The maternal perception on paternal support: influence on the duration of breastfeeding

A percepção das mães sobre o apoio paterno: influência na duração do aleitamento materno

La percepción de las madres sobre el apoyo paterno: influencia en la duración de la lactancia materna

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ABSTRACT

Objective: A cohort prospective study of newborns in the city of Pelotas, Southern Brazil, between September 2002 and May 2003, which aims at evaluating the perception of mothers as to fatherly support and its influence in breastfeeding duration.

Methods: The initial population included 2,741 babies, and a random and representative sample of 30% was followed-up on the first, third, and sixth months, with a significance level of 95% and statistical power of 80% to detect a relative risk of 2.0. Univariate and multivariate analyses were applied. Variables with $p<0.05$ were considered as significantly associated with the outcome.

Results: In the first month, approximately 10% of infants were not breastfed. Low paternal schooling and lack of support during breastfeeding were associated with weaning in the first month. In the third month, a strong association between weaning and lack of paternal support was verified. The fact that the mother no longer lived with her partner and the number of years in school were also associated with the outcome. In the sixth month, no correlation was found between paternal variables and breastfeeding.

Conclusions: The present study could be useful as a reference to future public health policies as well as an incentive to insert the paternal figure in the prenatal, labor, and postdelivery care.

Key-words: father; breast feeding; epidemiology; weaning; infants.

RESUMO

Objetivo: Estudo de coorte prospectiva dos bebês nascidos na cidade de Pelotas entre setembro de 2002 e maio de 2003, com o objetivo de avaliar a percepção das mães quanto ao apoio paterno e sua influência na duração do aleitamento materno (AM).

Métodos: A população inicial do estudo foi de 2.741 bebês, sendo que uma amostra aleatória de 30% destes foi acompanhada no 1º, 3º e 6º meses, baseada em cálculo amostral com um nível de significância de 95% e poder estatístico de 80% para detectar risco relativo de 2,0. Foram realizadas análises univariada e multivariada, sendo que somente as variáveis com $p<0,05$ foram consideradas associadas ao desfecho de forma significante.

Resultados: Observou-se que no 1º mês aproximadamente 10% dos bebês não estavam em AM. A baixa escolaridade paterna e a falta de participação do pai na amamentação foram variáveis associadas ao desmame no 1º mês. No 3º mês, constatou-se forte associação entre o desmame e a falta de apoio paterno. O fato de a mãe não viver com o companheiro e a menor escolaridade paterna foram variáveis também associadas ao desfecho. Já no 6º mês, não foi encontrada associação entre variáveis paternas e AM.

Conclusões: Este estudo pode servir de subsídio para futuras políticas públicas em saúde, como também para in-

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Fonte financiadora: Universidade Católica de Pelotas
Conflito de interesse: nada a declarar

Recebido em: 18/10/2011
Aprovado em: 6/2/2012

centivo à inserção da figura paterna nas consultas pré-natais, na atenção ao parto e no puerpério.

Palavras-chave: pai; aleitamento materno; epidemiologia; desmame; lactentes.

RESUMEN

Objetivo: Estudio de cohorte prospectivo de los bebés nacidos en la ciudad de Pelotas (Rio Grande do Sul, Brasil), entre septiembre de 2002 y mayo de 2003, con el objetivo de evaluar la percepción de las madres respecto al apoyo paterno y su influencia en la duración de la lactancia materna (LM).

Métodos: La población inicial del estudio fue de 2.741 bebés, siendo acompañada en el primero, tercero y sexto meses una muestra aleatoria y representativa de 30% de éstos, basada en cálculo muestral, con un nivel de significancia de 95% y poder estadístico de 80%, para detectar riesgo relativo de 2,0. Se realizaron análisis uni y multivariados, siendo que solamente las variables con $p<0,05$ fueron consideradas asociadas al desfecho de modo estadísticamente significante.

