the end of FF, goals that were established on day three and at the mid-term evaluation are evaluated by the FF worker and all family members involved.
10	Supervision	The FF team leader has individual supervision with the FF worker about the pending family at least once a week.
11	Involvement	The referral agency is present on at least two occasions during treatment.
12	Living Situation	At the end of treatment the child remains living with (one of) the parents, without plans for OHP.

Table 1. Quality of Care aspects of FF and their operationalization in measurable criteria

Note. With all aspects a score of 1 (criterion met) or 0 (criterion not met) could be given. Aspect 1 refers to reaching the target group, aspect 12 to the risk of out-of-home placement (OHP). The aspects 2 to 11 inclusive refer to programme elements. A summation of the scores on these aspects is an index of adherence to programme elements (range 0-10).

The score for all 12 aspects is '0' (criterion not met) or '1' (criterion met). The scores on the ten quality aspects of adherence are calculated both separately and jointly. The separate score of an aspect is 0 or 1, the joint score is the sum score on the ten aspects for every treated family. The sum of the scores can range from '0' (zero out of ten aspects are met) to '10' (all ten aspects are met).

Ten of twelve aspects are based on factual data such as the number of hours per week support was provided in face-to-face contacts, or the number of days between the start and end of treatment. This factual information was extracted from the registration system used in each agency. The score on two aspects ('Urgency' and 'Specificity') was based on the estimates of professionals. The scores on 'Urgency' of the problems were derived from a joint assessment of the referral agency and care provider prior to the start of FF. 'Specificity' involves an assessment of the family worker himself; at least half of the techniques used with a particular family must be specific to meet the criterion. These specific techniques are described in detail in the FF-Guide for family workers and discussed and practiced in obligatory training and subsequent supervision (Spanjaard & Haspels, 2005).

Data analysis

For the data analysis we used descriptive and inferential statistics. The analysis of the quality of care of FF over the years (reaching the target population, adherence to programme elements, and preventing OHP) was based on frequency distributions and average scores calculated for both the entire period and per year. Logistic regression analysis was used in three steps to test the effect of adherence to programme elements on preventing OHP. Because we wanted to determine whether FF is effective for families for which FF is intended, in these regression analyses we included only families that, according to the established criterion, belonged to the target population. In the *Appendix* more details will be given regarding the regression analyses.

Results

Descriptive data

Table 2 gives an overview of the extent to which FF reaches its target population and the extent to which OHP is prevented. At the start of FF, 93% of the families that applied for FF satisfied the key selection criteria (i.e., n=5,096 of the n=5,465 families were in an acute crisis, with OHP threatening one or more children). For FF-regular, 94% of the target population was reached versus 90% for FF-mmr, a statistically significant difference. At the end of the intervention, OHP of one or more of the referred children had been prevented in 4,814 out of 5.464 families (FF-total: 88%). This means the child continued to reside with a parent without plans for OHP. This percentage was virtually the same for FF-regular (88%; n=3,958 of n=4,493 families) and FF-mmr (89%: n=865 of n=72 families).

Adherence

Table 2 also shows the extent to which there is an adherence to the FF-programme elements (based on the number of aspects). The adherence for FF-total was 86%, which means that, on average, 8.6 out of ten treatment aspects were met. The adherence for FF-regular (average 86%) and FF-mmr (85%) was comparable and did not differ statistically significant. If we look at adherence per aspect, we see that the aspect Availability (68%) was least frequently met, and that the aspect Supervision (97%) was most frequently met. This applies to the FF-total and to FF-regular and FF-mmr separately. The aspect Availability is being

		Total		Regular			Mmr			Sig.1
	n	yes	%	n	yes	%	n	yes	%	
Target population										
Number of families meeting the aspect Urgency	5,465	5,096	93	4,493	4218	94	972	878	90	***
Out-of-home placement										
Number of families in which the referred child lives at home at the end of treatment	5,465	4,814	88	4,493	3958	88	972	865	88	
Adherence (average)										
Average number of aspects (% of 10) that are met per family ²	5,464	-	86	4,493	-	86	972	-	85	
Adherence to individual aspects										
Quick Start	5,464	4,874	89	4,493	4020	90	971	854	88	
Goal Setting	5,457	5,197	95	4,488	4281	95	969	916	95	
Intensity	5,456	4,089	75	4,491	3341	74	965	748	78	*
Availability	5,465	3,692	68	4,493	3039	68	972	653	67	
Specificity	5,291	4,737	90	4,384	3933	90	907	804	89	
Midterm Evaluation	5,445	4,663	86	4,479	3863	86	966	800	83	**
Duration	5,462	4,770	87	4,492	3948	88	970	822	85	**
Goal Evaluation	5,451	4,800	88	4,483	3946	88	968	854	88	
Supervision	5,462	5,273	97	4,490	4323	96	972	950	98	*
Involvement	5,460	4,697	86	4,490	3835	85	970	862	89	**

