Feeding practices in the Netherlands during the first four months of life. A study of the motives for discontinuing breastfeeding and for the subsequent feeding method selected

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Citation for published version (APA):
Bulk-Bunschoten, A. M. W. (2002). Feeding practices in the Netherlands during the first four months of life. A study of the motives for discontinuing breastfeeding and for the subsequent feeding method selected

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CHAPTER 7.

Changes in formula feeding during the first four months
Introduction

Breast milk has well-known advantages for an infant. However, more than 20% of the infants in The Netherlands get no breast milk at all and many more get it for a short period only (1). For these infants many types and brands of formulae are available. Therefore detailed knowledge about the use and effects of these formulae is needed in well-baby clinics.

In this chapter additional data of the study relating to formula feeding are given and clarified. The aim was to answer the following questions:

- what kinds of formula are used during the first four months?
- are there differences between the infant-related reasons for stopping breastfeeding and the infant-related reasons for switching from one formula to another?
- are there differences between the reported benefit of replacing breastfeeding by formula feeding and the reported benefit of switching from one formula to another?

Methods

The method used in the study is described in chapter 2.

The feeding methods were classified as follows:

- Breastfeeding was divided into exclusive breastfeeding (EBF) and the combination of breastfeeding with formula or solid food (CBF). Breastfeeding means all feeding methods of which breastfeeding forms a part. (BF=EBF + CBF)
- Bottle feeding was divided into normal or regular formulae, formulae adapted for premature babies, soy-based formulae, hypoallergenic formulae, formulae with special adaptations and a remaining group consisting of a goat milk based formula and of home-made cow’s milk/water mixtures. Formulae with special adaptations were subdivided into formulae adapted to counter vomiting, to counter the infant’s feeling of hunger, low lactose formulae and a sour milk-based formula.
- A group of non-classifiable formulae and solid food.

Results

The feeding method

Exclusive breastfeeding was given by 70.5% of mothers on the day of birth and 28% of these mothers continued with exclusive breastfeeding for four months. Breastfeeding practices are described in detail in chapter 3.

This formula, Farilon, is no more available.
29.5% of the infants were formula fed on the day of birth; of these 6.5% were given a combination of formula and breast milk. The percentage of formula feeding rose to 74% at the age of 3 months. At four months 79% of the infants were formula fed and of these 12% received formula in combination with breast milk. Figure 7.1 shows the subdivision of the different kinds of formulae over the first four months. Soy-based formulae, formulae for premature babies or babies small for their gestational age, home-made cow’s milk/water mixtures or solid food were hardly used (all less than 2%) and are not shown in the figure. Nearly all mothers who started with formula on the day of birth used a regular formula. Nearly all the mothers who combined formula with breast milk also used a regular formula.

A hypoallergenic formula was hardly ever used on the day of birth. Within the first four months, however, 5% of the infants used or had used a hypoallergenic formula for one or more weeks. Furthermore it was notable that there was an almost linear increase with age in the use of formulae with specific adaptations. During the first four months a quarter of all infants used one of these specially adapted formulae for some time. Of these infants 2 out of 3 at the age of four months used a formula with an adaptation to counter vomiting and 1 out of 3 used a formula with an adaptation to prolong the period of satisfaction.

**Changes in feeding method**

In all, 5687 changes related to breastfeeding and to formula were reported during the first four months. Only 30% of the infants included had no change in feeding practice. There was no change in 43% of the formula fed infants (n=448) at the day of birth. 12% of the CBF fed infants at the day of birth continued this method of feeding during the first 4 months. The feeding method of more than half of the infants was changed once, the feeding method of the others was changed several times. The average number of changes for infants whose feeding method was changed was 1.8. The maximum number of changes was 8.

Switches between brands of regular formulae accounted for 16% of all changes (910 switches in 2196 infants).