Resultados: Se observó que, en el primer mes, un 10% de los bebés no estaban en LM. La baja escolaridad paterna y la falta de participación del padre en la amamantación fueron asociadas al destete en el primer mes. En el tercer mes, se constató fuerte asociación entre el destete y la falta de apoyo paterno. El hecho de que la madre no vive con el compañero y la menor escolaridad paterna fueron variables también asociadas al desenlace. Ya en el sexto mes, no se encontró asociación entre variables paternas y LM.

Conclusiones: Este estudio puede servir de subsidio para futuras políticas públicas en salud, como también para incentivo a la inserción de la figura paterna en las consultas prenatales, en la atención al parto y en el puerperio.

Palabras clave: padre; lactancia materna; epidemiología; destete; lactantes.

Introduction

Increasing breastfeeding (BF) duration has been a constant concern because of the large body of scientific evidence that supports its importance[1]. In Brazil, as well as all over the world, exclusive BF (EBF) rates and total BF duration are still beyond recommendations despite the increase in the last decades. Several factors have been associated with BF duration and exclusive BF, such as socioeconomic, demographic and cultural characteristics[2-5], but few studies have investigated the participation of fathers in infant care and feeding.

The father's knowledge about BF benefits, his support, understanding and encouragement in making decisions together with the mother may be relevant factors at the time when the mother offers milk to their infant. In a review study, Bar-Yam and Darby[6] found three positive aspects of the father's influence: the breastfeeding decision, assistance at first feeding, and duration of breastfeeding.

Similarly, Arora *et al*[7] demonstrated, in a qualitative study, that 80% of the mothers reported that the father's support results in encouragement for breastfeeding. In a randomized clinical study, Susin and Giugliani[8] found that 93.3% of the mothers interviewed would like to receive help from their partners during BF and that the inclusion of fathers in the intervention significantly reduced the risk of discontinuing EBF before six months of age.

The father's presence may be important for BF success, but few studies have been conducted to investigate it. This study evaluated the mother's perception of paternal support and participation and their effect on BF duration of infants born in the city of Pelotas, southern Brazil.

Method

This longitudinal prospective cohort study, conducted in the city of Pelotas, southern Brazil, was approved by the Ethics in Research Committee of Fundação de Apoio Universitário, and all mothers signed an informed consent term.

This study is part of a larger research project whose main purpose is to investigate BF rates and the factors involved in early weaning. Infants born from September 2002 to May 2003 and whose mother lived in the urban area of the city of Pelotas were included in the study if they had no serious contraindications to BF (such as severe malformation or mother with HIV infection). Sample size was calculated for a level of significance of 95%, statistical power of 80%, exposures ranging from 15 and 80%, estimated relative risk of 2.0, and an additional number of participants to compensate for possible losses and control for potentially confounding factors.

The study had two phases: perinatal screening, conducted in all maternity wards in the city of Pelotas to detect infants born during the study period; and follow-up of 30% of these infants, randomly selected, who were visited at home at one, three and six months after birth.

A standardized questionnaire was applied to all mothers to ensure consistent data collection. For the same purpose,