 Table 2.
 Target population, adherence and prevention of OHP between 2003-2010

Note. ¹Differences in percentages between FF-regular and FF-mmr are tested with Fisher's-Exact tests; the difference between the average scores for FF-regular and FF-mmr are tested with t-tests (^{***}p < 0.001; ^{**}p < 0.01; ^{*}p < 0.05). ² The standard deviations associated with the averages scores are around 15 (for FF-total, FF-regular, and FF-mmr).

	Coefficients Model 1A Total n = 4,899		Proba Mode	bility el 1B
			Regular n = 4,097	Mmr n = 802
	В	S.E.	%	%
Constant	-1.09	0.82		
Adherence				
(Reference: 1 aspect is met)			25%	23%
2 aspects are met	1.33	1.06	56%	54%
3 aspects are met	1.64	0.95	63%	61%
4 aspects are met	1.38	0.87	57%	55%
5 aspects are met	1.92*	0.85	70%	71%
6 aspects are met	2.06*	0.83	73%	71%
7 aspects are met	2.58**	0.83	82%	80%
8 aspects are met	2.85***	0.82	85%	84%
9 aspects are met	3.43***	0.82	91%	90%
10 aspects are met	3.68***	0.83	93%	92%
Adherence * Mmr	0.00	0.00		
Mmr	-0.10	0.02		
Nagelkerker R ²	0.09			

Table 3.	Adherence	(number	of aspects)	and	preventing	OHP
	,	(0.0000000	0	0.0.0.0.00	U · · · ·

Note. For families that belong to the target population, and without missing values on the model variables. The results are based on logistic regression analyses. Significant differences are indicated (***p < 0.001; **p < 0.01; *p < 0.05).

met if at least one third of the face-to-face contacts with the family is outside office hours. The aspect Supervision is being met if once a week the team leader has an individual supervision session with the family worker about the pending family. FF-regular and FF-mmr differed statistically significant on five aspects. On three of these aspects, namely Intensity (78% versus 74%), Supervision (98% versus 96%), and Involvement referral agency (89% versus 85%) the score was higher for FF-mmr. On two aspects, namely Midterm Evaluation (86% vs. 83%) and Duration (88% vs. 85%), the score for FF-regular was higher.

Adherence and preventing OHP

Table 3 shows the effect of adherence on preventing OHP, with regard to the number of treatment aspects. This was determined with logistic regression analyses on the basis of the 5,096 families that belong to the target population (see Model 1 in the Appendix), reduced by 197 families with missing information on one or more of the included variables (total n=4,899).

Model 1A in Table 3 presents the results of FF-total. In Model 1B a comparison is made between FF-regular and FF-mmr. The results in Table 3 show that the probabili-



Figure 1. Adherence (number of aspects) and preventing OHP for families that belong to the target population (for FF-regular, n = 4,097 and FF-mmr, n = 802)

.....

ty of preventing OHP increased statistically significant when five of more of the ten aspects of adherence were met, whatever these aspects were. The results for Model 1B indicate that FF-regular and FF-mmr were comparable; the effect for both FF-mmr as for the moderator (adherence * FF-mmr) was not significant. In the column 'probability (model)' the results are converted into separate probabilities from 0% to 100%. If we put these percentages for FF-regular and FF-mmr behind each other, two nearly linear lines appear showing that the probability of preventing OHP increases as more aspects are met (Figure 1). For FF-regular, the probability of preventing OHP ranges from 25% (if one of the ten treatment aspects are met) to 93% (if all ten aspects are met), while the probability for FF-mmr ranges from 23% up to 92%.

Table 4 describes the influence of adherence on preventing OHP with respect to the ten individual quality aspects (see Model 2 in the Appendix). With four of the ten single aspects, the probability of preventing OHP is statistically significant: Specificity, Midterm Evaluation, Duration, and Goal Evaluation. The impact is greatest for Goal evaluation (Exp (B) = 5.31)¹ and the smallest for Specificity (Exp (B) = 1.49)². What stands out is that not all significant single effects are positive. The probability of preventing OHP, in fact, takes off statistically significant as the aspect Intensity is met (Exp (B) = 1.54-¹)³. Intensity means a minimum of seven hours of assistance is provided per week in face-to-face contacts. A comparison between FF-regular and FF-mmr shows that this negative impact of Intensity only

- 1 If the aspect Goal Evaluation is met, the odds ratio between preventing and not preventing OHP increases by 431% ([5.31 - 1] * 100%).
- 2 If the aspect Specificity is met, the odds ratio between preventing and not preventing OHP increases by 49% ([1.49 - 1] * 100%).
- 3 If the aspect Intensity is met, the odds ratio between preventing and not preventing OHP decreases by 35% ([1.54⁻¹ - 1] * 100%).

