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A Controlled Trial of the Father's Role in Breastfeeding Promotion

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ABSTRACT. *Objective.* To investigate whether supporting fathers to recognize the relevance of their role in the success of breastfeeding and teaching them how to prevent and to manage the most common lactation problems would result in more women breastfeeding.

Methods. A controlled trial, in which the participating fathers were allocated in 2-month blocks to a child care training session, was conducted of 280 mothers considering breastfeeding and their 280 partners at a university obstetric department in Naples, Italy. Support and advice about breastfeeding was provided to all of the mothers. Among the fathers of the intervention group, the training session included the management of breastfeeding; among those of the control group, it did not. Primary outcome was the prevalence of full breastfeeding at 6 months. Secondary outcomes were the proportion of women who perceived their milk to be insufficient, who stopped breastfeeding because of problems, and who reported to have received help in breastfeeding management by their partners.

Results The prevalence of full breastfeeding at 6 months was 25% (35 of 140) in the intervention group and 15% (21 of 140) in the control group and that of any breastfeeding at 12 months was 19% (27) and 11% (16), respectively. Perceived milk insufficiency was significantly more frequent among the mothers of the control group (38 [27%] of 140 vs 12 [8.6%] of 140), as well as breastfeeding interruption because of problems with lactation (25 [18%] of 140 vs 6 [4%] of 140). Moreover, significantly more women in the intervention group reported receiving support and relevant help with infant feeding management from their partners (128 [91%] of 140 vs 48 [34%] of 140). Among the women who had reported difficulties with lactation in the intervention and control groups (96 [69%] and 89 [64%], respectively), the prevalence of full breastfeeding at 6 months was 24% and 4.5%, respectively.

Conclusions Teaching fathers how to prevent and to manage the most common lactation difficulties is associated with higher rates of full breastfeeding at 6 months. *Pediatrics* 2005;116:e494–e498. URL: www.pediatrics.org/cgi/doi/10.1542/peds.2005-0479; *breastfeeding, fathers, education, controlled trial.*

ABBREVIATION. WHO-UNICEF, World Health Organization–United Nations Children's Fund.

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Breastfeeding has significant advantages for children's and women's health, but its prevalence is still low in many industrialized countries.¹ How an infant is nourished is a complex and multifactorial decision. Various social, psychological, emotional, and environmental factors have an impact on whether an infant is breastfed or bottle-fed. Some barriers include the negative attitudes of women and their partners and family members, as well as health care professionals, toward breastfeeding, whereas the main reasons that women do not start or give up breastfeeding are reported to be poor family and social support, perceived milk insufficiency, breast problems, maternal or infant illness, and return to outside employment.² Several strategies have been used to promote breastfeeding, such as setting standards for maternity services^{3,4} (eg, the joint World Health Organization–United Nations Children's Fund [WHO-UNICEF] Baby Friendly Initiative), public education through media campaigns, and health professionals and peer-led initiatives to support individual mothers.^{5–9} Support from the infant's father through active participation in the breastfeeding decision, together with a positive attitude and knowledge about the benefits of breastfeeding, has been shown to have a strong influence on the initiation and duration of breastfeeding in observational studies,^{2,10} but scientific evidence is not available as to whether training fathers to manage the most common lactation difficulties can enhance breastfeeding rates. We conducted a controlled trial to test the hypothesis that teaching the fathers how to prevent and manage breastfeeding problems is associated with an increased duration of breastfeeding.

METHODS

This study was conducted at the Department of Obstetrics of the University of Naples. All mother and father pairs of healthy, term, normal birth weight infants who were born between October 1, 2002, and January 31, 2003, were enrolled; unmarried women, mothers who had decided to bottle feed, and parents whose infants were admitted to the ICU were excluded from the study. The protocol was approved by the hospital ethics committee. A trained interviewer (M.A.) administered a questionnaire to all of the mothers on the second day after birth; moreover, she provided and illustrated to them a leaflet about the benefits and the management of breastfeeding. The information collected included sociodemographic characteristics, previous breastfeeding history, smoking habits, employment, and feeding during hospital stay. The fathers of the newborn were allocated either to the intervention group or to the control group according to the date of birth of their infants: those whose infants were born in October and November were assigned to the intervention group, and those whose infants were born in December and January constituted the control group. The training session of the fathers of the intervention

group included the management of breastfeeding; that of the control group did not.