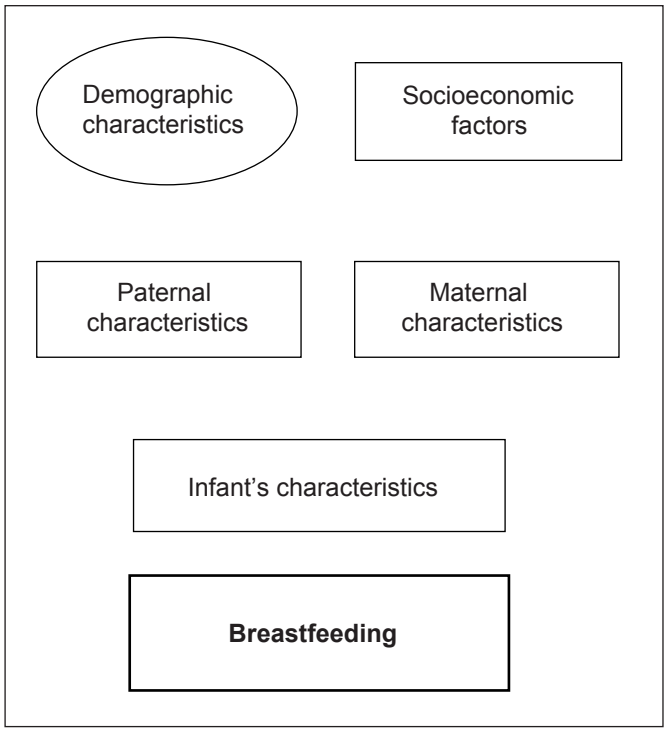

Figure 1 - Hierarchical analysis model

interviewers followed a manual, the team was trained, and the questionnaires were reviewed every week. Before the study, the questionnaires were tested in a pilot study conducted in the São Francisco de Paula University Hospital, in Pelotas, Brazil. To evaluate the quality of data collection and its reliability, a second, summarized questionnaire was applied to a randomly selected group of 10% of the sample, and the results were compared using the kappa coefficient (0.94) for analysis of agreement.

Data collected were double entered into a module of the Epi-Info 6.0 software and then transferred for statistical analysis using the following system: calculation of variable frequencies and bivariate analysis between exposure factor and outcome, between exposure factor and other variables, and between outcome and other variables using a chi-square test. Variables for which $p \leq 0.20$ were included in multivariate analysis, and logistic regression was used to evaluate potential confounding factors.

Logistic regression followed the previously created hierarchical model (Figure 1), which compared variables and identified possible confounding factors. The variables for which $p \leq 0.20$ continued in the model to evaluate these associations.

According to the hierarchical model, the first level included the demographic (age and parents' ethnicity) and socioeconomic (family income and parents' education) variables; the second, the variables that referred to paternal (father's participation in prenatal follow-up, father's knowledge about BF, and his participation in the introduction of new foods) and maternal (marital status, parity, work outside the home, smoking, number of prenatal visits, maternal opinion about father's support, maternal perception of father's support during gestation, and maternal perception of father's participation during BF); the third, the infant's characteristics (gestational age, birth weight and use of pacifier); and the fourth, BF outcomes. At the end of analyses, only the associations with $p \leq 0.05$ were classified as statistically significant.

The variables in the second level of the theoretical model were analyzed according to what the infant's mother had reported. Therefore, results reflected maternal perceptions, as the fathers were not interviewed. Moreover, the purpose of this study was to evaluate how mothers felt about the father's support and participation and how this perception affected their decisions about BF. The questions about maternal perception of the father's support were: "how did you perceive the father's support?"; "what does the father think about BF?"; "did the father receive information about BF?"; "did he participate in the decision about introducing other foods?"; if you had any problems in BF, what was the father's reaction?"; "what does your partner think about the fact that you are breastfeeding?"; and "when you are breastfeeding, does your husband/partner participate in it?".

The outcome was defined as BF in the first, third and sixth months of the infant's life. BF was defined according to the World Health Organization[9]: EBF is the consumption of maternal milk only by the infant, in addition to medications, vitamins and minerals, and BF, the consumption of maternal milk, as well as other foods and non-human milks.

Results

Of the 3449 infants born during the screening phase, 81% had mothers who lived in Pelotas. Of the 2799 Pelotas infants, 58 did not participate in the study: 10 were discharged early, 26 had mothers with HIV infection, and 22 mothers refused to participate in the study. Therefore, 2741 infants were included in the study. During the follow-up phase, a 30% random sample was selected, at a total of 973 infants. For the follow-up in the first month, 951 infants (2.3% loss) were visited; in the third month, 940 (3.4% loss); and in the sixth month, 931 (4.3% loss).