	Total (n = 4,899)		Reg (n = 4	ular 1,097)	Mmr (n = 802)		
	Exp(B)	Exp(B) WALD		WALD	Exp(B)	WALD	
Quick Start	1.08	0.30	1.03	0.02	1.28	0.56	
Goal Setting	1.37-1	2.43	1.54-1	3.69	1.44	0.61	
Intensity	1.54-1***	12.96	1.69-1***	15.51	1.05	0.03	
Availability	1.19	2.87	1.12	0.98	1.44	2.37	
Specificity	1.49**	7.98	1.51**	6.96	1.34	0.70	
Midterm Evaluation	2.27***	47.23	2.33***	40.18	1.98*	6.14	
Duration	1.46**	8.66	1.51**	8.50	1.23	0.42	
Goal Evaluation	5.31***	203.28	5.47***	176.18	4.59***	26.26	
Supervision	1.02	0.01	1.14	0.29	2.37-1	0.96	
Involvement	1.06	0.19	1.11	0.54	1.29-1	0.37	
Chi ²	420 (df = 1	0; sig: 0.00)	375 (df = 1	0; sig: 0.00)	56 (df = 10); sig: 0.00)	

Table 4. Adherence to individual aspects and preventing OHP

Note. For families that belong to the target population. The results are based on logistic regression analyses. If there are significant differences, this is indicated ($^{***}p < 0.001$; $^{**}p < 0.01$; $^{**}p < 0.05$).

applies for FF-regular. FF-regular and FFmmr also differ in the kind of treatment aspects with a positive influence: FF-regular shares with FF-total the same four aspects that are significant predictors of OHP. Two aspects predict OHP for FF-mmr; they are Midterm Evaluation and Goal Evaluation.

To better understand the relationship between the number and type of individual programme elements preventing out-ofhome placement, new regression models were drawn up and tested on the basis of the results from Table 4 (see Model 3 in the Appendix). We constructed a group of 'effective elements' and a group of 'potential effective elements'. For FF-regular, the group of effective elements is formed by the four aspects of Table 4 with a significant positive impact, namely Specificity, Midterm Evaluation, Duration, and Goal Evaluation. Compliance with the effective elements ranges from '0' (zero aspects are met) up to '4' (all four aspects are met). The group of potential effective elements is formed by the four aspects with a non-significant impact, namely Quick Start, Availability, Supervision, and Involvement, with scores ranging from '0' (zero aspects are met) to '4' (all four aspects are met).

For FF-mmr the group of effective elements consists of the two aspects, Midterm Evaluation and Goal Evaluation, with a minimum score of '0' (zero aspects are met) and a maximum of '2' (both aspects are met). The group potential effective elements is formed by six aspects, namely Quick Start, Goal Setting, Intensity, Availability, Specificity, and Duration, with scores ranging from '0' (zero aspects are met) to '6' (all six aspects are met).

To determine the extent to which the probability of preventing OHP is influenced by the number and/or type of aspects, we take into account not only the group of effective and potential effective elements, but we also look at the effect of the potential effective elements if the aspects in the group as a whole were met (code '1': all four aspects for FF-regular and two for FF-mmr) or none is met (code '0'). In this analysis meeting all the effective elements (or not) serves as a moderator effect. In the analyses we controlled for the negative influence of the aspects Goal Setting and Intensity (only with FF-regular, see Table 4). These aspects with a negative impact function in the present analysis as control variables and therefore were not included in Table 5 and the text below.