Intervention

The fathers of the intervention group were interviewed and offered a face-to-face, 40-minute session about infant feeding and the difficulties sometimes associated with breastfeeding, such as fear of milk insufficiency; transitional lactation crisis; return to outside employment; and problems such as breast engorgement, mastitis, sore and inverted nipples, and breast refusal. They were taught how problems with lactation can occur and how it is possible to prevent and manage them. Moreover, attention was paid to the concerns that a father might have in relation to breastfeeding, and the fathers were helped to recognize and accept their unique and vital role in the success of breastfeeding. The midwife who conducted the intervention (M.A.) was trained through the WHO-UNICEF 40-hour training course.¹¹ At the end of the session, a leaflet with the main points of the session was provided to the fathers. The main points addressed in the session are shown in Table 1.

The fathers of the control group were also offered a face-to-face 40-minute training session about child care, such as accident prevention and vaccination, but discussion was focused on the health benefits of breast milk rather than the management of breastfeeding. A leaflet with the main points of the session was also provided.

Sample Size, Assignment, and Masking

A previous study showed that in the Campania region, the prevalence of full breastfeeding at 6 months was 7%.¹² Assuming a 20% loss to follow-up, we calculated that we would require ~240 mother and father pairs to detect a statistically significant increase of 15% ($1 - \alpha = 95\%$, $1 - \beta = 80\%$) in the rate of full breastfeeding at 6 months.¹³ To avoid communication between study groups, which would be likely if people who were admitted to the same hospital unit were exposed to different messages at the same time, we did not randomize the participants as it usually is done,¹⁴ but we allocated the 2 study groups into 2 consecutive blocks of time, after having randomly paired the 2 study groups with the 2 blocks of time. Moreover, during the 4 study months, no modification in the care provided to the mothers and to the newborn was planned or implemented. The authors who interviewed the fathers of the intervention group (M.A.) and of the control group (P.C.) were unaware of the study hypothesis, and they were asked independently to cooperate in a parental education project. These authors played no part in assessing feeding outcome. The authors who interviewed the mothers at 6 and at 12 months (G.I.C. and S.D.) were blinded to the study hypothesis and to the allocation of the participants. The hospital ethical committee agreed that protocol did not require informed consent from the participants, as the intervention was considered as a routine change in service deliv-

TABLE 1. Main Points Discussed With the Fathers of the Intervention Group

1. Why "breast is best" for the mother and the infant
2. The special role of the father as a champion for the mother, the infant, and breastfeeding
3. The main concerns of the fathers about breastfeeding: feelings of inadequacy, jealousy, diminished relationship with the mate, feeling left out of feeding the infant
4. How breastfeeding works: good breastfeeding positioning, infant latching and suckling, frequency of feeding
5. How to reinforce the confidence of the mother in her ability to breastfeed, how to give practical help, and how to support and encourage her to go on with breastfeeding when she is tired
6. What to do if the mother is convinced that the milk is not sufficient: how to check urine output and weight gain to evaluate whether breast milk is sufficient and how to promote more frequent feeding
7. What to do when the infant refuses the breast
8. How to manage sore and inverted nipples, breast engorgement, and mastitis
9. How to express the milk because of return to work and how to store it

ery that was being assessed. Thus, the parents were unaware of the objectives and of the organization of the study.

Follow-up Evaluations and Outcome Measures

The mothers were interviewed by telephone at 6 and 12 months after birth using a questionnaire recommended by the WHO to obtain information on full (exclusive plus predominant) and complementary (any consumption of breast milk after the introduction of other fluids and solid foods) breastfeeding.¹⁵ The questionnaire investigated the type of feeding in the preceding 24 hours, the problems and the difficulties that the mothers had had with lactation, and the support with breastfeeding that they had received by family members and health professionals. The main outcome of the study was the prevalence of full breastfeeding at 6 months. Secondary outcomes were the prevalence of mothers who reported to have perceived that their milk was not sufficient, who stopped breastfeeding because of difficulties and problems, and who reported to have received relevant help with breastfeeding from their partners. Also the prevalence of any breastfeeding at 12 months was investigated.

Statistical Analysis

Comparison between groups was performed by means of the χ^2 test. The relative risk with 95% confidence intervals was used to compare the incidence of breastfeeding between the groups. Statistical analyses were performed with SPSS (release 11.5).

RESULTS

As a result of random assignment, the intervention group was paired with the first block of time and the control group with the second one. During the 2 time blocks, 194 and 191 normal birth weight infants were born, respectively. The first consecutive 140 families who met the recruitment criteria were enrolled during each block of time. All of the families who were enrolled agreed to participate in the interview and in the training session. None of the participants was lost to the follow-up both at 6 and at 12 months.