Table 1 - Social and demographic characteristics of the sample under study

Characteristics	n	%
Father's age[a]		
<20	61	6.3
20–29	452	46.4
30–34	181	18.6
≥35	279	28.7
Mother's age[a]		
<20	181	18.6
20–29	492	50.6
30–34	156	16.0
≥35	144	14.8
Father's ethnicity		
White	713	73.3
Not white	260	26.7
Mother's ethnicity		
White	713	73.3
Not white	260	26.7
Father's education[b]		
0–4	166	17.0
5–8	490	50.4
≥9	317	32.6
Mother's education[b]		
0–4	182	18.7
5–8	403	41.4
≥9	388	39.9
Household income		
<1,0	83	8.5
1,0–3,0	577	59.3
3,01–5,9	181	18.6
≥6,0	132	13.6
Prenatal visits		
0–5	201	20.7
≥6	772	79.3
Smoking during gestation		
Yes	248	25.5
No	725	74.5
Gestational age[d]		
<37	121	12.4
≥37	852	87.6

[a]age in years; [b]schooling years; [c] number of minimum wages; [d]weeks

In the study sample, 51.2% of the participants were boys, and 80% were white. Median birth weight was 3170 g; 8.2% had a low birth weight; and over half of the deliveries were vaginal (60.9%). Most mothers (83.8%) reported living with a partner or husband. In addition, 34.4% of the mothers worked outside the home, and 40.7% were primiparas. About one third of the infants (36.2%) were breastfed in the first hour of life.

Table 1 shows the sociodemographic characteristics of the sample. Most parents were younger than 30 years. Most fathers and mothers were white (73.3%). Half of the fathers and 41.4% of the mothers had five to eight years of schooling. Most families had an income of one to three minimum wages (59.3%). About 25.5% of the mothers smoked during pregnancy, and most had six or more prenatal visits (79.3%).

Less than half of the fathers (49.1%) was with their wives during prenatal visits, and only 34% of the mothers reported having received support from the fathers during gestation. Half of the fathers (51.2%) was with the mothers at the time of delivery, but only 3% stayed with them in the delivery room. About one third of the fathers (34.7%) received information about BF; 78% of the mothers reported that their partners supported BF, and 82.4% reported that the father participated actively during BF. The father's participation in the decision about introducing new foods was found in 20.7% of the sample. Almost all fathers (95.4%) had a favorable opinion about BF. The main reasons given by fathers, according to the mothers, for their infants to be breastfed were: "Maternal milk is better for the infant's health" (53.8%); "it is the ideal food" (16.2%); "it is good for the development of the infant" (10.0%) (data not shown).

There were no statistically significant associations between paternal characteristics, paternal support during gestation and BF initiation. The analysis of BF prevalence revealed that 60% of the infants were EBF and 10% had already been weaned during follow-up in the first month. In the third month, these rates were 39.0 and 30.0%.

Table 2 shows the results of bivariate analysis of the factors associated with BF in the first month. The following factors increased the risk of weaning: lower level of paternal education (prevalence ratio - PR = 1.94), smoking during gestation (PR = 1.67), mother that did not work outside the home (PR = 1.59), father that did not participate in BF (PR = 3.52) and use of pacifier (PR = 4.67). Family income, maternal age, maternal ethnicity, maternal education, marital status, parity and number of prenatal visits were not included in the Table because their associations had a *p*-value greater than 0.20. Mothers that felt that their partners supported their BF continued breastfeeding, whereas only 57.0% of those that did not perceive such support continued it.