Table 5 shows that for FF-regular the probability of preventing OHP increases, as more aspects of the group effective elements are met (Specificity, Midterm Evaluation, Duration, and Goal Evaluation). Also, it appears that the group potential effective elements only starts contributing to the prevention of OHP if there is compliance with all four effective elements. On the condition of this

Table 5.	Adherence	(kind and	number	of asp	pects) ar	nd preventi	ng OHP
					,		

	В	S.E .
FF-regular (n = 4,097) ¹		
Constant	-0.12	0.29
Adherence		
extent to which the effective elements are met	0.68***	0.08
extent to which the potential effective elements are met	0.06	0.07
all effective elements * extent to which potential effective elements are met	0.16***	0.05
Nagelkerker pseudo R ²	0.15	
FF-mmr (n = 802) ²		
Constant	-0.32	0.76
Adherence		
extent to which the effective elements are met	1.12**	0.37
extent to which the potential effective elements are met	0.25*	0.11
all effective elements * extent to which potential effective elements are met	-0.01	0.10
Nagelkerker pseudo R ²	0.12	

Note. For families that belong to the target population. The results are based on logistic regression analyses. **p < 0,001; *p < 0.01; *p < 0.05. The models are checked for the two groups with aspects of Table 4, which have a negative impact. The calculated coefficients for these two groups are not displayed.

¹ The four effective elements for *FF*-regular are Specificity, Midterm Evaluation, Duration, and Goal Evaluation (see Table 4: the aspects with significant positive effects). The four *potential* effective elements are Quick Start, Availability, Supervision, and Involvement referral agency (the aspects from Table 4 with a non-significant positive influence).

 2 The two effective elements for *FF*-mmr are Midterm Evaluation and Goal Evaluation. The six *potential* effective elements are Quick Start, Goal Orientation, Intensity, Availability, Specificity, and Duration.



Figure 2. FF-regular: Interaction effect (not) meeting all four effective elements and preventing OHP (n = 4,097) - for families that belong to the target population, controlled for the other model variables.

The four *effective* elements for *FF*-regular are Specificity, Between Evaluation, Duration, and Goal Evaluation (see Table 4: aspects with significant positive effects). The four *potential effective* elements are Quick Start, Availability, Supervision, and Involvement (the aspects from Table 4 with a non-significant positive effect).

compliance, the probability of preventing out-of-home placement increases if more of the (four) potential effective elements of FF-regular are applied (Quick Start, Availability, Supervision, and Involvement). Figure 2 shows this result for FF-regular.

Table 5 also shows that for FF-mmr the probability of preventing OHP increases if more of the effective elements are met (for FF-mmr, Midterm Evaluation and Goal Evaluation). In contrast to FF-regular, however, regardless of whether the two effective elements are met, the likelihood of preventing OHP becomes larger if more potential effective elements are met.

Discussion

The intended target group of FF is reached very well – 93% of the total group of FF-families met the criterion for the aspect Urgency, which means that the family is in an acute crisis and there is a direct threat of OHP for one or more children. Moreover, upon completion of FF in a majority of the families (88%) out-of-home placement of the referred child was avoided, which means that, at the end of treatment, the child remained living with (one of) the parents without plans for OHP. With regard to reaching the target group, the difference between FF-regular and FF-mmr was statistically significant; regarding OHP,

there was no significant difference. However, on both aspects the results for FF-regular and FF-mmr were positive and close to each other. Furthermore, professionals who deliver FF do adhere well to the ten aspects that constitute the programme elements of FF. On average, in treating an individual family 8.6 (86%) of the ten adherence aspects are met, and both FF-variants do not differ statistically significant in this respect. If we look at the ten individual aspects, we see that Availability (68%) was least frequently met, and Supervision (97%) most frequently. This applies to FF-total, and to FF-regular and FF-mmr separately. FF-regular and FFmmr differed statistically significant on five other aspects. On three of these aspects, namely Intensity, Supervision, and Involvement referral agency, FF-mmr scored higher. On two aspects, namely Midterm Evaluation and Duration, the score for FF-regular was higher.

The hypothesis that more adherence to programme elements of FF will lead to better results was supported both for FF-regular and FF-mmr. The probability of preventing OHP increased statistically significant when five of more of the ten aspects of adherence were met, whatever these aspects were. Here FF-regular and FF-mmr showed no difference. The probability of preventing OHP ranged from 25% (if one of the ten treatment aspects was met) to 93% (if all ten aspects were met) for FF-regular, and from 23% up to 92% for FF-mmr. If we put all percentages behind each other, a nearly linear line appears showing that the probability of preventing OHP increases as more aspects are met. The hypothesized monotonic dose-response relationship seems to exist.