Characteristics of Study Groups

The study groups were similar in most respects, and also the frequency of perinatal hospital practices that are likely to influence breastfeeding, such as early mother–newborn contact and rooming-in, was identical between intervention and control groups (Table 2).

Breastfeeding Rates

The prevalence of full breastfeeding at 6 months was significantly higher among the mothers in the intervention group (35 [25%] of 140 vs 21 [15%] of 140; $P < .05$), whereas that of complementary breastfeeding was not different between the groups. The prevalence of any breastfeeding at 12 months was 27 (19%) and 16 (11%) in the intervention and in the control groups, respectively ($P = .09$; Table 3).

Problems and Difficulties With Breastfeeding

Respectively, 96 (69%) and 89 (64%) of the mothers reported problems and difficulties with lactation, but the type of these problems and the frequency of breastfeeding interruption were significantly different between the groups. Perceived milk insufficiency was significantly more frequent among the mothers of the control group (38 [27%] of 140 vs 12 [8.6%] of 140), as well as giving up breastfeeding because of problems with lactation (25 [18%] of 140 vs 6 [4%] of 140). Moreover, significantly more women in the

TABLE 2. Baseline Comparison of Intervention and Control Groups

Variable	Intervention Group (<i>n</i> = 140)	Control Group (<i>n</i> = 140)
Maternal age, y		
<20	6 (4)	4 (3)
20–35	118 (84)	116 (83)
>35	16 (11)	20 (14)
First pregnancy	64 (46)	62 (44)
Type of delivery		
Vaginal	64 (46)	59 (42)
Cesarean	76 (54)	81 (58)
Maternal education, y		
≤8	55 (39)	56 (40)
>8	85 (61)	84 (60)
Planned return to outside employment after childbirth	33 (24)	37 (26)
Maternal smoking		
Before pregnancy	49 (35)	46 (33)
During pregnancy	19 (14)	25 (18)
After birth	33 (24)	37 (26)
Father's education, y		
≤8	64 (46)	66 (47)
>8	76 (54)	73 (53)
Father's smoking	69 (49)	64 (46)
Previous children breastfed	66/76 (87)	62/78 (79)
Mothers breastfed during infancy	111 (79)	109 (78)
Fathers breastfed during infancy	103 (74)	94 (67)
Early (<2 h) mother–newborn contact after delivery	2 (1)	–
Rooming-in	140 (100)	140 (100)

Data are *n* (%).

TABLE 3. Prevalence of Breastfeeding at Discharge From the hospital, at 6 Months, and at 12 Months

	Intervention Group, <i>n</i> (<i>n</i> = 140)	Control Group, <i>n</i> (<i>n</i> = 140)	Relative Risk (95% CI)	<i>P</i>
At the discharge from the hospital				
Full	127 (91)	124 (88.6)	1.02 (0.9–1.1)	.7
Complementary	7 (5)	5 (3.6)	1.4 (0.46–4.3)	.8
Bottle	6 (4)	11 (7.8)	0.5 (0.2–1.4)	.3
At 6 mo				
Full	35 (25)	21 (15)	1.67 (1.02–2.71)	<.05
Complementary*	40 (33)	41 (34)	0.98 (0.68–1.39)	1.0
At 12 mo				
Complementary	27 (19)	16 (11)	1.69 (0.95–2.99)	.09

Data are *n* (%). CI indicates confidence interval.

* Not included were women who fully breastfed.

intervention group reported to have received support and relevant help with infant feeding from their partners (128 [91%] of 140 vs 48 [34%] of 140). Among the women in the intervention group who reported problems, the frequency of full breastfeeding at 6 months was 23 (24%) of 96 and was significantly higher compared with control group (4 [4.5%] of 89; $P < .001$; Table 4). Among the mothers who did not report problems with lactation, the rates of breastfeeding were not different in the 2 groups.

DISCUSSION

This study is the first controlled clinical trial showing that fathers play a significant role in supporting successful lactation and increasing breastfeeding rates. Observational data suggest that fathers are important in the maternal decision on how to feed the infant and that mothers choose to bottle feed or breastfeed for a shorter time when the father is not supporting breastfeeding.^{16–19} Moreover, supporting the father during breastfeeding may help to improve

the mother's satisfaction with breastfeeding, duration of breastfeeding, and adaptation of both parents to parenting.^{10,20–23} Despite these data, the fathers are poorly informed about the advantages of breastfeeding^{24,25} and may have many concerns that are poorly addressed and that can negatively influence initiation and duration rates of breastfeeding. These concerns include diminished sexual relationship, feeling left out of feeding the infant, losing the attention of their mate, and feelings of inadequacy and jealousy.¹⁰ At the present, antenatal and perinatal care does not usually include information and training of the fathers as a priority: the WHO-UNICEF Baby Friendly Hospital Initiative recommends professional and peer postnatal support for breastfeeding mothers but not for fathers²⁶; the American Academy of Pediatrics policy statement on breastfeeding and the use of breast milk clearly indicates the need to educate the fathers²⁷ but does not suggest what exactly needs to be done.