In the third month (Table 3), the factors associated with BF discontinuation were: young mother (PR = 1.45); white mother (PR = 1.28), lower level of paternal education

Table 2 - Unadjusted and adjusted analysis of breastfeeding in the first month

Variable	BF				PR (95%CI)	aPR (95%CI)[d]	*p*-value
	No		Yes				
	n	%	n	%			
Father's age							
<20	3	3.3	56	6.5	1.00		0.06
20–29	39	42.8	404	47.0	1.73 (0.55–5.43)		
30–34	26	286	150	17.4	2.91 (0.91–9.25)		
≥35	23	25.3	250	29.1	1.66 (0.51–5.34)		
Father's ethnicity							
White	61	67.0	637	74.1	1.00		0.09
Not white	30	33.0	223	25.9	1.36 (0.90–2.05)		
Father's education[a]							
0–4	25	27.5	139	16.2	1.94 (1.15–3.29)	1.85 (1.05–3.25)	0.02
5–8	42	46.1	439	51.0	1.11 (0.69–1.80)	1.08 (0.65–1.79)	0.03[e]
≥9	24	26.4	282	32.8	1.00	1.00	
Smoking during pregnancy							
Yes	33	36.3	209	24.3	1.67 (1.12–2.49)		0.01
No	58	63.7	651	75.7	1.00		
Maternal work outside the home							
Yes	23	25.3	310	36.0	1.00		0.03
No	68	74.7	550	64.0	1.59 (1.01–2.51)		
Father's participation in breastfeeding							
Yes	52	57.1	732	85.1	1.00	1.00	<0.001
No	39	42.9	128	14.9	3.52 (2.41–5.15)	3.35 (2.18–5.13)	
Gestational age[b]							
<37	16	17.6	94	10.9	1.63 (0.99–2.69)		0.05
≥37	75	82.4	766	89.1	1.00		
Birth weight[c]							
<2500	12	13.2	65	7.6	1.72 (0.98–3.02)		0.05
≥2500	79	86.8	795	92.4	1.00		
Use of pacifier							
Yes	78	85.7	457	53.1	4.67 (2.63–8.27)	4.51 (2.49–8.14)	<0.001
No	13	14.3	403	46.9	1.00	1.00	
Total	91	100	860	100			

BF: breastfeeding; PR (95%CI): prevalence ratio of not breastfeeding and 95% confidence interval. [a]schooling years; [b]weeks; [c]in grams; [d]prevalence ratio adjusted for factors that remained in multivariate model and 95% confidence interval; [e]*p*-value in multivariate analysis, when different from value in bivariate analysis.

(PR=1.52), smoking during gestation (PR=1.36), mother not living with partner (PR=1.37), lack of father's support for BF (PR=3.21), mother not working outside the home (PR=1.25), father's absence while mother was breastfeeding (PR=1.98), and use of pacifier (PR=4.85). The following variables were also analyzed, but were not included in the Table because *p* was greater than 0.20: family income, parity and number of prenatal visits.

After hierarchical multivariate analysis, the following variables remained associated with the outcome: in the first month, paternal education, paternal participation in BF and use of pacifier (Table 2); in the third month, white mother, low level of paternal education, mother not living with partner, lack of father's support for BF, lack of father's participation in BF and use of pacifier (Table 3).

There were no statistically significant associations between paternal variables and BF in the sixth month. The variables associated with weaning in the sixth month were: smoking during gestation (PR=1.25; p=0.002) and gestational age less than 37 weeks (PR=1.22; p=0.04). Multivariate analysis did not