Regarding the individual aspects, some interesting findings emerged that were

different for FF-regular and FF-mmr. For FF-regular Duration, Specificity, Midterm Evaluation, and Goal Evaluation turned out to be significant predictors of OHP; for FF-mmr only Midterm Evaluation and Goal Evaluation statistically significant predicted OHP. Meeting these effective aspects is related to a greater chance of still living at home at the end of treatment. Moreover, some of the aspects seemed to have a negative sign; for instance, Goal Setting and Intensity in the case of FF-regular, and Specificity, and Involvement in the case of FF-mmr. However, only Intensity appeared statistically significant; when this aspect is met, the chances of OPH are greater. Our results also add an interesting nuance, which is different for FF-regular and FFmmr. For the four potentially effective aspects Quick Start, Availability, Supervision, and Involvement to have a positive impact on the prevention of placement with FF-regular, first the criteria of the group of the four significant effective aspects must be fully met. With FF-mmr such a pattern did not appear; regardless of whether the two significant effective aspects are met, the likelihood of preventing OHP becomes larger if more potential effective elements are met.

Our results regarding the adherence hypothesis are echoed in similar studies. A meta-analysis of family preservation programmes by Miller (2006) shows that treatment adherence to the Homebuilders Model (which also lies at the basis of FF) leads to fewer placements and less child abuse. Little (1997) investigated whether three essential characteristics of a Family Preservation Service in the State of Illinois in the US - like Families First, focused on families in crisis - were related to outcomes such as out-of-home placement of children, a recurrence of child abuse, and closure of the case by a child welfare agency. Little observed, among other things, that the effect of adherence on these aspects was somewhat visible in the long term (one year after treatment) and that, as in our study, adherence to the aspect of 'Intensity' in the short term (three and six months after the end of treatment) was related to an increase in child abuse and placement (hence, the 'wrong' direction!). Furthermore, Perepletchikova and Kazdin (2005) mentioned a number of studies in the field of adult psychotherapy, school interventions, family interventions and prevention in which the adherence hypothesis completely, partially or not at all was supported.

Our findings raise some important questions. It appears, as in the previously mentioned study by Little (1997), that intensity (a minimum of seven hours per week provided in face-to-face contacts), against expectations, adversely affects out-of-home placement. How can we interpret this? Is it perhaps because in some families the number or duration of the face-to-face contacts increases as soon as it becomes clear that outplacement probably cannot be avoided ('but nevertheless, we try everything we can to avoid this'), whereas in other families the number or duration of face-to-face contacts decreases as soon it becomes clear placement almost certainly can be prevented ('we go in the right direction and it makes sense to spend my time with other clients who need it more')? Furthermore. 'Midterm Evaluation' and 'Goal Evaluation' have a relatively large impact on preventing placement, both with FF-regular and FFmmr. Does timely evaluation during treatment provide for clarity and/or agreement between a professional and the members of the family on the changes needed to prevent placement? Or does timely evaluation lead to adjustment of the course of treatment in the desired direction? Research on the agreement between informants on ratings of children's problem behaviour suggests that the former may be the case (De Los Reves, 2011). Research on routine outcome monitoring suggests that the latter may also be the case (Lambert, 2010). Moreover, midterm evaluation and goal evaluation might be examples of so-called common factors, which, in addition to specific factors (methods and techniques used), extra-therapeutic factors (client and environmental characteristics), and placebo effects (hope and expectation), could impact treatment outcomes (Lambert, 1992; Barth et al., 2012). The fact that, in the case of FF regular, both elements function as a kind of condition that must be met before other elements can exert a positive effect is in line with the suggestion that specific factors (for crisis intervention programs, for instance 'Quick start', and 'Availability') build on common factors (Barth et al., 2012; Stevens et al., 2001). Answers to these questions need more research.

Strengths and limitations

A strong aspect of the current study is that the data came from almost all locations that offered FF in the Netherlands between 2003 and 2010. This makes the results representative (not dependent on a random location) and enhances the validity of the results. Because of the extensive study group of nearly 5,500 families, the analyses also have large power, that is, the chances that the observed effects are real, are considerable. Additionally, the large sample is unique for practice-based research. Also, the concept of dose-response seems useful in the context of treatment adherence, in the sense that 'more is better.' This might be a fruitful extension of the use of this concept beyond only the amount of time or sessions spent in the programme. With the formulation of Reynolds (2004) in mind, we can conclude that the dose-response relation in the present study suggests that more evidence of a causal influence of the FF programme on OHP is warranted. However, we cannot maintain that a causal effect of the FF programme on OHP is 'proven', therefore stronger experimental designs with control groups are needed. This is one of the limitations of this study.