The aim of our study was not only to improve the

TABLE 4. Difficulties With Lactation and Support to Breastfeeding Referred by the Mothers at 6 Months

Difficulties/Problems	Intervention Group (n = 140)	Control Group (n = 140)	P
No problems referred	44 (31)	51 (36)	
Received help from their partner			
With home work	12 (27)	11 (22)	
With the care of the infant	40 (91)	43 (84)	
With breastfeeding management	36 (82)	18 (35)	<.001
Full breastfeeding at 6 mo	12 (27)	17 (33)	.7
Problems referred	96 (69)	89 (64)	
Type of difficulty/problem*			
Stress/tiredness	60 (62)	28 (31)	<.001
Perceived milk insufficiency	12 (12)	38 (43)	<.001
Illness of the infant	7 (7)	4 (4)	
Illness of the mother	3 (3)	4 (4)	
Breast problems	3 (3)	8 (9)	
Return to work	17 (18)	8 (9)	
Other	1 (1)	4 (4)	
Supplemented other foods because of such difficulties	10 (10)	29 (33)	<.001
Stopped breastfeeding because of such difficulties	6 (6)	25 (28)	<.001
Received help from their partner			
With home work	17 (18)	10 (11)	
With the care of the infant	82 (85)	70 (79)	
With breastfeeding management	92 (96)	30 (34)	<.001
Full breastfeeding at 6 mo	23 (24)	4 (4.5)	<.001

Data are n (%).

* Percentages are calculated inside each subgroup (problems/no problems). Some values in the Results and in the abstract are reported as percentages in the 2 groups (intervention/control).

knowledge about breastfeeding but mainly to support the fathers to recognize and accept their relevant role in the success of breastfeeding, to improve their capacity of empowering the self-confidence of the mother, and to support and encourage her to go on with breastfeeding, mainly when problems with lactation occur and can represent risk factors for breastfeeding interruption. The significant decrease of perceived milk insufficiency and of interruption of breastfeeding because of problems among the mothers of the intervention group of this study seems to support the efficacy of this approach. Moreover, teaching the fathers seems to represent a valid and cost-effective intervention^{21,23,24} when we consider that other educational interventions led by volunteer counselors and health professionals have shown a not yet well-established influence on breastfeeding rates.⁶⁻⁹ The advantages of intervention based on the fathers rather than on volunteers and health professionals can be represented by the emotional support and the continuity of care that the father can provide and by the fact that some women can be reluctant to ask for help from people who are not part of the family.⁶ The weaknesses of this study are represented by the limited numbers of participants enrolled, by the single-hospital setting, and by sequential rather than random allocation of the participants. However, we think that because the participants and the interviewers were genuinely blind to the study design, the method that we chose provided valid data. Furthermore, it should be noted that the rates of breastfeeding are higher in this study compared with other Italian data,^{4,9,28} even when women who were not considering breastfeeding were not included; thus, the reproducibility of our results in other, less favorable context needs to be investigated. The

strengths are represented by the fact that all consecutive participants with inclusion criteria in both groups were enrolled and agreed to participate in the study, by the complete follow-up of the study groups, and by the observation that the effect of the intervention occurred mainly among women who had problems, those who really needed help from their partners. Information provided to the fathers on how to prevent and manage lactation difficulties and how to support their partners seems to be a valid way to help women to breastfeed. Moreover, even though an economic evaluation of this intervention was not one of the objectives of this study, it should be noted that the 10% increase in full breastfeeding rates that result from such an intervention can reduce the health care cost of formula feeding,²⁹ and father's education and training should be recommended as the "11th step" for successful breastfeeding. Finally, to give responsibilities to the fathers from soon after birth and to ask their active cooperation to improve infant feeding could represent an effective way of enhancing parental relationships, bonding, and social skills and of preventing emotional deprivation and child abuse.³⁰ It would be of interest to use this simple intervention test in other populations to determine its degree of universality.

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