Table 3 - Unadjusted and adjusted analysis of breastfeeding in the third month

Variable	BF				PR (95%CI)	aPR (95%CI)[d]	*p*-value
	No		Yes				
	n	%	n	%			
Father's age							
<20	12	4.4	47	7.1	1.00		0.13
20–29	135	49.1	304	45.7	1.51 (0.90–2.55)		
30–34	58	21.1	115	17.3	1.65(0.95–2.85)		
≥35	70	25.4	199	29.9	1.28(0.74–2.20)		
Mother's age							
<20	66	24.0	111	16.7	1.45 (1.03–2.04)		0.07
20–29	133	48.4	340	51.1	1.09 (0.80–1.50)		
30–34	40	14.5	110	16.5	1.04 (0.70–1.53)		
≥35	36	13.1	104	15.7	1.00		
Mother's ethnicity							
White	214	77.8	475	71.4	1.28 (1.00–1.63)	1.38 (1.03–1.85)	0.04
Not white	61	22.2	190	28.6	1.00	1.00	0.03[e]
Father's education[a]							
0–4	58	21.1	104	15.6	1.52 (1.14–2.02)	1.60 (1.09–2.32)	0.01
5–8	145	52.7	328	49.3	1.30 (1.02–1.66)	1.31(0.98–1.77)	0.02[e]
>9	72	26.2	233	35.0	1.00	1.00	
Maternal schooling[a]							
0–4	56	20.4	116	17.4	1.20 (0.92–1.58)		0.17
5–8	117	42.5	274	41.2	1.11 (0.88–1.38)		
>9	102	37.1	275	41.4	1.00		
Smoking during pregnancy							
Yes	87	31.6	152	22.9	1.36 (1.10–1.67)		0.01
No	188	68.4	513	77.1	1.00		
Mother lives with partner							
Yes	217	78.9	570	85.7	1.00	1.00	0.01
No	58	21.1	95	14.3	1.37 (1.09–1.73)	1.38 (1.02–1.86)	0.04[e]
Maternal work outside the home							
Yes	83	30.2	246	37.0	1.00		0.03
No	192	69.8	419	63.0	1.25 (1.00–1.55)		
Apoio paterno na amamentação							
Apoiou	143	52.0	587	88.3	1.00	1.00	<0.001
Não apoiou	132	48.0	78	11.7	3.21 (2.68–3.84)	3.47 (2.67–4.50)	
Father's support during breastfeeding							
Yes	194	70.5	582	87.5	1.00	1.00	<0.001
No	81	29.5	83	12.5	1.98 (1.62–2.41)	2.04 (1.52–2.73)	
Gestational age[b]							
<37	39	14.2	70	10.5	1.26 (0.96–1.66)		0.07
≥37	236	85.8	595	89.5	1.00		
Birth weight[c]							
<2500	29	10.5	47	7.1	1.34 (0.99–1.82)		0.05
≥2500	246	89.5	618	92.9	1.00		
Use of pacifier							
Sim	249	77.1	375	48.3	4.85 (3.31–7.10)	4.00 (2.65–6.00)	<0.001
No	26	22.9	290	51.7	1.00	1.00	
Total	275	100	665	100			

PR (95%CI): prevalence ratio of not breastfeeding and 95% confidence interval. [a]schooling years; [b]weeks; [c]in grams; [d]aPR: prevalence ratio adjusted for factors that remained in multivariate model and 95% confidence interval; [e]*p*-value in multivariate analysis, when different from value in bivariate analysis.

reveal the presence of confounding variables (difference between unadjusted and adjusted values was lower than 10%), and the variables associated with the outcome remained the same.

Discussion

Scientific interest has long focused on factors that may affect BF duration and be used to promote and protect BF. One of these factors, still little studied in the literature, is the father's presence, his support to the mother during BF and his participation in decision making. This study has raised information that may enrich our knowledge about the paternal factors that affect BF duration and help us to think about new strategies to support the increase of BF. As part of a longitudinal population-based study that evaluated several outcomes, this study had some limitations. The most relevant was the fact that fathers were not interviewed, and only data about maternal perceptions were used. However, it was exactly the way that mothers perceive the father's support and the way it affects them that motivated this study. In addition, the fact that it used a representative sample of all newborns in the city where it was conducted and assessed the perception of support and outcomes as they occurred, which minimized possible recall biases, increased study validity.

The father's support according to the mothers had substantial influence on BF prevalence in the first month. Similar findings were reported by Arora *et al*[7], whose study found that the most significant factor for early weaning was the mother's perception of her partner's preference and the fear of not providing enough milk for the baby. In addition, 80% of the mothers reported that the father's support encouraged them to breastfeed. In a similar way, Littman *et al*[10] demonstrated that the father's approval was the most significant factor in the decision to breastfeed. The same study found that most fathers (94%) were present at delivery, whereas only 3% of the fathers were in the delivery room in our study.