Obviously, the study design also has several other limitations. The first is the unknown validity and reliability of the QCS-FF as a measuring tool. The plus point of this system is that it provides FF with a quick and easy way to collect dichotomous information (0 or 1) on adherence to well-defined and theoretically relevant quality aspects, which gives a quick scan of the quality of implementation and delivery of the intervention. The question is: To what extent does the instrument measure what it is intended to measure, and is this measurement reliable? There are still no data on these topics. Another question that needs an answer is: To what extent does the use of self-report influences the results? The QCS-FF is completed by the family worker at the end of treatment who uses it to judge the suitability of his or her own actions. It might be that family workers who have succeeded in preventing out-of-home placement rate the programme elements more positively than family workers who have not succeeded in achieving this goal. Furthermore, the design of the QCS-FF did not allow for the collection of other important information. This could include general characteristics of the family (such as family composition and the presence of biological parents), of the referred child (age, gender) or caregiver (age, gender), and more specific information about the problems targeted by the intervention (such as family functioning, problems of the child), and the kind of assistance that may follow after FF, and the living situation of the child in the months following FF.

Implications

In particular, it would be useful not only to look at the programme elements but also to look further at the practice elements: the specific techniques family workers use to change inadequate parenting, family functioning, and child problem behaviour. These are described in the Dutch manual of FF (Spanjaard & Haspels, 2005), which is used to train family workers how to conduct these techniques. In the early days (the 1990s) of FF in the Netherlands, the delivery of these techniques was also systematically measured (Ten Brink, Veerman, De Kemp, & Berger, 2004). However, with the advent of the present QCS-FF, this measurement was no longer required. The absence of such information means that the present study above all provides initial answers to the question of the effective elements of FF and raises new questions about the appropriate target group for FF, how effective FF is, and for how long it should be applied.

Further insight into these matters will lead to more knowledge about the relationship between treatment adherence to programme and practice elements and the prevention of out-of-home placement within FF, and to the practical application of this knowledge. In the meantime, the results of this study confirm that family workers of FF in the Netherlands are on track to provide quality services. The study also confirms the usefulness of measuring this quality and discussing the results of these measures with care providers.

Acknowledgements

This article is an adaptation and extension of a previously published article in Dutch: Damen, H., & Veerman, J. W. (2013). Voorkomen van uithuisplaatsing bij Families First door behandelingsgetrouw handelen. *Kind en Adolescent*, 34(3), 147-164.

References

- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). Patterns of attachment. A psychological study of the Strange Situation. Hillsdale, NJ: Lawrence Erlbaum.
- Al, C. M. W., Stams, G. J. J. M., Bek, M. S., Damen, E. M., Asscher, J. J., & Van der Laan, P. H. (2012). A meta-analysis of intensive family preservation programs. Placement prevention and improvement of family functioning. *Children and Youth Services Review*, 34(8), 1472-1479. doi: 10.1016/j.childyouth.2012.04.002.
- Barth, R. P., Lee, B. R., Lindsey, M. A., Collins, K. S., Strieder, F., Chorpita, B. F., Becker, K. D., & Sparks, J. A. (2012). Evidence-based practice at a crossroads: The timely emergence of common elements and common factors. *Research on Social Work Practice*, 22(1), 108-119. doi: 10.1177/1049731511408440.
- Bowlby, J. (1979). The making and breaking of affectional bonds. London: Tavistock.
- Dagenais, C., Bégin, J., Bouchard, C., & Fortin, F. (2004). Impact of intensive family support programs: A synthesis of evaluation studies. *Children and Youth Services Review*, 26(3), 249-263. doi: 10.1016/j.childyouth.2004.01.015.
- Damen, H., & Veerman, J. W. (2009). Effectiviteitsonderzoek Families First. De relatie tussen uitvoering en uitkomsten tot een jaar na afsluiting van de behandeling [The effectiveness study on Families First. The relation between programme implementation and outcomes until a year after ending the treatment]. Nijmegen, the Netherlands: Praktikon.
- De Los Reyes, A. (2011). Introduction to the Special Section: More than measurement error: Discovering meaning behind informant discrepancies in clinical assessments of children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, 40(1), 1-9. doi: 10.1080/15374416.2011.533405.
- Jacobs, F. H. (2003). Child and family program evaluation. Learning to enjoy complexity. *Applied Developmental Science*, 7(2), 62-75. doi: 10.1207/S1532480XADS0702_3.
- James, C., Asscher, J. J., Deković, M., Van der Laan, P. H., & Stams, G. J. J. M. (2013). Endeavors in an experimental study on the effectiveness of an aftercare program in the Netherlands. *Criminal Justice Policy Review*, 24(1), 123-138. doi: 10.1177/0887403412442891.
- Kinney, J., Haapala, D., & Booth, C. (1991). *Keeping families together. The Homebuilders model*. New York, NY: Aldine De Gruyter.