**Reasons for changing**

There was a relationship between the method of feeding and the infants’ problems. Figure 7.2 shows the relationship between the infant-related reasons for changing the feeding method and the feeding method used at that particular moment. The figure relates only to the first changes and not to second or later changes. It was remarkable that irrespective of the existing feeding practice a mother’s perception that her infant was hungry was the reason mentioned most often, whereas insufficient weight gain was the reason for changing in only a minority of infants.
Figure 7.1 The types of formulae used during the first 4 months of life in relation to the percentage of infants using them. Infants fed with both breast milk and formula used nearly all a regular formula.

Figure 7.2 Infant-related reasons for the first change in the method of feeding. The figure shows that each feeding method (exclusive breastfeeding, the combination of breast milk and formula or formula) is accompanied by particular infant-related problems. In all feeding methods the mother’s feeling that her baby was hungry was the reason mentioned most often to change.
Figure 7.3  The decline in exclusive breastfeeding in all infants who started with this feeding method on the day of birth compared with the decline in exclusive breastfeeding in infants who started with this feeding method as well and who will change of feeding method because of crying, colic and constipation in the period to come. Infants whose feeding method will be changed because of crying, colic or constipation during the first 4 months started on the day of birth with exclusive breastfeeding in 71, 63 and 57% respectively.

The effect that some infant-related reasons had on the course of exclusive breastfeeding is shown in figure 7.3. During the first four months the decline in exclusive breastfeeding in all infants who started with this feeding method on the day of birth was compared with the decline in exclusive breastfeeding in infants whose feeding method was to change in the period to come by reason of crying, colic and constipation. Of the infants who will change the feeding method because of crying, colic or constipation in 71, 63 and 57% respectively started with exclusive breastfeeding on the day of birth.

Crying
In 40 % of the cases crying as the reason for changing was combined with another reason, namely colic or the mother’s perception that her infant was hungry. The changes in feeding method, with and without breastfeeding, due to crying were diverse. In descending order of frequency the changes involved the abandonment
of breastfeeding, switching to a formula with added carob bean gum and switching
to a hypoallergenic formula.

In 25% of the cases the switch to a hypoallergenic formula was based solely
on crying. Crying was also the most frequent reason mentioned for stopping a
hypoallergenic formula, the next most important reason being constipation and the
high price of the hypoallergenic formulae.

**Constipation**
This reason for changing the feeding method, occurring more often in bottle
fed infants than in breastfed infants, has been discussed in chapter 4.

**Vomiting**
If an infant shows a good increase in weight but regularly regurgitates small
quantities of food, there is no medical reason for abandoning breastfeeding or for
switching to a specially adapted formula. However, in 9% of the infants vomiting
was given as the reason for changing the feeding method during the first 4 months.
The first reason mentioned for changing the feeding due to vomiting was more
marked in formula fed than in breastfed infants. Second or later changes in feeding
method due to vomiting occurred more in infants who were fed with both breast milk
and formula. Overfeeding may play a role in the vomiting. In this study it was not
possible to separate infants who suffered from excessive vomiting from those who
vomited due to overfeeding.

**The age of the infants when the feeding method was changed**
Most changes occurred in weeks 3, 4 and 8. After week 8 changes became
less frequent. The study yielded information about the relationship between age and
problems of the infants: changes due to the mother’s perception that her infant was
hungry and due to crying occurred most frequently in week 2/3. Thereafter the
number of changes based on these reasons decreased. Changes in feeding method
by reason of vomiting or constipation were most frequently reported between weeks
3 and 9. Week 8 was the main week when breastfeeding was stopped for the
mother-related reason, ‘return to work’.

It was worth noting that many of the reported changes in feeding practices
were already made prior to the babies’ first visit to a well-baby clinic.

**The initiative for changing a feeding practice**
In 78% of the changes the initiator or adviser was known. In 57% parents changed the feeding method without advice. The percentage was even higher if
the mother was breastfeeding (chapter 3). Well-baby clinic doctors and nurses advised a change of feeding practice in 33% of the cases. Their advice generally related to changes in formula, but even in these cases as many mothers changed without advice as well. General practitioners and paediatricians advised a change in 7% of the cases. Midwives and maternity nurses rarely gave advice.