A cohort study conducted in German by Kuhlhuber *et al*[11] found that the factor with the strongest association with BF initiation was the father's positive attitude toward BF. Our study did not find any association between the father's support and BF in the sixth month, which suggests that the father's support and his positive attitude are more relevant in the first months of the infant's life and may lose importance in subsequent months, when other factors may be involved.

Favorable opinions and the father's active participation in breastfeeding were strongly associated with BF duration. Similar results were found in three other studies[6,7,12]. Bar-Yam and Darby[6] conducted a review and found that fathers had a positive influence on three aspects: the breastfeeding decision, assistance at first feeding, and duration of breastfeeding. In contrast, the lack of the father's support may be a risk factor for bottle feeding. A similar result was found in our study, as fathers that did not support breastfeeding corresponded to a 52% greater risk of infants being bottle fed at three months ($p<0.001$).

The study conducted by Falceto *et al*[13] found a strong association between parents that lived together and BF in the first months, because fathers that have a good relationship with their partners had a 3.2 times greater chance of providing the necessary support for BF. Faleiros *et al*[14], in a review study, reported that mothers that had a stable relationships and received support from other people, particularly their partner, breastfed for a longer time. A similar result was found in our study at three months. Parents in a stable relationship may be more confident and relaxed about the changes in the couple's life after a gestation. Such confidence may be felt by the mother, who will then have one more reason to achieve success in BF.

The results of our study also showed an association between the father's education and BF in the first months. Fathers with a better level of education probably have better access to information and are more aware of BF benefits. Similar results were reported in studies conducted by Littman *et al*[10], Susin *et al*[8] and Flacking *et al*[15].

Like the mother, the father goes through a period of adaptation when changing from man to father, a fact that has a very important impact on him. Fear, responsibility for another being, changes in his partner's behavior and in the marital relationship, all these feelings are present for most men during the time before the baby is born. Faustino and Freitas *et al*[16] conducted a qualitative study and confirmed these conflicting feelings perinatally. Moreover, their study highlighted the importance of the father's presence since gestation because, in this way, the man becomes part of the process, which affects the quality of the couple's life. In the same context, Faustino and Freitas *et al*[17], in a qualitative study, found that fathers are currently going through a transition, that is, a change of paradigm. The same study found that some fathers are concerned about the affective dimension of being a father and of following up their child's growth and development closely: the affective provider has gradually emerged from the material provider.

Another study conducted by Falceto *et al*[18] demonstrated the association between the father's and the mother's mental

health. The mother's mental health was closely correlated with the father's mental health, and the prevalence of mental disorders (depression, anxiety and others) was high. Mothers with psychiatric disorders had a two times greater risk of early weaning. This confirms the importance of having a father figure that understands and accepts the transition from man to father, and that can, therefore, avoid the development of possible mental disorders after delivery.

A number of studies has demonstrated the effectiveness of interventions that involve fathers and BF duration. Pisacane *et al*[12] found that the support given to fathers by showing them the practice of BF and managing the difficulties that they faced increased BF rates at six months (25% in the intervention group and 15% in the control group). Wolfberg *et al*[19] conducted a randomized clinical trial and found that the prevalence of BF initiation was greater in the group where fathers were present during the intervention (74 vs. 41%). In a study conducted in southern Brazil, Susin *et al*[8] found that, in the intervention group that included fathers, the risk of EBF discontinuation was significantly reduced before the sixth month.

Our study suggests that fathers should be encouraged to participate in prenatal visits and in gestation groups, so that healthcare professionals have the opportunity to make them aware of the importance of BF.

The affective link between mother-infant-father should be formed since gestation. The active presence of the father during preparation for maternity may encourage the mother to breastfeed for a longer time because, as seen in several studies, the father's approval of breastfeeding is an extremely important factor for BF success.

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