- Lambert, M. J. (2010). Prevention of treatment failure. The use of measuring, monitoring and feedback in clinical practice. Washington, DC: American Psychological Association.
- Lee, B. R., Ebesutani, C., Kolivoski, K. M., Becker, K. D., Lindsey, M. A., Brandt, N. E., ... & Barth, R. P. (2014). Program and practice elements for placement prevention: A review of interventions and their effectiveness in promoting home-based care. *American Journal of Orthopsychiatry*, 84(3), 244-256. doi: 10.1037/h0099811.
- Lee, S., Aos, S., & Miller, M. (2008). Evidence-based programs to prevent children from entering and remaining in the Child welfare system. Benefits and costs for Washington. Olympia: Washington State Institute for Public Policy, Document No. 08-07-3901. Also retrievable by: http://www. wsipp.wa.gov/rptfiles/08-07-3901.pdf
- Lindsey, D., Martin, S., & Doh, J. (2002). The failure of intensive casework services to reduce foster care placements. An examination of Family Preservation studies. *Children and Youth Services Review*, 24(9/10), 743-775. doi: 10.1016/S0190-7409(02)00227-X.
- Little, J. H. (1997). Effects of duration, intensity, and breadth of Family Preservation Services. A new analysis of data from the Illinois Family First experiment. *Children and Youth Services Review*, 19 (1/2), 17-39. doi: 10.1016/S0190-7409(97)00004-2.
- Lipsey, M. W., & Cordray, D. S. (2000). Evaluation methods for social intervention. Annual Review of Psychology, 51, 345-375.
- Miller, M. (2006). Intensive Family Preservation programs. Program fidelity influences effectiveness

 Revised. Olympia: Washington State Institute for Public Policy, Document No. 06-02-3901.
 Also retrievable by: http://www.wsipp.wa.gov/pub.asp?docid=06-02-3901
- Nelson, K., Walters, B., Schweitzer, D., Blythe, B. J., & Pecora, P. J. (2009). A ten-year review of family preservation research. Building the evidence base. Retrieved at Augustus 12, 2012, at http://www.casey.org/Resources/Publications/

pdf/TenYearReviewFamilyPreservation_ES.pdf.

- Perepletchikova, F., & Kazdin, A. E. (2005). Treatment integrity and therapeutic change. Issues and research recommendations. *Clinical Psychology: Science and Practice*, 12(4), 365-383. doi: 10.1093/clipsy/bpi045.
- Reynolds, A. J. (2004). Research on early childhood interventions in the confirmatory mode. *Children and Youth Services Review*, 26(1), 15-38. doi: 10.1016/j.childyouth.2003.11.001.
- Scannapieco, M. (1994). Home-based services program: Effectiveness with at risk families. *Children and Youth Services Review, 16*(5/6), 363-377. doi:10.1016/0190-7409(94)90027-2.
- Smit, M., Knorth, E. J., & Klomp, M. (1997). Child and youth care in the Netherlands: Services and developments. *Child and Youth Care Forum*, *26*(5), 311-321. doi: 10.1007/BF02589438.
- Spanjaard, H., & Berger, M. (1994). Families First. Hulp aan gezinnen ter voorkoming van uithuisplaatsing van kinderen [Families First. Helping families to prevent out-of-home placement of children]. Jeugd en Samenleving, 12, 720-729.
- Spanjaard, H., & Haspels, M. (2005). *Families First. Handleiding voor gezinsmedewerkers* [Families First. Manual for family workers] (6th edition). Utrecht/Amsterdam: NIZW/SWP Publishers.
- Stevens, S. E., Hynan, M. T., & Allen, M. (2000). A meta-analysis of common factor and specific treatment effects across the outcome domains of the phase model of psychotherapy. *Clinical Psychology: Science and Practice*, 7(3), 273-290. doi: 10.1093/clipsy.7.3.273.

- Ten Brink, L. T., Veerman, J. W., De Kemp, R. A. T, & Berger, M. A. (2004). Implemented as intended? Recording family workers activities in a Families First program. *Child Welfare*, 83(3), 197-214.
- Veerman, J. W. (2003). Families First 1994-2000. Lessen uit onderzoek [Families First 1994-2000. Lessons from research]. Tijdschrift voor Orthopedagogiek, 42(7/8), 342-358.
- Veerman, J. W. (2015). *Numbers of clients of Families First in the Netherlands* 1994-2014. Nijmegen, the Netherlands: Praktikon.
- Veerman, J. W., & Damen, H. (2005). Kwaliteitstoetsing *Families First*: Het goede goed doen en dat ook laten zien [Quality assessment of Families First: Doing the right thing in the right way and showing it too]. *Tijdschrift voor Orthopedagogiek*, 44(5), 195-205.
- Veerman, J. W., De Kemp, R. A. T., Ten Brink, L. T., Slot, N. W., & Scholte, E. M. (2003). The implementation of Families First in the Netherlands. A one year follow-up. *Child Psychiatry* and Human Development, 33(3), 227-244. doi: 10.1023/A:1021456630670.
- Veerman, J. W., Janssens, J. M. A. M., & Delicat, J. W. (2005). Effectiviteit van intensieve pedagogische thuishulp: Een meta-analyse [Effectiveness of intensive family treatment: A meta-analysis]. *Pedagogiek*, 25(3), 176-196.