It was remarkable that 31% of switches between brands of regular formulae had been advised by well-baby clinic workers.

The outcome of the change in feeding practice

70% of the parents reported that a change was accompanied by an improvement in the infant-related problem that had led to the change. This figure was consistent with respect to nearly all the reasons mentioned and to all feeding methods. 25% of the parents reported no improvement in the existing problem following the change in feeding method and 5% reported that the problem grew worse following the change. Nevertheless, a second change within three weeks of a recorded improvement occurred in 5% of the infants. Crying was the most frequent reason mentioned for a second or third change.

The improvements that occurred after second or later changes diminished with the number of changes, whereas the percentage of existing problems that worsened remained approximately the same (5-6%). After the fourth change 60% of mothers reported that the change had had a beneficial effect on the existing problem.

If the decision to change a feeding practice was made on the mother’s initiative an improvement was reported more frequently than if the change was advised by a doctor or a nurse of a well-baby clinic.

Discussion and conclusion

Infant-related reasons for changing the feeding method occurred both in infants being breastfed and in infants receiving formulae. It was remarkable that after abandoning breastfeeding some mothers still engaged in multiple switches of formulae. The principal reason of this cases was crying. It was unexpected that crying as the reason for changing the feeding method reached a peak in the third week. Although crying is frequent during the first 3 months the peak for excessive crying (frequency and duration) is reported in week 6 (2,3,4,5,6,7,8). In the literature crying and colic are generally lumped together as one medical identity. In this study the combination of crying and colic as a reason for changing the feeding method was present in only 4% of the infants.

Action taken by parents because of excessive crying was also studied in the youth health care report of 1997/8 (9). Changing the method of feeding was the
action 35-55% of the parents took as a result of the crying behaviour of their infant. Another action reported in that study was that mothers sought the advice of well-baby clinic workers (22%), general practitioners (5%) and paediatricians (2%). In the majority of cases a consultation resulted in a change in the feeding method.

Crying was also the principle reason for starting a hypoallergenic formula. The effectiveness of this kind of formulae on crying is not always clear; other methods for stopping excessive crying in the first few months of life are also of uncertain value (10,11,2,14,15,16,17,18).

The fact that in many cases crying was the only reason given for switching to a hypo-antigenic formula meant that the standard criteria for diagnosing cow's milk allergy in well-baby clinics were followed less frequently than generally believed. The protocol could have been followed for up to 20% of the infants who started to use a hypoallergenic formula. The failure to follow the protocol was due either to a change resulting from a single cause or due to advice given by persons others than doctors or it was due simply to neglect of the diagnostic schedule. The reason, 'following the standard criteria of diagnosing cow's milk allergy' was noted in only a few cases.

The preventive use of hypo-antigenic formulae was low in view of the small percentage of these formulae used on the day of birth. The situation is different in Belgium and France where a frequent reason for stopping breastfeeding is the commonly held view that hypo-antigenic formulae are better for the infant than breastfeeding (19).

Another remark concerns the frequency of switches between brands of regular formulae (16% of all switches). These switches can not be harmful, because the differences between these formulae are too small. The switches are unlikely to be useful, other than in a psychological sense. There have been very few studies about switches in formulae. Two Belgian studies (1991-1993 and in 1995) revealed an increase in switches between formulae (20,21). In the last Belgian study 11% of all switches concerned switches between brands of regular formulae. As in the LOVZ study switches in formulae were diverse and covered the whole range of available kinds and brands of formulae. In the Belgian study, but not in the LOVZ study, the infant-related reasons for changing the feeding method were restricted mainly to bottle fed infants, in spite of the fact that problems, such as crying or colic occur with all feeding methods (20). A possible explanation is that these problems in breastfed infants are regarded as normal in Belgium, whereas in The Netherlands these reasons may trigger the abandonment of breastfeeding.
Better knowledge about the 'normal problems' that occur with regard to the feeding of infants during the first four months of life may help to prevent both the abandonment of breastfeeding and switches of formulae.

References