Appendix

Logistic regression analyses in three steps

In the first step, the effect of the number of aspects of adherence on preventing OHP was examined for FF-total and for FF-regular versus FF-mmr, in three steps and three models.

Model 1

 $log[p_{*ohp}/(1-p_{=ohp})] = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_9 x_9 + \beta_{10} y_1 + \beta_{11} y_1 y_2 + \epsilon$

where $p_{\pm ohp}$, $p_{\pm ohp}$, β_0 , x_1 to x_9 have the same meaning as before; additionally: y_1 = regular (0) or mmr (1), $y_1 y_2$ = interaction between whether or not mmr, and degree of adherence (sum score with a minimum of 0 [0 out of 10 aspects are met] and a maximum of 10 [all 10 aspects are met]): ε = error term.

Then, from Model 1 a probability model was drawn up:

$$p_{*ohp} = \frac{e \left(\hat{B}_{0} + \hat{B}_{1} x_{1} + \hat{B}_{2} x_{2} + \dots + \hat{B}_{9} x_{9} + \hat{B}_{10} y_{1} + \hat{B}_{11} y_{1} y_{2} \right)}{e \left(\hat{B}_{0} + \hat{B}_{1} x_{1} + \hat{B}_{2} x_{2} + \dots + \hat{B}_{9} x_{9} + \hat{B}_{10} y_{1} + \hat{B}_{11} y_{1} y_{2} \right) + 1 * 100\%}$$

By calculating the probability model for the situation where zero of ten aspects of adherence are met, through to the situation in which all ten aspects are met, we can see whether the likelihood of preventing OHP increases if more aspects are met. In the second step, we tested the effect of the individual aspects of adherence on preventing OHP (Model 2) successively for FF-total, FF-regular, and FF-mmr.

Model 2

 $log[p_{_{\pm ohp}}/(1-p_{_{\pm ohp}})] = f_0 + f_1x_1 + f_2x_2 + \dots + f_9x_9 + \varepsilon$

where, p_{*ohp} : probability of preventing OHP of the referred child, p_{*ohp} : probability of OHP, β_0 = constant, x_1 to x_9 (binary 0 and 1, criterion not met or met respectively for x_1 = quick start, x_2 = goal setting, x_3 = intensity, x_4 = availability, x_5 = specificity, x_6 = midterm evaluation, x_7 = duration, x_8 = goal evaluation, x_9 = supervision, x_{10} = involvement), ε = error term.

In the third step we simultaneously examined the effect of the number of aspects and individual aspects on preventing OHP. To do this, together with the results from Model 2, we computed new variables based on the statistical significance of an aspect (significant or not) and the direction (positive or negative) of the estimated scores of the aspects in preventing OHP. When aspects had a significant positive contribution, we put them together in the group *Effective elements*. Aspects with a non-significant contribution constituted the group *Potential effective elements*. We also constructed a moderator variable, which reflects the interaction between completely meeting all the effective elements and the number of the individual potential effective elements that are met. In the event there were aspects with a (significant) negative impact, these aspects were included in the model as control variables; see Model 3 which was estimated separately for FF-regular and FF-mmr.

Model 3

 $\log[p_{\pm ohp}/(1-p_{\pm ohp})] = f_0 + f_1 x_1 + f_2 x_2 + f_3 x_3 + f_4 x_4 + f_4 y_1 x_2 + \epsilon$

where p_{*uhp} : probability of preventing OHP of the referred child, p_{*ohp} : probability of OHP, β_0 =constant, x_1 = extent of compliance with the aspects belonging to the effective elements, x_2 = extent of compliance with the aspects belonging to the potential effective elements, x_3 = extent of compliance with significant negative loading aspects from Model 2, x_4 = extent of compliance with the not-significant negative loading aspects from Model 2, y_1x_2 = interaction between meeting all aspects belonging to the effective elements (binary: 0 not met, and 1 met) and the extent to which there is compliance with the aspects belonging to the potential effective elements: ε = error term.